Kalyan Bharati

ISSN No. 0976-0822
(UGC-CARE List Group I)

PRODUCTION DRIVERS OF MICRO, SMALL AND MEDIUM SCALE PUMP MANUFACTURERS IN COIMBATORE DISTRICT: AN EMPIRICAL STUDY

Dr.T.S. KAVITHA, Associate Professor in Management,

Nehru Arts and Science College, Coimbatore.

Abstract

In India, there are over 800 pump manufacturers, of which a few are large players including Indian and MNCs with revenues above Rs100 crore and large number of MSME players. The pumps market is broadly classified into two categories: industrial pumps, which cater to infrastructure sectors; and agriculture and domestic pumps. Indian pump exporters are facing intense competition from foreign counterparts in providing to global needs. In recent years, the Indian pump industry has been forced to be proactive with international players bringing in superior pumps to the market. The issues and challenges faced by the pump industries in selected micro, small and medium scale pump industries in Coimbatore district are hence analysed in this study.

MSMEs: INDIAN PERSPECTIVE

MSME sector has enormous potential in countries such as India, where abundant labour resources often help to fulfil the much-needed labour requirement. Unlike many developed countries, the expansion of the MSME sector has greater relevance in developing as well as less developed countries. This growth perspective has a beneficial implication, as it would lead to economic growth of the country. As pointed out earlier, it can help to bring down the regional disparities too. In case of India, the sector has immense potential to provide both self-employment opportunities and wage employment, and in this process, it has become one of the largest employers in low-skilled sectors in the agricultural sector. As the uncertainty associated with agriculture and traditional inputs in farmland reduces the prospect of higher earnings, there is a necessity to generate income from non – farm sector where people can get employment and, in the process, would be able to sustain themselves in times of hardships **(Berry et al., 2001).**

PUMP INDUSTRY IN INDIA

Pump sets are widely used to lift and transfer water in the agricultural, domestic, municipal, and industrial sectors. Pumps can be classified into different types such as submersible (mixed and radial flow), open-well submersible (monoset), centrifugal monobloc, back pull centrifugal, sewage pump, and mud-pump. According to industry estimates, the Indian pump industry has more than 2,000 manufacturers, employs 120,000 people, and produces about 4.5 million pumps per annum.

PUMP INDUSTRY IN COIMBATORE

The first electric motor and water-lifting pump in India were produced in Coimbatore seven decades back. India's first pump was produced at Dandayudhapani foundry, Coimbatore in the year 1928. Today 60% of India's requirements of domestic and agricultural pump sets are made in Coimbatore. Besides Coimbatore, Ahmedabad, Baroda, Calcutta, and Dewas are the other places where agricultural pump industries are situated. Today, the pump and motor manufacturing sector are among the largest engineering activities in the city. The pump manufacturing industry in Coimbatore holds a major portion of the total Indian market share. The motor and pump industry supplies over 40% of India's requirements. The Major Pump manufacturers Aquasub engineering, Mahendra Pumps, Suguna pumps, Sharp Industries, Deccan Pumps, CRI Pumps, Texmo Industries, PVG Industries, Flowserve, Kirloskar Brothers & KSB Pumps have a manufacturing base in the city (**Joshi and Ravi, 2010).**

ISSN No. 0976-0822
(UGC-CARE List Group I)

NEED FOR THE STUDY

MSMEs even assumes greater significance now as the country moves towards an inclusive growth agenda. Moreover, this sector can help to understand the target of proposed National Manufacturing policy of raising the share of manufacturing sector in GDP from 16 per cent at present to 25 per cent by the end of 2022. Coimbatore is one of the few big industrial towns of the state. There are nearly 1000 registered and MSME industries are functioning in Coimbatore district, employing more than fifty thousand workers. They account for 25 per cent of the total number of units in Tamil Nadu. The state government associated with more associations that are industrial are actively involving and supporting to uplift the particular industry. On the above backdrop and conducive business environment motivated to pursue this study. This study would focus the market performance of the MSME pump manufacturers in Coimbatore district, and the study findings shall provide a platform to the industrialist, government and all other stakeholders to make a strategic decision at operation and market level.

STATEMENT OF THE PROBLEM

For the past few years, the Motors and Pumps industry has been passing through a severe recession. The major problems faced by the industry are; Threat of entry of foreign competitors who will be selling products at cheaper rates; the excise duty, sales tax and high-interest charges that have placed the domestic industry in a critical position.

Based on the above scenario the following research questions are probed in the present study attempts to answer with suitable objectives, research methodology, and recommendations.

1. What are the social status and economic status of the MSME pump industries in Coimbatore district?
2. What are the drivers which influencing the production of quality pumps to meet the international standards?

To answer the above questions, the following objectives are framed to study the research problem.

OBJECTIVES OF THE STUDY

1. To study the production drivers of the pump industry.
2. To Examine the Factors determining cost leadership.

SCOPE OF THE STUDY

India has a strong pump manufacturing base with both Indian and International players involved in the market. The Indian pumps market is relatively mature, with domestic sales expected to increase at a rate of sixteen to eighteen per cent per year and export sales projected to grow at around ten to twelve per cent over the next few years. By keeping this in mind, this study aims to reveal the current Market performance that focuses prospects and problems, overall issues and challenges, production drivers of MSMEs pump manufacturing units who engaged in both domestic marketing and export activities in Coimbatore district. This research would help the manufacturers to decide the future course of action for the development of the pump industry, and it would also provide the

RESEARCH METHODOLOGY

This research study attempts to find out the market performance of micro, small, and medium scale pump industries in Coimbatore district. The research method adopted for the collection of data, processing and analysis of data to suit the specific objectives of the study is presented in this chapter. Since the research study is descriptive, it is mainly based on primary data. A structured questionnaire is (Tamil and English) used to collect the data. The data has been collected from selected micro, small and medium scale pump manufactures. Since the population is definite as 525 industries, the simple random sampling method is applied,

and three hundred questionnaires were distributed however able to get a response from 250 respondents. Therefore, the sample size is 250. Coimbatore district is selected as the universe for the study. Since it is an industrial hub with more clusters, all the MSME pump manufacturers in Coimbatore district constitute the universe of the study.

LIMITATIONS OF THE STUDY

1. This study is limited to the response quality of the respondents to the questionnaire for the particular research.
2. The respondents were reluctant to reveal the firm's financial information.
3. This study could not focus on the technical efficacy of pump production.

PRODUCTION DRIVERS OF THE PUMP INDUSTRY

Maintaining Cost Leadership

Opinion	Number of Pump Manufacturers	Percentage
Yes	109	43.6
No	141	56.4
Total	250	100.0

Interpretation

According to the above table, of the 250 Pump manufacturers, 109 (43.6%) state that they could to maintain cost leadership with the production process and 141(56.4%) state their inability to maintain cost leadership. In conclusion, the majority of the pump manufacturers 141 (56.4%) state that they are unable to maintain cost leadership with the production process.

Discussion

The major reason behind maintaining the cost leadership is the material cost of the product. Hence it is a drawback in maintaining the cost leadership. Whereas, the results show that both the opinion holds more or less equal weight stating that there are some issues in maintaining the cost leadership to some respondents when compared to the total respondents.

Effectiveness of Quality Assurance Certification

Quality assurance certification	Opinion	No. of Pump Manufacturers	Percentage
Effectiveness of ISO-Certification	Yes	230	92
	No	20	8
	Total	**250**	**100**
The effectiveness of OHSAS 18001 for quality enhancement	Yes	39	15.6
	No	211	84.4
	Total	**250**	**100**
The effectiveness of ISI-quality assurance	Yes	221	88.4
	No	29	11.6
	Total	**250**	**100**

Interpretation

Out of 250 Pump manufacturers, 230 (92%) of the manufacturers have implemented ISO (The International Organisation for Standardization)-Quality management certification, 211 (84.4%) of them do not have OHSAS18001 (Certification for Occupational Health and Safety) and 221 (88.4%) have practised ISI (Indian standard)-quality assurance. In conclusion, a high majority of the pump manufacturers 230 (92%) have ISO and ISI-quality assurance certification for quality assurance.

ISSN No. 0976-0822
(UGC-CARE List Group I)

Discussion

Majority of the manufacturers hold the ISO standards in their organisation based on the fulfilment of the facilities and meeting the necessary infrastructure.

Rejections Handling Practice

Practice	No. of Pump Manufacturers	Percentage
Not accepted	149	59.6
Accepted and corrective action is taken	97	38.8
Left to dealers preview	4	1.6
Total	250	100.0

Interpretation

From the above table, out of 250 Pump manufacturers, 149 (59.6%) do not accept any rejections being found by the buyer, 97 (38.8%) state that the rejections are being accepted and corrective action are taken and 4 (1.6%) state that the rejections are left to dealers preview.

In conclusion, the majority of the manufacturers 149 (59.6%) do not accept any rejections being found by the buyer. The acceptance of the product is purely based on the required service to be provided. **In case of assured quality service the product will not be accepted in some cases, but in case of retail sales, the dealers receive the products and send to manufacturers for corrective action and will revert the products to the customers.**

Technology adopted by the Pump Manufacturers

Technology adopted	Number of Pump Manufacturers	Percentage
Updated	227	89.2
Old	23	10.8
Total	250	100.0

Interpretation

It shows the level of technology adopts by Pump manufacturers. Out of 250 pump units, 227 (89.2%) have updated technology for the production process,and 23 (10.8%) of them have not updated. In conclusion, a high majority of the manufacturers 227 (89%) have updated technology production process.

Discussion

Up gradation towards the latest trends and technology is an essential source of withstanding in the present market.

Awareness of Advanced Technology

Awareness source	Opinion	No. of Pump Manufacturers	Percentage
Conference and Seminar	Highly aware	28	11.2
	Aware	189	75.6
	Not aware	33	13.2
	Total	250	100
Trade fairs and exhibitions	Highly aware	40	16
	Aware	178	71.2
	Not aware	32	12.8
	Total	250	100

Entrepreneurial development programmers	Highly aware	80	32
	Aware	141	56.4
	Not aware	29	11.6
	Total	250	100
Meeting and discussions with trade associations	Highly aware	28	11.2
	Aware	146	58.4
	Not aware	76	30.4
	Total	250	100
Benchmarking with large-scaleorganisations	Highly aware	16	6.4
	Aware	84	33.6
	Not aware	150	60
	Total	250	100

Interpretation

It shows that the awareness of advance technology practised at the national and international market.

Awareness through conference and seminar

Out of the 250 Pump manufacturers, 28 (11.2%) of the pump manufacturers state that they are 'highly aware' on advance technology practised at the national and international market through conference and seminar. 189 (75.6%) state that they 'aware', 33 (13.2%) 'Not aware'. In conclusion, ahigh majority of the pump manufacturers 189 (75.6%) are 'aware' of advance technology practised at the national and international market through conference and seminar.

Awareness through trade fairs and exhibitions

Out of the 250 Pump manufacturers, 40 (16%) of the pump manufacturers state that they are 'highly aware' on advance technology practised at the national and international market through trade fairs and exhibitions. 178 (71.2%) 'aware' and 32 (12.8%) of the pump manufacturers are 'not aware'. In conclusion, the majority of the pump manufacturers 178 (71.2%) are 'aware' of advance technology practised at the national and international market through trade fairs and exhibitions.

Awareness through entrepreneurial development programmers

Out of the 250 Pump manufacturers, 80 (32%) of the pump manufacturers state that they are 'highly aware' of advance technology practised at national and international market through entrepreneurial development programmers, 141 (56.4%) 'aware' and 29 (11.6%) 'not aware'.

In conclusion, the majority of the pump manufacturers 141 (56.4%) state that 'aware' of advance technology practised at the national and international market through entrepreneurial development programmes are an effective one.

Awareness through meeting and discussions with trade associations

Out of the 250 Pump manufacturers, 28 (11.2%) of the pump manufacturers state that they are 'highly aware' on advance technology practised at the national and international market through meeting and discussions with trade associations. 146 (58.4%) 'aware' and 76 (30.4%) are 'not aware' ofadvanced technology. In conclusion, the majority of the pump manufacturers 146 (58.4%) 'Aware' of advance technology practised at the national and international market through meeting and discussions with trade associations are effective one.

Awareness through benchmarking with large-scale organisations

Out of the 250 Pump manufacturers, 16 (6.4%) of the pump manufacturers state that they are 'highly aware' on advance technology practised at the national and international market through benchmarking with large-scaleorganisations. 84 (33.6%) 'aware' and 150 (60%) of them

are ‘not aware’ ofadvanced technology. In conclusion, the Majority of the pump manufacturers 150 (60%) are ‘unaware’ of advance technology practised at the national and international market through benchmarking with large-scale organisations is an effective one.

Discussion

The pump manufacturers are used to get along with the association for latest updates, programmes, meetings, technologies and other events. The associations include TAPMA, COINDIA, CODISSIA, IPMA and SIEMA.

Factors determining Cost Leadership

Factors	Opinion	Number of Pump manufacturers	Percentage
Material cost	Strongly Agree	84	33.6
	Agree	157	62.8
	Neutral	5	2
	Disagree	4	1.6
	Total	**250**	
Machinery Cost	Strongly Agree	111	44.4
	Agree	119	47.6
	Neutral	16	6.4
	Disagree	4	1.6
	Total	**250**	
Labour Cost	Strongly Agree	84	33.6
	Agree	131	52.4
	Neutral	23	9.2
	Disagree	12	4.8
	Total	**250**	
Power and other tariffs	Strongly Agree	76	30.4
	Agree	131	52.4
	Neutral	28	11.2
	Disagree	15	6
	Total	**250**	
Infrastructure and technology cost	Strongly Agree	96	38.4
	Agree	143	57.2
	Neutral	7	2.8
	Disagree	03	1.2
	Total	**250**	

Interpretation

Material cost

According to Table, 84 (44.4%) of the pump manufacturers are ‘strongly agree’ that higher cost of material is the determinant of cost leadership, 157 (47.6%) are ‘agree’ on higher material cost, 5 (6.4%) of them are neutral and 4 (1.6%) of the pump manufacturers are ‘disagree’ on higher cost of material.

In conclusion, most of the pump manufacturers 157 (47.6) are ‘agree’ on higher material cost is the determinant of cost leadership**.**

Machinery Cost

According to Table, 111 (33.6 %) of the pump manufacturers are ‘strongly agree’ on higher machinery maintenance cost is the determinant of cost leadership, 119 (52.4%) are ‘agree’, 16 (9.2%) are ‘neutral’ and 4 (4.8%) are ‘disagree’ on higher machinery maintenance cost. In conclusion, the majority of the pump manufacturers 131 (52.4%) are ‘agree’ on higher machinery maintenance cost is the

determinant of cost leadership.

Labour Cost

According to Table, 84 (33.6%) of the pump manufacturers are 'strongly agree' on higher labour cost is the determinant of cost leadership. 131 (52.4%) are 'agree', 23 (9.2 %) are 'neutral' and 12 (4.8%) are 'disagree' on higher labour cost. In conclusion, the majority of the pump manufacturers 131 (52.4%) are 'agree' on higher labour cost is the determinant of cost leadership.

Likewise, it is evident from the information given by Kakde and Chaudhari (2018) that 60.0% of authorities agreed to the statement, whereas 26.3% of authorities are strongly agreed to the statement. Furthermore, the percentage of authorities strongly disagreed and neutral to the statement was 6.9% each. The chi-square statistics shows that at df 3 and significant level <0.001 the chi-square value is 66.743, which is significant at 95% confidence interval, which means that there is significant difference in opinion of authorities with respect to statement. Thus, high percentage of authorities agreed to the statement that raising labour cost is the problem

Power and another tariff

According to Table, 76 (30.4%) are 'strongly agree' on higher Power and other tariffis the determinant of cost leadership, 131(52.4%) 'agree', 28 (11.2%) are neutral and15 (6%) are 'disagree' on higher power cost.

In conclusion, the majority of the pump manufacturers 131 (52.4%) 'agree' on higher power cost is the determinant of cost leadership**.**

Infrastructure and technology Cost

According to Table, 96 (38.4%) are 'strongly agree' on infrastructure and technology cost is the determinant of cost leadership, 143 (57.2%) 'agree' on , 7(2.8%) are 'neutral' and 3 (1.2%) are 'disagree' on. In conclusion, the majority of the pump manufacturers, 143 (57.2%) 'agree' on infrastructure and technology cost is the determinant of cost leadership.

Discussion

Lahiri states that there exists considerable heterogeneity among the MSMEs in India. A small percentage of firms operate with sophisticated technology base whereas the majority of firms use outdated technology. They suffer from low productivity and poor product quality. Due to their small size, they cannot enjoy large-scale production economies.

CONCLUSION

Coimbatore is the region of the motor pump industry, which used to produce a large share of pumps in the country. Coimbatore produces 75% of the pumps in the country. The industry does a business of 16 crores per day. However, now the city gives only 50% of the total production. Manufacturers responded that the high cost of raw material, intense competition from the states such as Gujarat and cheap import from China are some of the factors that have influenced to the 30 per cent reduction in production out of their production capacity. It is the real-time challenge to the MSME pump industry to recover the existing situation by enriching them with updated technology, quality consciousness at par with international standard, tapping the untapped market, increase the exports, create brand image through brand building strategies, concentrating product line integration, full utilisation of capacity, financial soundness for expansion and to attain higher growth and profitability.

References

1. Devadasan, S. R., Kathiravan, N., & Thirunavukkarasu, V. (2006). Theory and practice of total quality function deployment: a perspective from a traditional pump-manufacturing environment. The TQM Magazine, 18(2), 143-161.
2. Nelik, L. (1999). Centrifugal & Rotary Pumps: Fundamentals with Applications. CRC Press.

3. Rajasekaran, R., & Krupa, M. E. (2013). Global Marketing-A Study with Reference to Motor Pumps in Coimbatore City, India. Global Journal of Management and Business Studies, 3(6), 565-572.
4. Devakumar, G. (2013). An Empirical Study on Customer Satisfaction with Special Reference to Domestic Sector Pumps in Coimbatore. IUP Journal of Marketing Management, 12(1), 25.
5. Kumar, D. (2014). Women Entrepreneurship in India: Obstacles and Opportunities. International Journal of Research (IJR), 1(5), 135-147.
6. Nagayya, D., & Rao, P. T. (2010). Development of small and medium enterprises in Andhra Pradesh. Osmania Journal of International Business Studies, 5(1and2), 176-198.
7. Saravanan, M. K., & Vijayarani, K. (2014). Swot Analysis of Micro Small and Medium Enterprises in Thanjavur District. Asia Pacific Journal of Research Vol: I, Issue XIII.
8. Vasanthi, S. (2009) CSR and ethics in MSMEs in India African Journal of Business Ethics, Vol.4 No.2, December 2009, 32-36.