

## REVERSE LOGISTICS CHALLENGES IN EXPORT-ORIENTED MSMEs: EVIDENCE FROM COIMBATORE CITY

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### ABSTRACT:

Reverse logistics has become increasingly important in international trade, especially with the rise in product returns and growing customer expectations. For MSME exporters, managing reverse logistics is often difficult due to limited resources and infrastructure. This study focuses on understanding the challenges faced by MSME exporters in Coimbatore city while handling reverse logistics activities. The research is based on primary data collected from 50 respondents through a structured questionnaire. The study uses simple analytical tools such as percentage analysis, chi-square, ANOVA, regression, and ranking techniques. The findings reveal that high transportation costs, complex customs procedures, and lack of proper infrastructure are the major challenges. The study concludes that improving logistics systems, increasing awareness, and strengthening policy support can help MSMEs manage reverse logistics more effectively.

### KEYWORDS

Reverse Logistics, MSME Exporters, Export Challenges, Supply Chain, Logistics Management

### INTRODUCTION

In the current global business environment, exporting goods is not limited to delivering products to customers. Businesses are also expected to handle returns efficiently. This process, known as reverse logistics, includes activities such as product returns, repair, recycling, and disposal. For large companies, reverse logistics can be managed with the help of advanced systems and resources. However, for MSME exporters, the situation is quite different. These firms often operate with limited financial capacity and infrastructure, which makes handling returns more difficult. Coimbatore is one of the major industrial centers in Tamil Nadu, known for its strong base in textiles, engineering goods, and manufacturing. MSME exporters from this region play an important role in international trade. However, they face several practical issues in managing reverse logistics.

With increasing exports, product returns have also increased. These returns may happen due to damage, quality issues, or customer dissatisfaction. If not handled properly, they can affect profitability and customer relationships. Therefore, it becomes important to study the challenges faced by MSME exporters in reverse logistics.

### REVIEW OF LITERATURE

**Subhendu Bhattacharya (2024)** examined reverse logistics and waste management in India, highlighting issues like poor recycling systems and weak infrastructure. The study pointed out that limited government support makes it difficult for MSMEs to manage returns efficiently. It concluded that better infrastructure and policy support are needed. **K. Sivaji (2024)** focused on challenges faced by MSMEs in reverse logistics, such as lack of funds, technical knowledge, and training. The study found that many firms are not well-prepared to handle returns effectively. It suggested that training and government support can improve adoption. **Melanie Winkenbach (2023)**

studied reverse logistics in e-commerce and noted the rise in product returns due to online shopping. The research highlighted the need for strong logistics networks and digital tracking systems. It concluded that technology is essential for managing returns efficiently. **Jan Fransoo (2022)** analyzed reverse logistics challenges in global supply chains, focusing on transportation complexity and uncertain return volumes. The study showed that unpredictability creates planning and cost issues. It suggested better planning and flexible systems to manage these challenges. **Amit Kumar (2022)** examined reverse logistics issues among MSMEs and found that financial limits and lack of awareness are major barriers. The study highlighted that many firms do not prioritize reverse logistics. It concluded that better awareness and support systems are required. **René de Koster (2022)** focused on warehouse management in reverse logistics and emphasized efficient handling of returned goods. The study pointed out that poor storage and sorting systems increase delays and costs. It concluded that improved warehouse practices can enhance overall efficiency.

### **.Concept and Importance of Reverse Logistics in International Trade**

Reverse logistics is often misunderstood as just “product returns,” but in reality, it involves much more. It includes processes like inspection, sorting, repairing, recycling, and even disposal of returned goods. In international trade, this process becomes more complicated due to distance, regulations, and coordination issues. One important reason why reverse logistics matters is customer satisfaction. In global markets, buyers expect smooth return and replacement processes. If exporters fail to handle returns efficiently, it can affect their reputation and future business. Another aspect is cost recovery. Even if a product is returned, businesses try to recover some value through repair or resale. Without a proper reverse logistics system, this becomes difficult. There is also an environmental angle. Many countries now encourage recycling and responsible disposal of products. Reverse logistics helps businesses meet these expectations. However, for MSMEs, implementing all these processes is not easy. Limited awareness, high costs, and lack of proper systems make reverse logistics a challenging task.

### **MSME Exporters and Their Role in the Indian Economy**

MSMEs are often called the backbone of the Indian economy, and rightly so. They contribute significantly to employment, production, and exports. In many sectors, MSMEs act as key suppliers in global supply chains. When it comes to exports, MSMEs help in promoting Indian products in international markets. They are flexible, adaptable, and capable of producing customized goods. However, their small size also brings certain limitations. Many MSME exporters struggle with finance, technology, and infrastructure. While they manage forward logistics somehow, reverse logistics often becomes an overlooked area. This creates inefficiencies and affects their overall performance.

### **MSME Exporters in Coimbatore**

Coimbatore has built a strong reputation as an industrial and export hub. The presence of MSMEs in sectors like textiles, pumps, and engineering goods makes it a key contributor to exports. Most of these exporters operate on a moderate scale. They have good production capabilities but may lack advanced logistics systems. Many rely on third-party logistics providers for shipping and handling returns. One noticeable issue is that reverse logistics is not always given priority. In many cases, firms handle returns on an ad-hoc basis instead of following a structured approach. This leads to delays, confusion, and additional costs.

### **Challenges in Reverse Logistics**

From the data collected, it is clear that MSME exporters face multiple challenges in reverse logistics. The biggest issue highlighted by respondents is high transportation cost. Sending goods back from international markets involves heavy expenses, which directly affects profitability. Another major challenge is customs procedures. Exporters often find documentation and regulations difficult to manage, especially when dealing with returned goods. The lack of infrastructure is also a concern. Many MSMEs do not have access to proper warehouses or

return processing centers. In addition, issues like product damage, poor packaging, and lack of coordination with logistics providers further complicate the process.

### STATEMENT OF THE PROBLEM

Reverse logistics has become an important part of export operations, but MSME exporters often struggle to manage it effectively. In Coimbatore city, exporters face several challenges while handling product returns from international markets. One of the major issues is the high cost involved in returning goods, which directly affects profitability. In addition, complex customs procedures and documentation create delays and confusion. Many MSMEs also lack proper infrastructure such as warehouses and return processing facilities. Another problem is the absence of a structured reverse logistics system. Many firms handle returns on an informal basis, which leads to inefficiencies. Limited awareness about government schemes and lack of technical knowledge further add to the problem. These issues make reverse logistics a difficult process for MSME exporters, highlighting the need for a detailed study.

### RESEARCH GAP

Although reverse logistics has been widely studied, there is limited research focusing on MSME exporters in Coimbatore city. Most studies provide a general overview and do not address the specific challenges faced by small exporters in this region. There is also a lack of primary data-based studies that reflect real-time issues faced by MSMEs. This study aims to fill this gap by providing insights based on actual responses collected from exporters.

### OBJECTIVES OF THE STUDY

- To identify reverse logistics practices followed by MSME exporters
- To examine the challenges faced in managing product returns
- To analyze the impact of reverse logistics on cost and efficiency
- To suggest measures to improve reverse logistics practices

### RESULTS AND DISCUSSIONS

The tools used for analysis on this study are Percentage Analysis, Chi-square Analysis, Regression Ranking Analysis and ANOVA.

#### Reason for Product Returns

TABLE NO : 4.1

S. No.	Reason	No. of Respondents	Percentage %
1	Product Defect	13	26%
2	Damage during Transport	15	30%
3	Quality Mismatch	12	24%
4	Customer Cancellation	10	20%
	<b>Total</b>	<b>50</b>	<b>100%</b>

(Source : Primary data)

Damage and defects are the major reasons for product returns. This indicates issues in production quality and transportation. Improving these areas can reduce returns. Therefore, quality control and packaging are critical factors.

#### Null Hypothesis (H<sub>0</sub>):

There is no significant association between nature of business and major challenges in reverse logistics.

#### Alternative Hypothesis (H<sub>1</sub>):

There is a significant association between nature of business and major challenges in reverse logistics.

**TABLE NO: 4.2a**

**Case Processing Summary**

Cases	Valid N	Percent	Missing N	Percent	Total N	Percent
Business * Challenges	50	100%	0	0%	50	100%

(Source : Primary data)

**TABLE NO: 4.2b**

**Crosstabulation**

Nature of Business	Cost	Customs	Infrastructure	Documentation	Total
Manufacturing	9	6	4	3	22
Trading	4	3	2	2	11
Manufacturing & Trading	4	4	5	4	17
<b>Total</b>	17	13	11	9	50

(Source : Primary data)

**TABLE NO: 4.2c**

Test	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.73	6	0.840
Likelihood Ratio	2.95	6	0.810
Linear-by-Linear Association	0.30	1	0.580
N of Valid Cases	50		

(Source : Primary data)

The chi-square results indicate that there is no significant association between the variables tested. This shows that reverse logistics challenges are common across different categories of firms. Business type, experience, or policies do not significantly alter the situation. Hence, the null hypothesis is accepted.

**TABLE NO: 4.3**

**Major Challenges faced by MSME Exporters in Reverse Logistics**

Challenges	1	2	3	4	5	Total	Weighted Average	Rank
High Transportation Cost	2	5	8	10	25	151/50	3.02	I
Customs Procedures	3	6	12	15	14	131/50	2.62	II
Lack of Infrastructure	5	8	14	12	11	116/50	2.32	III
Documentation Issues	6	10	13	11	10	109/50	2.18	IV
Lack of Technology Adoption	8	12	10	10	10	102/50	2.04	V

(Source : Primary data)

The ranking analysis clearly shows that transportation cost is the most critical issue. Customs procedures and infrastructure follow next. This indicates that operational and regulatory challenges dominate. Therefore, addressing these factors is essential for improvement.

**Null Hypothesis (H<sub>0</sub>):**

Reverse logistics practices do not significantly influence cost impact on MSME exporters.

**Alternative Hypothesis (H<sub>1</sub>):**

Reverse logistics practices significantly influence cost impact on MSME exporters.

**TABLE NO: 4.4 a**  
**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error
1	.182a	.033	.010	.81234

a. Predictors: (Constant), Frequency of product returns  
(Source : Primary data)

**TABLE NO : 4.4b**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.552	1	.552	.837	.365b
Residual	32.948	48	.686		
Total	33.500	49			

(Source : Primary data)

**TABLE NO : 4.4 c**  
**Coefficients**

Model	B	Std. Error	Beta	t	Sig.
(Constant)	3.210	.522		6.150	.000
Frequency of Returns	.145	.158	.182	.915	.365

(Source : Primary data)

The regression results indicate a weak relationship between reverse logistics practices and cost impact. This shows that reverse logistics alone does not significantly influence cost. Other external factors may play a role. Hence, the impact is limited.

**Null Hypothesis (H<sub>0</sub>):**

There is no significant difference in perception of reverse logistics challenges among different experience levels.

**Alternative Hypothesis (H<sub>1</sub>):**

There is a significant difference in perception of reverse logistics challenges among different experience levels.

**TABLE NO: 4.5**  
**Descriptives**

Experience	N	Mean	Std. Deviation	Std. Error
<5 years	13	3.85	1.12	.31
5–10 years	16	3.95	1.08	.27
10–15 years	11	4.10	1.05	.32
>15 years	10	4.20	0.98	.31
Total	50	4.00	1.08	.15

(Source : Primary data)

TABLE NO: 4.5a

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.245	3	.415	.362	.781
Within Groups	52.755	46	1.147		
Total	54.000	49			

(Source : Primary data)

The ANOVA results show no significant difference among respondent groups. This indicates that all exporters share similar perceptions of challenges. Experience or business size does not create variation. Hence, the null hypothesis is accepted.

### FINDINGS AND RECOMMENDATIONS:

The study shows that product returns are mainly due to damage during transportation and product defects, highlighting issues in logistics handling and production quality. Other reasons like quality mismatch and customer cancellation also play a role, though to a lesser extent. The chi-square results indicate that reverse logistics challenges are common across all types of businesses, with no major differences. Ranking analysis reveals that high transportation cost is the most serious issue, followed by customs procedures and infrastructure problems. The regression results suggest that reverse logistics has only a weak impact on cost, meaning other external factors also influence expenses. Overall, the study concludes that MSME exporters face similar challenges, mainly driven by high costs and operational inefficiencies. MSME exporters should develop a structured approach to handle reverse logistics. Improving coordination with logistics providers can help in managing returns efficiently. Government support is essential in simplifying customs procedures and reducing costs. Providing training and awareness programs can help MSMEs understand reverse logistics better. Adopting basic technologies such as tracking systems can improve transparency. Improving product quality and packaging can also reduce the number of returns.

### CONCLUSION:

Reverse logistics is becoming an important part of export operations, especially for MSME exporters. This study shows that exporters in Coimbatore face several challenges in handling returns effectively. By addressing issues such as cost, infrastructure, and awareness, MSMEs can improve their logistics performance. With better planning and support, reverse logistics can become more efficient and less burdensome.

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