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An Analysis of Logistics Performance in Coimbatore City

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ABSTRACT

Logistics performance is a key factor influencing economic growth and industrial development. This study focuses on the logistics performance of Coimbatore, one of Tamil Nadu's major industrial hubs. It examines transportation facilities, warehousing systems, supply chain efficiency, and logistics service quality in the region. The study identifies key challenges such as traffic congestion and infrastructure limitations, while also highlighting opportunities for improvement through technology adoption and better coordination. The findings suggest that enhancing logistics infrastructure and operational efficiency can significantly support the industrial growth and competitiveness of Coimbatore.

KEYWORDS: *Economic growth, Industrial development, Coimbatore City*

1. INTRODUCTION:

Logistics is the backbone of modern commerce, involving the planning, implementation, and control of the movement and storage of goods, services, and information from origin to consumption. It ensures timely delivery, cost efficiency, and customer satisfaction, forming a vital part of supply chain management. Logistics covers transportation, warehousing, inventory management, and information flow, supporting both military and civil operations. Since logistics accounts for a significant share of operational costs and national GDP, efficient management and technology adoption are essential to minimize expenses and optimize performance. India's logistics sector plays a crucial role in connecting industries, markets, and consumers, driven by trade growth, industrialization, and e-commerce expansion. However, challenges such as inadequate infrastructure, high transportation costs, regulatory issues, and slow digital adoption persist. Coimbatore, known as the "Manchester of South India," is a major industrial hub with strong textile, manufacturing, and export sectors that rely heavily on efficient logistics services. Improving infrastructure and technological integration in Coimbatore can significantly enhance regional industrial growth and competitiveness.

2. OBJECTIVE OF THE STUDY

- To study the overall logistics performance of logistics service providers in Coimbatore district.
- To examine the impact of technology adoption, cost efficiency, and logistics performance.

- To provide suitable suggestion for improving logistics performance based on the finding of the study.

3. STATEMENT OF PROBLEM

Despite being the backbone of numerous industries and business ventures, Coimbatore's logistics sector still faces numerous operational difficulties. The main issues are inadequate infrastructure, growing transportation costs, complicated regulations, inefficient supply chain integration, and restricted application of cutting-edge technologies. In the logistics ecosystem, these difficulties lead to more frequent delays, increased operating expenses, and decreased service efficiency. Additionally, a lot of logistics companies struggle to manage skilled labor and implement digital solutions. Strategic interventions like improved infrastructure, technology-enabled systems, and economical logistics techniques are required to address these problems. In order to help businesses and logistics operators in Coimbatore improve logistics performance and service quality, this study looks into these issues and makes recommendations.

4. METHODOLOGY OF THE STUDY

The study adopts a descriptive research design to analyze the performance and challenges of the logistics sector in Coimbatore district. It is quantitative in nature and is based on primary data collected through a structured questionnaire using a 5-point Likert scale and ranking method. Secondary data is gathered from journals, research articles, government reports, textbooks, and websites. A convenience sampling technique is used, and the sample size consists of approximately 100–150 respondents, including logistics service providers, transport operators, warehouse managers, and business clients.

5. RESEARCH GAP

Most existing studies on India’s logistics sector focus on national data or major metropolitan cities, with limited research specifically addressing Coimbatore despite its growing industrial importance. Previous research often examines factors like transportation cost, digital adoption, and operational efficiency separately, while overlooking their combined impact and the challenges faced by SMEs. Therefore, this study aims to fill this gap by providing a comprehensive regional analysis and practical recommendations to improve logistics performance in Coimbatore.

REVIEW OF LITERATURE

1.Y. Tseng, W.L. Yue & M.A.P. Taylor (2005) – The study explains the important role of transportation in the logistics chain. It states that transportation and logistics are closely connected, and transportation contributes the highest cost in logistics activities. Improving transport efficiency improves overall logistics performance. Without effective transportation, logistics systems cannot function properly.

2. Anas M. Atieh (2016) – The study examines the impact of Warehouse Management Systems (WMS) on supply chain performance. It found that implementing WMS improves inventory control, workflow efficiency, and resource utilization. The research concludes that WMS enhances operational efficiency and supports the shift from manual systems to digital logistics management.

ANALYSIS AND INTERPRETATION

TABLE: 1

THE LOGISTICS SERVICE PROVIDER OF THE RESPONDENTS

DESIGNATION	NO.OF RESPONEDENT	PECENTAGE
Logistic manager	8	20
Operations/supply chain executive	13	32.5
Warehouse supervisior	6	15
Transport/dispatch coordinator	4	10
Hr/administrator	9	22.5
TOTAL	**40**	**100**

Source: Primary Data

INTERPRETATION

Out of 40 respondents, 67.5% are freight forwarders, 15% provide courier/parcel services, 7.5% are warehousing companies, and 5% each are 3PL providers and transport companies. This clearly shows that

LOGISTICS SERVICE PROVIDER	NO.OF RESPONEDENT	PERCENTAGE
Freight forwarder	27	67.5
3pl provider	2	5
Transport company	2	5
Warehousing company	3	7.5
Courier/parcel service	6	15
TOTAL	**40**	**100**

freight forwarding services dominate the sample, highlighting their major role in logistics operations.

TABLE: 2

THE DESIGNATIONOF THE RESPONDENTS

Source: Primary Data

INTERPRETATION

Among the respondents, 32.5% are operations/supply chain executives, 22.5% are HR/administrators, 20% are logistics managers, 15% are warehouse supervisors, and 10% are transport/dispatch coordinators. Therefore, most responses are obtained from operational-level professionals, ensuring practical insights into logistics performance

TABLE: 3

THE EXPERIENCE OF THE RESPONDENTS

EXPERIENCE	NO.OF RESPONDENTS	PERCENTAGE
0-2 Years	7	17.5
3-5 Years	7	17.5
6-10 Years	12	30
Above 10 Years	14	35
Total	**40**	**100**

Source: Primary Data

INTERPRETATION

From the table, out of 40 respondents, 35% of the respondents have above 10 years of experience, 30% have 6–10 years, and 17.5% each belong to 0–2 years and 3–5 years of experience. This shows that the majority of respondents are highly experienced professionals, indicating reliable and knowledgeable responses for the study.

CROSS TABULATION

TABLE 1

TECHNOLOGY ADOPTION AND EXPERIENCE

Source: Primary Data

INTERPRETATION

The table illustrates the cross tabulation of technology adoption and experience. From the table, it was found that the calculated p value is 0.003, which is statistically significant and less than 0.05.Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be concluded that there is a significant association between technology adoption and experience. Therefore, it can be concluded that there is a significant association between Technology Adoption and experience.

TECHNOLOGY ADOPTION	**EXPERIENCE**				**TOTAL**	**Chi- square**
	0-2 YEARS	**3-5 YEARS**	**6-10 YEARS**	**ABOVE 10 YEARS**		
LOW	3	0	10	9	22	20.142 0.03
MEDIUM	3	1	1	2	7	(S)
HIGH	1	6	1	3	11	
TOTAL	**7**	**7**	**12**	**14**	**40**	

TABLE 2

LOGISTICS PERFORMANCE AND SIZE ORGANIZATION

Logistic Performance	**Size Organization**			**Total**	**Chi-Square**
	Small-scale	**Medium-scale**	**Large-scale**		
LOW	0	1	6	7	11.142
MEDIUM	3	5	2	10	0.025
HIGH	6	1	6	7	(S)
Total	**9**	**5**	**2**	**10**	

Source: Primary Data

INTERPRETATION

The table illustrates the cross tabulation of logistic performance and size of organization. From the table, it

was found that the calculated p value is 0.025, which is statistically significant and less than 0.05. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be concluded that there is a significant association between Logistics Performance and Size Organization.

TABLE 3

NATURE OF OPERATION AND COST EFFICIENCY

NATURE OF OPERATION	COST EFFICIENCY			TOTAL	CHI-SQUARE
	LOW	MEDIUM	HIGH		
Local	1	5	1	7	3.125 0.793(NS)
Regional	3	5	2	10	
National	2	12	4	18	
International	1	4	0	5	
Total	**7**	**26**	**7**	**40**	

Source: Primary Data

INTERPRETATION

The table illustrates the cross tabulation of organization size and sustainability. From the table, it was found that the calculated p value is 0.615, which is higher than 0.05 and statistically not significant. Hence, the null hypothesis is accepted and the alternative hypothesis is rejected.it can be concluded that there is a significant no association Nature of Operation and Cost Efficiency

FINDINGS

- Majority (67.5%) of the respondents are Freight Forwarders, indicating that freight services dominate the sample.
- Majority (32.5%) of the respondents are working as Operations/Supply Chain Executives, showing that most responses are from operational-level professionals.
- Majority (35%) of the respondents have above 10 years of experience, indicating experienced professionals participated in the study.
- There is a significant association between Technology Adoption and Experience ($p = 0.003 < 0.05$).
- There is a significant relationship between Logistics Performance and Size of Organization ($p = 0.025 < 0.05$), but no significant association between Nature of Operation and Cost Efficiency ($p = 0.793 > 0.05$).

SUGGESTIONS

To improve logistics performance, organizations should adopt advanced logistics technologies that enhance operational efficiency and accuracy. Providing regular technical training to employees is essential to upgrade their skills and ensure effective use of new systems. Infrastructure and digital systems must be improved to support smooth operations and better coordination across the supply chain. Additionally, continuous performance monitoring helps identify gaps, reduce errors, and enhance overall efficiency.

CONCULSION

The study analyzed the factors affecting logistics performance and cost efficiency in logistics firms. It was found that most respondents are experienced professionals working in freight forwarding services. The results show a significant relationship between technology adoption and experience, indicating that experienced employees are more likely to adopt advanced technologies. The study also reveals that organization size significantly influences logistics performance, with medium-scale firms showing better performance levels. However, nature of operation does not have a significant impact on cost efficiency. Overall, the findings highlight that technology adoption, organizational structure, and effective management practices play a crucial role in improving logistics performance and operational efficiency.

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