iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 14 **Issue:** II **Month of publication:** February 2026

DOI: https://doi.org/10.22214/ijraset.2026.77639

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue II Feb 2026- Available at www.ijraset.com

A Study on Operational Challenges in 3PL from the Vendor's Perspective and their Effect on Fulfilling Customer Needs

Ms. Vennila P[1], Mr. P Keerthivasan[2]
[1]*II MCom IB, PG & Research Department of International Business, Sri Ramakrishna College of Arts & Science, Coimbatore*
[2]*Assistant Professor, PG & Research Department of International Business, Sri Ramakrishna College of Arts & Science, Coimbatore*

Abstract: ***Third-Party Logistics (3PL) providers play a crucial role in modern supply chains by supporting transportation, warehousing, and order fulfilment activities. However, vendors face several operational challenges that affect their ability to meet customer expectations. This study examines the key operational challenges faced by 3PL vendors and analyses their impact on fulfilling customer needs. Primary data were collected from 150 respondents (75 vendors and 75 customers) in Coimbatore city using a structured questionnaire. Descriptive statistics and ranking analysis were employed for data interpretation. The findings reveal that delivery delays, lack of proper tracking systems, and high delivery charges are the major operational issues affecting customer satisfaction. The study concludes that improved technology adoption, workforce training, and infrastructure development are essential for enhancing service quality and customer fulfilment in the 3PL sector.***
Keywords: Third-Party Logistics, Operational Challenges, Customer Fulfilment, Vendor Perspective, Service Quality

I. INTRODUCTION

Globalization and the growth of e-commerce have increased dependence on Third-Party Logistics (3PL) providers for efficient movement of goods. 3PL refers to the outsourcing of logistics functions such as transportation, warehousing, inventory management, and distribution to specialized service providers. Vendors play a critical role in ensuring timely and accurate delivery of goods to customers. Despite their importance, 3PL vendors face multiple operational challenges including rising transportation costs, manpower shortages, poor infrastructure, and limited technology adoption. These constraints reduce operational efficiency and affect the ability of vendors to meet customer expectations regarding delivery speed, tracking, and product safety. While most previous studies focus on customer satisfaction, limited research examines these challenges from the vendor's perspective, particularly in the Indian context. Hence, this study attempts to bridge this gap by analysing vendor challenges and their impact on customer fulfilment.

II. REVIEW OF LITERATURE

1) Kim et al. (2023) conducted research on "Customer Fulfilment Performance of 3PL Vendors" with responses from 260 clients and vendors. The findings indicated that operational reliability strongly influenced customer satisfaction. The authors suggested performance benchmarking and customer feedback systems. The study concluded that consistent operations enhance customer trust
2) Das and Banerjee (2024) analysed "Customer Complaints and Operational Failures in 3PL Services" with responses from 230 customers and vendors. The study found that delivery delays and poor communication were the main causes of complaints. The authors suggested real-time tracking and proactive communication. The study concluded that transparency improves customer fulfilment
3) Extensive Industry Report (2025) studied operational trends among 3PL vendors and found that vendors with automated and customer-centric operations performed better. The report suggested customer-focused operational strategies. The conclusion emphasized that operational excellence directly affects customer fulfilment

III. OBJECTIVES OF THE STUDY

1) To identify the major operational challenges faced by 3PL vendors.
2) To analyse the impact of these challenges on fulfilling customer needs.

©IJRASET: All Rights are Reserved

3) To study factors influencing customer satisfaction with 3PL services.
4) To suggest measures for improving vendor performance and service quality.

IV. RESEARCH METHODOLOGY

The study adopted a descriptive research design. Primary data were collected using a structured questionnaire from 150 respondents (75 vendors and 75 customers) in Coimbatore city through purposive sampling. Secondary data were obtained from journals, reports, and websites. Tools used for analysis include percentage analysis and ranking method.

V. RESULTS AND ANALYSIS

Table 1: Awareness and Usage of 3PL Services

Factor	Percentage (%)
Awareness through e-commerce	58.7
Word of mouth	24.0
Advertisements	14.7
Monthly usage of 3PL services	38.7
Weekly usage	25.3
Rare usage	26.7

Interpretation: More than half of the respondents became aware of 3PL services through e-commerce platforms. Monthly usage was the most common, indicating moderate dependence on 3PL services.

Table 2: Major Problems Faced by Customers (Percentage Analysis)

Problem Faced	Percentage (%)
Delay in delivery	46.7
Lack of proper tracking	44.0
High delivery charges	41.1
Damaged products	37.3
Poor customer service	20.0

Interpretation: Delivery delay (46.7%) is the most critical problem faced by customers, followed by lack of tracking facilities (44%) and high delivery charges (41.1%). These findings show that time and transparency are major determinants of customer satisfaction.

Table 3: Major Challenges Faced in 3PL Services

Factors	Percentage (%)	Rank
Delay in delivery	46.7	1
Lack of proper tracking	44.0	2
High delivery charges	41.1	3
Damaged products	37.3	4
Poor customer service	20.0	5

Interpretation: The results indicate that delivery delay is the most critical challenge, followed by lack of tracking facilities and high delivery charges.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

Table 4: Factors Influencing Satisfaction with 3PL Services

Factors	Percentage (%)	Rank
Cost of delivery	54	1
Tracking facility	50	2
Product safety & packaging	42	3
Delivery speed	41	4
Customer service	41	5

Interpretation: Cost and tracking facilities are the most influential factors affecting customer satisfaction.

VI. DISCUSSION

The study confirms that operational inefficiencies significantly influence customer fulfilment in the 3PL sector. Delivery delays and poor tracking systems reduce customer trust and satisfaction. High delivery charges further limit service acceptance. These findings support earlier studies by Langley and Capgemini (2019) and Zhang et al. (2020), which highlight cost pressure and technology gaps as critical challenges.

From the vendor's perspective, manpower shortages and inadequate infrastructure also contribute to service failures. Customers increasingly expect real-time tracking, faster delivery, and safe handling of goods. Failure to meet these expectations leads to complaints, loss of contracts, and reduced competitiveness.

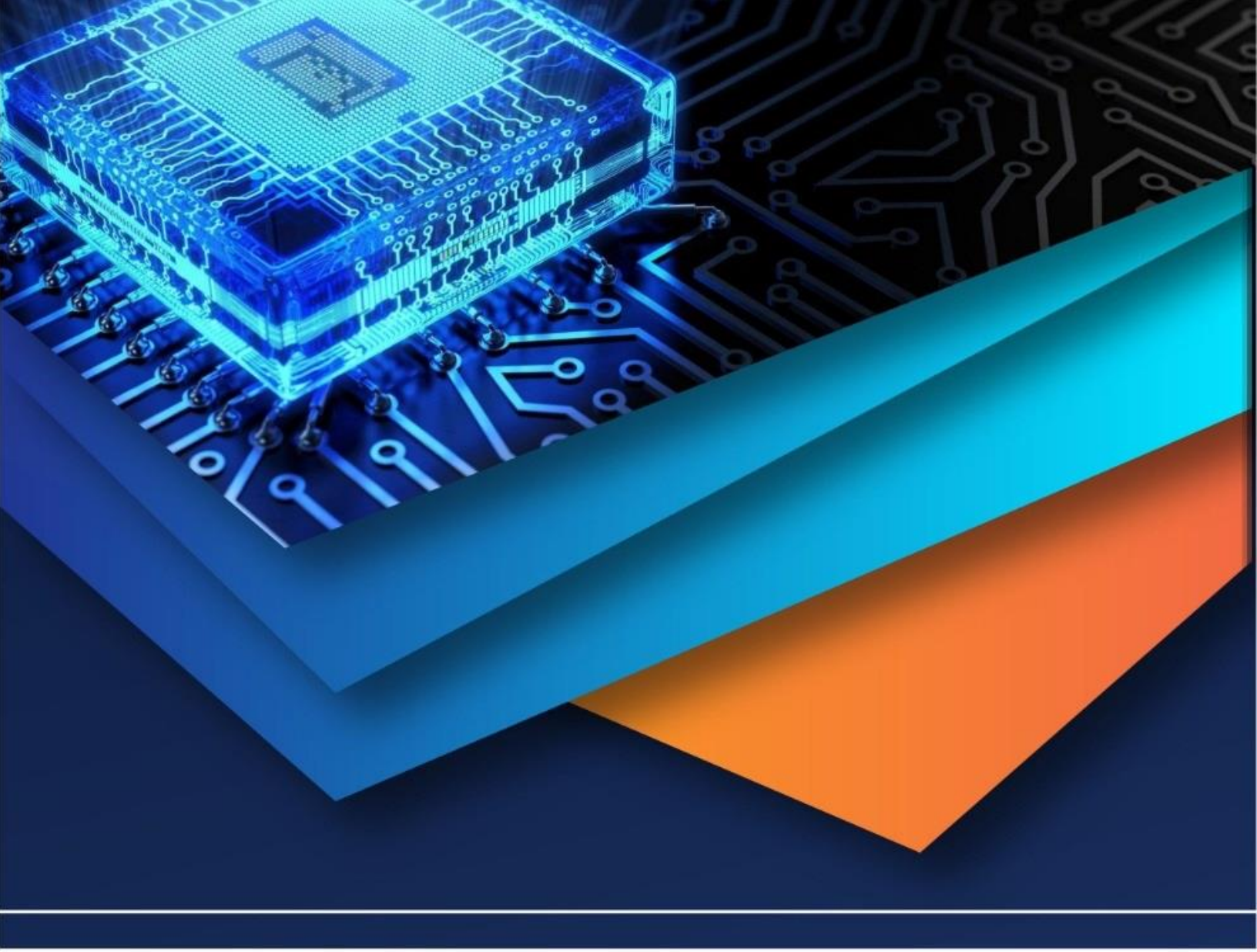
VII. CONCLUSION

The study concludes that operational challenges faced by 3PL vendors have a direct impact on customer fulfilment. Delay in delivery, lack of proper tracking systems, and high delivery costs are the most significant issues. Improving technological adoption, investing in workforce training, and strengthening infrastructure can enhance operational efficiency and customer satisfaction. The study contributes to understanding logistics challenges from the vendor's perspective and provides practical insights for improving 3PL service performance.

REFERENCES

[1] Kim, H., Lee, J., & Park, S. (2023). Customer fulfilment performance of 3PL vendors. Transportation Journal, 62(1), 45–60.
[2] Das, S., & Banerjee, A. (2024). Customer complaints and operational failures in 3PL services. International Journal of Service Industry Management, 35(1), 25–40
[3] Extensive Industry Report. (2025). Operational trends among third-party logistics vendors. Industry Research Publications.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)