

A Study on Triple Bottom Line Approach in Export Performance of Pump Industry in Coimbatore

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Abstract: Coimbatore's pump manufacturing sector is vital to India's export market and makes a substantial contribution to both the industrial and agricultural sectors of the nation. This study uses the Triple Bottom Line (TBL) strategy, which incorporates social, environmental, and economic sustainability into business operations, to analyse the export performance of Coimbatore's Pump exports. The purpose of the study is to evaluate the effects of TBL principles on long-term sustainability, market expansion, and export competitiveness. Important elements including worker welfare (social), eco-friendly manufacturing (environmental), and financial profitability (economic) are examined to see how they affect the performance of global commerce. The study will investigate how Coimbatore pump exporters have adopted sustainable practices and how they correspond with international trade norms through the use of primary surveys and secondary data analysis. The results will shed light on how TBL-driven tactics might improve brand recognition, export growth, and regulatory compliance in global markets. Policymakers, exporters, and other stakeholders seeking to balance profitability with social and environmental obligations while enhancing export sustainability and competitiveness will find this research useful.

Keywords: Triple Bottom Line Approach, Exports, Pump Manufacturers, Coimbatore city, Motor & Pump Exports.

1. Introduction

The motor and pump industry bloomed in India between 1920 and 1940, with the launch of the first submersible pump of India in the year 1928 and electric motor in the year 1937 in the Coimbatore region. Ever since, the motor and pump Industry has flourished in India because 58 per cent of country's population still relies on agriculture sector for their livelihood. The major motor and pumps Industries in India are situated in Ahmedabad, Batala, Belgaum, Coimbatore, Jalandhar, Kolhapur, Rajkot, and Hyderabad. The Indian motors and pumps are self-sufficient to capture various sectors such as power generation, papers and pulps, agriculture utilities, and nuclear power. Earlier, Indian motor and pump industries were only focused on domestic market demand of agriculture and infrastructural industries but liberalization, privatization, and globalization forced them to thrive in international market as well.

This study examines how the TBL approach influences the export performance of pump motor manufacturers in Coimbatore. It explores the role of skilled workforce, ethical business practices, eco-friendly production methods, and financial stability in driving export competitiveness. With increasing global demand for energy-efficient and environmentally sustainable products, exporters must align with international standards to maintain market leadership.

This paper explores how Coimbatore's pump motor export sector can align its marketing strategies with TBL principles to achieve sustainable growth. It focuses on:

1. *Economic Sustainability:* Ensuring profitability and cost-effectiveness in export operations while exploring new markets and fostering innovation to remain competitive globally.
2. *Social Sustainability:* Promoting fair labour practices, supporting local communities, and ensuring stakeholder engagement, including suppliers, employees, and customers.
3. *Environmental Sustainability:* Minimizing the ecological footprint by adopting energy-efficient technologies, using sustainable materials, and complying with international environmental standards.

2. Objectives of the Study

- To understand the Demographic Profile of the Respondents.
- To analyse the Influence of Independent variable on Export Performance.
- To study the relationship between Triple bottom line approach & Export Performance.

3. Review of Literature

Negi, Raghuvver & Muthusamy, A. & Nomani, Abuzar. (2023). The waterfall approach to analyze the globalization techniques of Coimbatore based motor and pump manufactures. In this study the data was collected through personal meetings and mail reviews from 143 export units. The study highlights

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that the moving from domestic market to global market have the perks specifically for those SMEs who practice the innovation in their product line. Also, it is observed that there is a significant relationship between quality of the firms and development variables used in this study.

Mr. A. Balakrishnan (2024), The study looks at the strength of the industry and the researcher's obtained information about the performance of the industry from the market. This study provides opportunities for future research. This paper examined, a scientific studies method has been followed and the desired records has been accumulated from diverse to be had assets and studies suggests in that the huge metropolis pump manufacturing industry has adopted worldwide marketing techniques and keeps to pursue manufacturing and deliver chain control overall performance The look at also highlights some enterprise developments relevant to the pump manufacturing enterprise. Coimbatore's industrial revolution began with pumps, and today it remains a major source of many products in India; more than 60% of the country's pump needs are met by Coimbatore. Pump manufacturers in Coimbatore are very competitive in their product range and are always willing to invest in research and development.

Dr. N. Chandrakala, Mr. V.P. Keerthi Vaasan (2024) This study aims to examine the development path and strategic placement of motor and pump exporters in Coimbatore, India, by conducting a thorough analysis of their strengths, weaknesses, opportunities, and challenges (SWOC) as well as sector's growth. The motor and pump sector in Coimbatore has attracted significant recognition for its impact on the local economy and its importance in the international marketplace. The Indian pumps market is fairly mature, with domestic sales expected to increase at a rate of 16 to 18 percentage per year, and exports projected to grow at around 10 to 12 per cent over the next few years. Today 60% of India's requirements of domestic and agricultural pump sets are made in Coimbatore. The pump manufacturing industry in Coimbatore holds a major portion of the total Indian market share.

R. Sathya & N. D. Sree Devi Andal (2022) Pump sets come under the essential commodities category, having huge market in India and across globe. The Pump industry is the oldest growing industry in the city of Coimbatore, which contributes substantially to Coimbatore's GDP. Tamil Nadu and Gujarat are the major pump manufacturing states in India. Coimbatore of Tamil Nadu is called the 'Pump City of India' and it is home to all the leading pump brands like Aqua Pumps, Yathi Pumps, C R I Pumps, Texmo Pumps, KSB Pumps, Deccan Pumps and so on. Covid-19 has created significant impact on the industry; however, the pump industry is gradually regaining its demand. This study gives focus on the study of problems faced by the pump industry, the prospects and future of the industry.

Dr. T.S. Kavitha (2021) The Indian pumping industry has its growth, has made a considerable contribution to the country's economic growth. The GDP of the country and India in particular consists of contributions from agriculture, industrial infrastructure, utilities, and services. In the context of the agricultural sector, it should be mentioned that most loans related to food self-sufficiency in India are also related to the

Indian pump industry. In the context of the infrastructure, utilities, and services sector, it can be noted that Indian pumps have responded to the needs of urban water supply for decades, completely independent.

Jayanthi G. (2021). As this article provides a theoretical advancement in international growth and will stimulate for further investigation of how internationalization affects a firm's organizational behavior towards performance. The study reveals that there exists significant association between performance variables and growth. The overall international growth can be achieved by increasing firm specific advantages like, innovation, adaptability, employment of skilled man power, setting of research and development centers etc., for internationalization. Also, it is found that growth is connected with performance indicators like increased sales volume, profit, asset value and enterprise value. All these variables are analysed by using statistical tools of finding mean score and to find relationship among the variables for knowing the firm growth.

4. Research Methodology

This study employs descriptive research to analyze the chosen subject systematically. The research follows a simple random sampling design, ensuring an unbiased selection of participants. The study is conducted in Coimbatore, with a population size of 126 individuals. From this population, a sample size of 55 respondents has been selected to provide insights into the research objectives.

5. Analysis and Interpretation

A. ANOVA

1) Null Hypothesis

The null hypothesis (H₀) is a statement that assumes there is no effect, no difference, or no relationship between variables, serving as the default assumption in hypothesis testing. It is tested statistically to determine whether it should be rejected.

2) Alternative Hypothesis

The alternative hypothesis (H₁) represents the research hypothesis, suggesting that there is a significant effect, difference, or relationship. If sufficient evidence is found, the null hypothesis is rejected in favour of the alternative hypothesis.

Table 1
One-way annual turnover by AVGEMP

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.623	6	.604	.955	.477
Within Groups	14.544	23	.632		
Total	18.167	29			

Source: Primary data

Interpretation:

Since the p-value is greater than 0.05, we fail to reject the null hypothesis(H₀), meaning that export market performance does not significantly affect annual turnover. This implies that companies with different export market performances do not show significant differences in their annual turnover.

Table 2
One-way ANOVA by AVGEMP

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.531	7	.790	3.395	.013
Within Groups	5.120	22	.233		
Total	10.652	29			

Source: Primary data

Interpretation:

Since the p-value is less than 0.05, we reject the null hypothesis(H1), indicating that export market performance significantly influences the number of employees in a company. This implies that firms with better export market performance may have more employees, possibly due to increased production demands, expansion strategies, or operational scaling.

Table 3
Correlation

Variables	Pearson Correlation	Significant Level
AVGPE	.710	0.00
AVGEMP	.626	0.00
AVGPR	.656	0.00
AVGPL	.543	0.00
AVGEFP	1	0.00

Source: Primary data

From the above table People Correlated with Export Performance ($R=0.710$, $P>0.000$), because this strong correlation highlights social dimension (People) plays a crucial role in driving economic and environmental sustainability. It ensures that business investing in human resource development, fair employment practices, and employee well-being achieve higher export performance, reinforcing the TBL framework where people-driven strategies lead to economic prosperity and sustainable business practices.

From the above table Market Performance Correlated with Export Performance ($R=0.626$, $P>0.000$), indicates a strong positive relationship, emphasizing that a company's success in international markets directly influences its overall export performance. Under the Triple Bottom Line (TBL) approach, economic sustainability plays a key role, as firms with a strong market presence can achieve higher revenues, better global positioning, and long-term business growth. This correlation highlights these businesses focusing on market expansion, customer satisfaction, and sustainable trade practices not only improve their financial performance but also contribute to broader social and environmental responsibilities, reinforcing the principles of the TBL framework.

The correlation between profit and export performance ($R=0.656$, $P>0.000$) signifies a strong positive relationship, indicating that higher profitability enhances a company's ability to perform well in international markets. Under the Triple Bottom Line (TBL) approach, economic sustainability is a fundamental factor, as profit enables firms to invest in advanced technology, skilled labour, quality improvements, and market expansion, all of which contribute to sustained export growth. Medium and large enterprises, which dominate the sector, leverage their financial strength to improve product innovation, supply chain efficiency, and customer service, further boosting exports.

The correlation between planet (environmental sustainability) and export performance ($R=0.543$, $P>0.000$) indicates a moderately strong positive relationship, signifying that companies prioritizing eco-friendly practices tend to perform better in international markets. Under the Triple Bottom Line (TBL) approach, environmental sustainability plays a crucial role as global markets increasingly demand energy-efficient, eco-friendly, and regulatory - compliant products. Medium and large enterprises in the pump motor export sector benefit from adopting green manufacturing technologies, waste reduction strategies, and renewable energy sources, which not only reduce environmental impact but also enhance brand reputation and market competitiveness.

The perfect correlation between financial performance and export performance ($R=1$, $P>0.000$) signifies that export success is directly and entirely dependent on financial growth. Under the Triple Bottom Line (TBL) approach, economic sustainability serves as the foundation for export-oriented businesses, particularly in the pump motor sector, where capital investment in technology, skilled labour, and market expansion is essential for global competitiveness. Higher financial performance enables firms to enhance production capacity, maintain product quality, and comply with international trade regulations, leading to increased exports.

6. Suggestions

- 1) Pump motor exporters can increase optimizing production costs using lean manufacturing to maintain competitive pricing.
- 2) Pump motor export companies can invest in pollution control equipment and waste management systems.
- 3) Pump motor export companies can introduce solar-powered water pumps for agriculture and remote areas to reduce carbon footprint.
- 4) Pump motor export companies can focus target industries like agriculture, water treatment and construction with specialized pump solutions.

7. Conclusion

The Triple Bottom Line (TBL) approach plays a crucial role in shaping the export performance of pump motor manufacturers in Coimbatore by integrating economic, social, and environmental sustainability. The findings emphasize that a balanced focus on People, Planet, and Profit leads to long-term growth, brand reputation, and regulatory compliance, ensuring business resilience in an evolving global trade environment. Additionally, government support, policy interventions, and industry-wide sustainability initiatives are essential for strengthening export performance. By embracing Triple Bottom Line driven strategies, pump motor exporters in Coimbatore can achieve sustainable business success, expand market reach, and contribute to global environmental and social well-being.

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