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A Study on Vendor Challenges in the 4Party Logistics and their Impact on Customer Satisfaction

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Abstract: ***The increasing complexity of global supply chains has led to the adoption of Fourth-Party Logistics (4PL) systems, where a single integrator coordinates multiple logistics service providers. Although 4PL enhances operational efficiency and strategic control, vendors functioning within this framework encounter several structural and operational challenges. The present study examines the key challenges faced by vendors in 4PL environments and analyses their impact on customer satisfaction. A descriptive research design was adopted, and primary data were collected from 150 respondents using a structured questionnaire. Statistical techniques such as percentage analysis and chi-square testing were employed to evaluate the relationship between vendor challenges and customer satisfaction. The results indicate a significant association between coordination issues, technological integration problems, cost pressures, and customer satisfaction levels. The study emphasizes the importance of effective vendor management and digital integration in improving service quality within 4PL systems.***
Keywords: Fourth-Party Logistics, Vendor Challenges, Customer Satisfaction, Supply Chain Management, Logistics Integration.

I. INTRODUCTION

Supply chain management has undergone significant transformation due to globalization and technological advancement. Organizations increasingly rely on integrated logistics solutions to manage complex distribution networks efficiently. The Fourth-Party Logistics (4PL) model represents an advanced logistics framework in which a single entity coordinates and manages multiple third-party logistics providers on behalf of clients. Despite its advantages, the 4PL structure presents unique challenges for vendors. These challenges include coordination inefficiencies, technological incompatibility, communication delays, cost management pressures, and difficulties in performance evaluation. Such operational barriers may influence service quality and ultimately affect customer satisfaction. Therefore, understanding vendor-related challenges is crucial for improving logistics performance and sustaining competitive advantage.

II. REVIEW OF LITERATURE

- ZAKI et al. (2022) – TECHNOLOGY INTEGRATION CHALLENGES IN 4PL

Zaki et al. (2022) identified system incompatibility and data security concerns among vendors as key challenges affecting service transparency and customer trust in 4PL operations

- AHMAN et al. (2023) – VENDOR RELATIONSHIP MANAGEMENT IN 4PL

Rahman et al. (2023) emphasized that effective vendor relationship management is essential for reducing service failures and improving customer satisfaction in 4PL logistics.

- KEERTHIVASAN (2024) – FOURTH PARTY LODISTICS

Keerthivasan (2024) explored the role of 4PL in port logistics, highlighting how effective vendor coordination, real-time visibility, and capacity management enhance logistics stability and improve customer satisfaction

- TUROB JONOV (2025) – STRATEGIC VENDOR CHALLENGES IN 4PL

Turobjonov (2025) identified vendor coordination, performance measurement, and data confidentiality as persistent challenges in 4PL logistics affecting customer satisfaction.

- KUMAR & SINGH (2026) – VENDOR CHALLENGES AND CUSTOMER SATISFACTION IN 4PL

Kumar and Singh (2026) empirically studied vendor challenges in 4PL logistics and concluded that poor vendor integration and inconsistent service delivery significantly reduce customer satisfaction.

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III. OBJECTIVE

1) To identify the key vendor-related challenges faced in Fourth-Party Logistics (4PL) operations.
2) To examine how these challenges affect logistics service performance indicators such as reliability, timeliness, and responsiveness.
3) To analyse the relationship between vendor performance issues and customer satisfaction in the 4PL context.
4) To assess the role of technology, communication, and coordination in mitigating vendor challenges.
5) To propose practical strategies for improving vendor management and enhancing customer satisfaction in 4PL logistics.

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 INTERPRETATION

Table-1
Delivery Or Logistics Sevices Managed By A 4pl Providers

S.NO	LOGISTICS SEVICES MANAGED BY A 4PL PROVIDERS	PERCENTAGE
1	YES, MULTIPLE TIMES	16%
2	YES, ONCE OR TWICE	40%
3	NOT SURE	34.7%
4	NO	9.3%

Interpretation: The chart indicates that a majority of respondents have experience with 4PL-managed services, either once or twice (40%) or multiple times (16%). About 34.7% of respondents are not sure whether they have used a 4PL provider, suggesting limited awareness or indirect usage. Only 9.3% reported no experience, indicating that 4PL services are fairly prevalent among respondents

Table-2
How Challenging Is Pricing Pressure From 4pl Provider/ Customers

S.NO	HOW CHALLENGING IS PRICING PRESSURE FROM 4PL PROVIDER/ CUSTOMERS	PERCENTAGE
1	VERY CHALLENGING	14.7
2	CHALLENGING	42.7%
3	MANAGEABLE	37.3%
4	NOT CHALLENGING	5.3%

Interpertation: The chart shows that pricing pressure from 4PL providers/customers is a significant concern for most respondents. A majority find it challenging (42.7%) or very challenging (14.7%), indicating strong cost pressure in operations. However, 37.3% consider it manageable, while only 5.3% feel it is not challenging. Overall, pricing pressure remains a notable challenge for most respondents.

VI. FINDINGS

Technological integration challenges are prominent in 4PL systems. Communication gaps between logistics partners affect delivery efficiency. Cost pressures influence vendor performance and service consistency. Coordination inefficiencies significantly reduce customer satisfaction levels. Improved monitoring systems contribute to better service reliability.

VII. SUGGESTIONS

1) Improving coordination and communication between vendors and 4PL providers helps reduce delays, errors, and service gaps, leading to better customer satisfaction.
2) Adoption of advanced technologies such as real-time tracking, integrated systems, and data analytics improves operational transparency, efficiency, and customer trust.
3) Implementing standardized vendor performance evaluation methods ensures consistent service quality and timely issue identification.
4) Providing regular training and capability development for vendors enhances operational efficiency and their ability to meet 4PL requirements effectively.

VIII. CONCLUSION

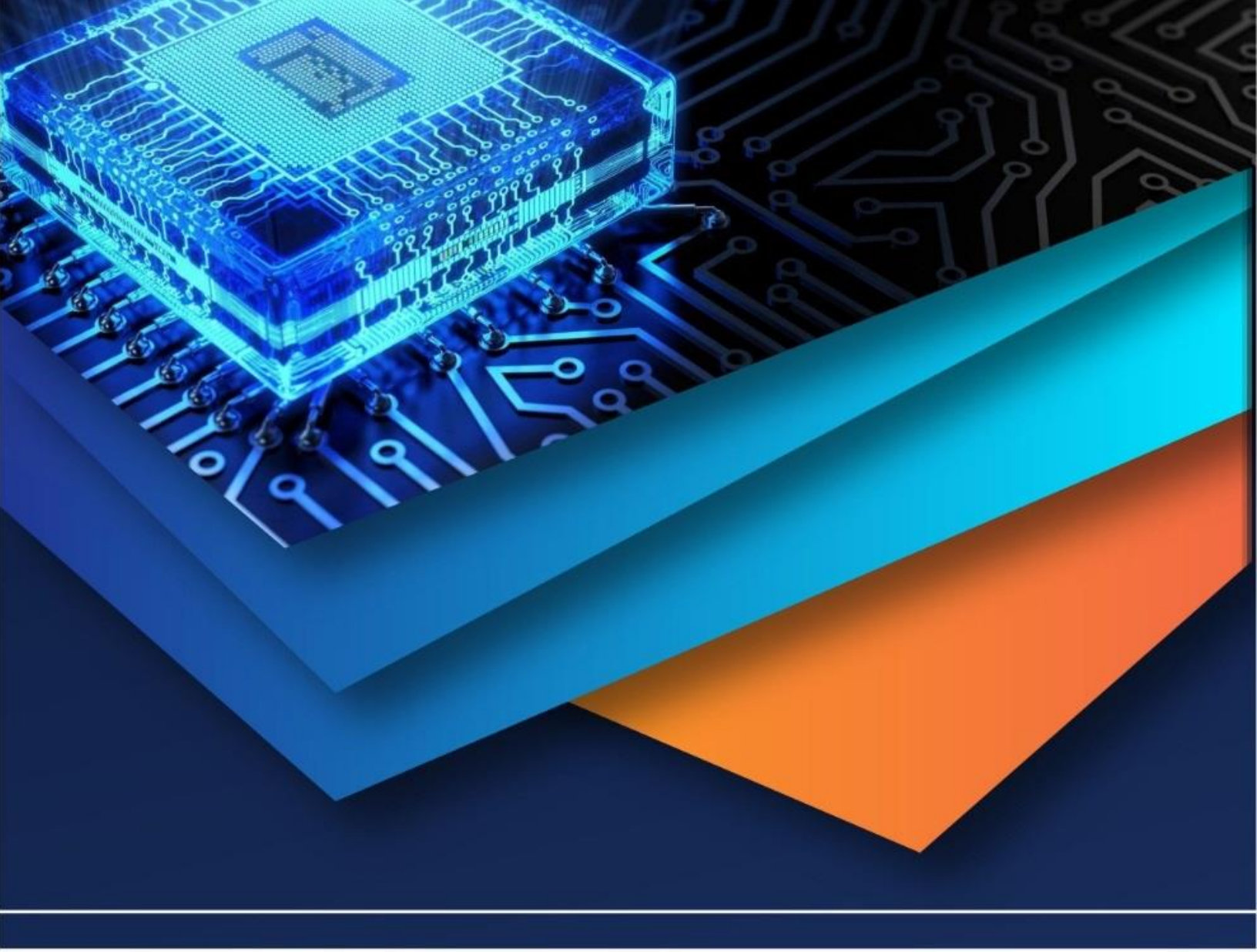
The 4PL model plays a significant role in modern supply chain integration; however, vendor-related challenges substantially influence operational performance and customer satisfaction. The study confirms a meaningful association between coordination issues and satisfaction levels. Addressing technological and communication barriers can enhance vendor efficiency and ensure improved customer experience in 4PL systems

REFERENCES

[1] Kumar et al. (2024). examined vendor digital readiness in 4PL systems and found that limited technological capability among vendors negatively impacts service responsiveness and customer satisfaction**.** Journal,62(1),46-60
[2] Keerthivasan (2024). explored the role of 4PL in port logistics, highlighting how effective vendor coordination, real-time visibility, and capacity management enhance logistics stability and improve customer satisfaction.72(2),26-30
[3] Turobjonov (2025). identified vendor coordination, performance measurement, and data confidentiality as persistent challenges in 4PL logistics affecting customer satisfaction.
[4] Kumar and Singh **(2026)** Empirically studied vendor challenges in 4PL logistics and concluded that poor vendor

BIBLIOGRAPHY

[1] https://www.lassosupplychain.com https://www.trinetix.com
[2] https://www.clickpost.ai
[3] https://www.reachship.com
[4] https://www.olimpwarehousing.com
[5] https://www.lassosupplychain.com



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