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RISK MITIGATION MEASURES AND CUSTOMER SATISFACTION: A STUDY OF SELECTED LOGISTICS FIRMS IN NIGERIA

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Abstract
This study examined the relationship between risk mitigation measures and customer satisfaction in selected Nigerian logistics firms, with particular focus on DHL and Red Star Express. The study adopted a survey research design and targeted a population of 2,461 employees occupying operational and risk-related roles. A sample size of 344 respondents was determined using Taro Yamane's formula, while a simple random sampling technique was employed in selecting the participants. Primary data were gathered through a structured five-point Likert scale questionnaire, which recorded a high reliability coefficient with a Cronbach's Alpha value of 0.801. Data analysis was carried out using SPSS version 26, and Pearson Product-Moment Correlation was used to examine the relationship between the independent variable, risk mitigation measures, and the dependent variable, customer satisfaction. Out of the 344 questionnaires distributed, 313 were validly completed and returned, representing a response rate of 91%. The findings revealed a Pearson correlation coefficient (r) of 0.507 with a p-value of 0.000, indicating a statistically significant moderate positive relationship between risk mitigation measures and customer satisfaction, thereby leading to the rejection of the null hypothesis. The study concluded that effective and proactive risk mitigation strategies, such as contingency planning, supply chain monitoring, and operational control measures, play a significant role in improving service reliability, minimizing operational disruptions, and enhancing customer trust and satisfaction within the logistics industry.

Keywords: Customer Satisfaction, Logistics Firms, Risk Management, Risk Mitigation Measures.

1. Introduction

Despite the strategic importance of the logistics industry to Nigeria's economic growth and supply chain development, the sector continues to experience significant operational challenges that undermine service efficiency and customer satisfaction. Persistent issues such as poor road infrastructure, regulatory inconsistencies, cargo theft, delivery delays, inadequate technology adoption, and rising operational costs have increased the level of uncertainty faced by logistics firms (International Trade Administration, 2020; Etim, 2019). Although risk mitigation measures are intended to minimise these uncertainties through contingency planning, operational controls, route

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optimisation, inventory monitoring, and safety management practices, many logistics firms in Nigeria still experience recurring service disruptions and customer complaints, suggesting weaknesses in the implementation or effectiveness of existing risk control systems (Epstein, Elkington & Herman, 2018; Cooper, 2019). Consequently, customers often encounter delayed deliveries, damaged goods, unreliable services, and poor communication, all of which negatively affect customer satisfaction and organisational competitiveness (Alikhani et al., 2025).

Existing studies on logistics and risk management have largely concentrated on operational efficiency, supply chain resilience, and organisational performance in developed economies, with limited empirical attention given to how specific risk mitigation measures influence customer satisfaction within the Nigerian logistics environment (Morgan & Liker, 2020; Trabulsi, 2018). In addition, many previous studies examined risk management from a broad organisational perspective without directly linking operational risk mitigation practices to customer-related outcomes in logistics firms (Cooper, 2019). This creates an empirical and contextual gap, particularly in emerging economies such as Nigeria, where infrastructural deficiencies, regulatory uncertainties, and security challenges significantly shape operational realities (Etim, 2019). Therefore, there is a need for empirical investigation into the extent to which risk mitigation measures contribute to enhancing customer satisfaction among logistics firms operating in Nigeria.

Addressing this gap is important because customer satisfaction remains a critical determinant of customer retention, business sustainability, and competitive advantage in the logistics industry (Chinedu et al., 2020). In a highly competitive market environment, firms that effectively manage operational risks are more likely to deliver reliable, timely, and secure services that strengthen customer trust and loyalty (Trabulsi, 2018; Yang et al., 2023). Improved customer satisfaction can also enhance organisational reputation, increase market share, and support long-term profitability. Furthermore, understanding the relationship between risk mitigation measures and customer satisfaction provides practical insights for logistics managers, policymakers, and industry stakeholders seeking to improve service delivery standards and operational resilience (Iyer, 2019).

This study contributes to the existing body of knowledge by empirically examining the relationship between risk mitigation measures and customer satisfaction in selected logistics firms in Nigeria, with a specific focus on DHL and Red Star Express. The study provides empirical evidence on how proactive risk management practices influence customer perceptions and service outcomes within a developing economy context. It also offers practical recommendations that may assist logistics firms in strengthening operational strategies, minimising disruptions, and enhancing customer experiences. To achieve these objectives, the study addresses the following research question: What is the relationship between risk mitigation measures and customer satisfaction among selected logistics firms in Nigeria?

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2. Literature Review

Risk Mitigation Measures

According to Jaffee et al. (2010), risks can be managed at various levels, ranging from individual firm efforts to collaborative strategies that involve multiple actors across a supply chain. Firms can engage with external entities such as banks, governments, and insurance companies to enhance their risk mitigation capabilities. This tiered approach allows for a comprehensive method of dealing with potential disruptions that may arise from various internal or external threats. Vlajic et al. (2012) discuss the redesign of supply chain principles aimed at preventing and reducing the impacts of disturbances, highlighting that supply chain resilience is not merely a reactive measure but an inherent part of the design process. Fiksel et al. (2015) argue that a balanced approach is critical in risk management, as over-investment in mitigation strategies could harm profitability. A necessary focus emerges on finding the "zone of balanced resilience," where mitigation efforts align with the actual risks organisations face. Literature suggests that firms should aim for a proactive, balanced, and collaborative approach to risk mitigation, ensuring that resources are allocated effectively without undermining financial performance.

Li and Tang (2021) highlight that reliance on a single supplier can expose firms to severe risks, particularly in cases of natural disasters, political instability, or supplier bankruptcy. Expanding the pool of suppliers protects against these risks and helps avoid operational disruptions. Creating a more flexible supply chain enhances a company's ability to pivot if one supplier is unable to meet demand due to unforeseen circumstances. Operating in industries with global supply chains magnifies vulnerability to disruptions, making supplier diversification an essential aspect of risk management. Incorporating multiple suppliers across different geographic regions reduces location-specific risks, ensuring a stable flow of goods and services even during crises.

Internal risk management capabilities hold great importance in the overall risk mitigation strategy. Shekarian and Mellat Paras (2021) emphasise the need for firms to develop internal mechanisms to identify, assess, and address risks in real-time. Implementing robust risk monitoring systems allows companies to detect potential vulnerabilities at an early stage. Continuous monitoring of operations and supply chains empowers organisations to preemptively address risks before they escalate into crises. Establishing detailed response plans, training employees to handle disruptions, and conducting regular risk assessments keep management informed of potential threats. A well-established internal risk management framework enhances a firm's ability to react swiftly and decisively to unexpected disruptions, minimising potential losses and ensuring operational continuity.

Engagement with external stakeholders, such as governments and financial institutions, significantly strengthens risk mitigation efforts. Public-private partnerships are essential for managing large-scale risks that individual firms may not be able to address effectively on their own. Governments provide financial support through subsidies or disaster relief, while regulatory bodies set guidelines to help firms manage risks more efficiently. Additionally, the involvement of banks and insurance companies

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is crucial, as they offer financial products that mitigate losses. Collaboration with these external entities enhances a firm's capacity to withstand and recover from disruptions, ensuring a more resilient supply chain. Building strong relationships with stakeholders creates a support network that aids in risk management and fosters a culture of shared responsibility and preparedness in times of crisis (Hafiz, Oei, Ring, & Shnitser, 2020).

Customer Satisfaction

Customer satisfaction is a critical component of business success, encompassing the degree to which products or services meet or exceed customer expectations. It reflects the overall experience a customer has with a company, including the quality of the product, the level of service provided, and the effectiveness of communication and problem resolution. According to Sukanta and Muis (2022), customer satisfaction is not only essential for retaining existing customers but also for attracting new ones, as satisfied customers are more likely to become repeat buyers and recommend the company to others.

Moreover, customer satisfaction plays a crucial role in building brand loyalty and fostering long-term relationships with customers. Satisfied customers are less likely to switch to competitors and are more willing to forgive occasional shortcomings or mistakes. This is supported by a study by Commey and Adom (2022), which found that increasing customer retention rates by as little as 5% can lead to a significant increase in profits. Therefore, businesses strive to continually improve customer satisfaction levels through various means, such as quality assurance programs, customer feedback mechanisms, and personalised service offerings.

In today's highly competitive marketplace, where customers have numerous options and alternatives, maintaining high levels of customer satisfaction is imperative for sustainable business growth. As stated by Kurdi et al. (2023), satisfied customers not only contribute to revenue generation through repeat purchases but also serve as brand ambassadors who positively influence others' purchasing decisions. Consequently, businesses that prioritise customer satisfaction are more likely to thrive and outperform their competitors in the long run.

Theoretical Review

Enterprises Risk Management Theory

Enterprise Risk Management (ERM) Theory provides a comprehensive and integrated framework through which organisations systematically identify, assess, manage, and monitor risks across all levels of operation. Over time, ERM has evolved into a strategic management approach rather than a narrow control mechanism. One of the foremost contributors to its development is James Lam, who emphasised the integration of risk management into organisational strategy and decision-making processes (Lam, 2014). At its foundation, ERM recognises that risk is inherent in all business activities and may generate both threats and opportunities. Rather than addressing risks in fragmented silos, ERM promotes a holistic approach that integrates financial, operational, strategic, compliance, and

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reputational risks into a unified management framework (Prewett & Terry, 2018). This integrated perspective enables organisations to anticipate uncertainties, minimise vulnerabilities, and strengthen operational resilience. The effectiveness of ERM depends significantly on the existence of a strong organisational risk culture. A sound risk culture ensures that employees at all levels understand their responsibilities in identifying, reporting, and managing risks. It also promotes accountability, transparency, and effective communication regarding risk-related issues within the organisation (Altuntas et al., 2021).

Structured frameworks such as the Committee of Sponsoring Organisations of the Treadway Commission Enterprise Risk Management Framework and the International Organisation for Standardisation ISO 31000 standard provide systematic procedures for risk identification, assessment, response, and monitoring (Vargas & Campos, 2022). These frameworks assist organisations in comprehensively evaluating their risk landscape, prioritising risks according to their likelihood and potential impact, and implementing suitable mitigation strategies. The structured nature of these frameworks enhances compliance, strengthens corporate governance, improves operational efficiency, and supports organisational performance.

The relevance of ERM Theory to this study lies in its emphasis on proactive risk mitigation and organisational resilience. In the logistics industry, firms operate in highly uncertain environments characterised by transportation delays, infrastructural deficiencies, cargo theft, regulatory changes, and operational disruptions. ERM provides a theoretical basis for understanding how risk mitigation measures such as contingency planning, route optimisation, inventory monitoring systems, and operational controls can reduce uncertainties and improve service reliability. When logistics firms effectively manage operational risks, they are more likely to provide timely, safe, and dependable services, thereby enhancing customer satisfaction and strengthening customer trust. Consequently, ERM Theory supports the assumption that effective risk mitigation measures positively influence customer satisfaction in logistics firms.

Empirical Review

Mustapha et al. (2023) investigate the impact of risk management practices on organisational performance, with a focus on the mediating role of business model innovation (BMI) in Nigeria. Using a quantitative approach, the study surveyed 83 employees and employed partial least squares structural equation modelling (PLS-SEM) to analyse the data. The findings highlight that risk management practices have a significant positive effect on financial performance and are also linked to non-financial performance. However, BMI showed a negative relationship with non-financial performance but strengthened financial relationships. The research underscores the importance of effective risk management in enhancing both financial performance and the role of BMI as a partial mediator, offering insights for both practitioners and scholars on optimising organisational performance through these mechanisms in the Nigerian context.

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Ricardianto et al. (2023) investigated the impact of enterprise risk management (ERM) and business strategy on the competitive advantage and performance of shipping companies listed on the Indonesia Stock Exchange. The study highlighted that fluctuations and decreases in the competitive advantage and performance of these companies are primarily due to poorly managed risks. The research, using Path Analysis through Partial Least Squares SmartPLS3, analysed data from 65 samples across 13 companies over five years. The findings revealed that effective ERM and competitive advantage significantly improve company performance, as integrating risk management into business strategy strengthens competitiveness. Moreover, the study emphasised that a well-implemented business strategy is crucial for enhancing performance and revenue growth in the shipping sector. The research underscores the importance of ERM as an integral component of business strategy to boost both competitive advantage and firm performance.

Egieya et al. (2024) conducted a comparative analysis of workforce efficiency, customer engagement, and risk management strategies in Nigeria and the USA, highlighting the cultural, economic, and regulatory factors shaping these approaches. The study explored workforce efficiency by examining how work ethic, educational systems, and labour market dynamics influence employee productivity in both countries, drawing insights from their training programs and technology adoption. For customer engagement, the research focused on how cultural preferences and communication styles affect customer interactions, emphasising the effectiveness of personalised approaches, digital platforms, and feedback mechanisms in both markets. In terms of risk management, the study analysed regulatory frameworks, economic conditions, and risk tolerance levels, comparing the strategies employed for compliance, financial risk mitigation, and crisis response in Nigeria and the USA. The findings offer valuable lessons for businesses looking to enhance efficiency, engagement, and risk management by understanding the intersection of cultural and business imperatives across international borders.

Said, Alam, and Johari (2020) assess the state of risk management practices in the Malaysian public sector, highlighting the need for improved efficacy in addressing issues such as fraud, governance challenges, and corruption. The study employs a questionnaire survey targeting 194 department heads across federal ministries in Malaysia. Descriptive statistics and factor analysis reveal that while 94.7% of respondents acknowledge the implementation of risk management practices, the prioritisation of these practices varies across different service schemes. The findings aim to guide policymakers in enhancing risk management frameworks, contributing to better governance and efficiency in the public sector.

Mustapha et al. (2023) examined the impact of risk management practices on organisational performance in Nigeria, with a focus on the mediating role of business model innovation (BMI). Using quantitative research methods, the study collected data from 83 employees via an online Likert scale questionnaire and analysed it using partial least squares structural equation modelling (PLS-SEM). The findings revealed that risk management practices significantly improved both financial and non-financial performance. However, business model innovation had a negative relationship with non-

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financial performance, though it positively influenced financial performance by strengthening financial relationships. The study demonstrated a partial mediating effect of BMI on the relationship between risk management practices and non-financial behaviours. These results have practical implications for government agencies and financial institutions in understanding the interplay between BMI, risk management, and performance, while also offering valuable insights for academics studying organisational efficiency in the Nigerian context. Therefore,

The following hypothesis was formulated based on the theoretical and empirical review:
H0: Risk mitigation measures have no significant relationship with customer satisfaction among selected logistics firms in Nigeria.
H1: Risk mitigation measures have a significant relationship with customer satisfaction among selected logistics firms in Nigeria.

3. Research Methods

This study adopts a survey research design to examine the relationship between risk mitigation measures and customer satisfaction of selected logistics firms in Nigeria, specifically DHL and Red Star Express. The survey design is appropriate because it enables the collection of quantitative data from a defined population without manipulating variables, thereby providing an accurate representation of existing risk mitigation practices and their influence on customer satisfaction. The population of the study comprises 2,461 employees drawn from both firms, particularly staff directly involved in operational and risk-related functions. Using Taro Yamane's (1967) formula at a 95% confidence level and 5% margin of error,

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = Sample size**,** N = Population size (2,461)**,** e = Margin of error (0.05 for a 95% confidence level)

$$n = \frac{2{,}461}{1+2{,}461(0.05)^2}, \; n = \frac{2{,}461}{1+2{,}461\ X\ 0.0025} = n \approx 344$$

A sample size of 344 respondents was determined. A simple random sampling technique was employed. Data for the study were collected through a structured questionnaire designed to measure key dimensions of risk mitigation measures (such as risk identification, risk assessment, contingency planning, and risk communication) and customer satisfaction indicators (such as service reliability, timeliness, responsiveness, and overall service experience). The instrument was divided into two sections: Section A captured demographic information, while Section B contained statements rated on a five-point Likert scale ranging from Strongly Agree to Strongly Disagree. The questionnaire was reviewed by experts in risk management and logistics operations. A pilot study involving 30 respondents was conducted to test clarity and consistency, and reliability analysis using Cronbach's Alpha yielded a coefficient of 0.801, indicating high internal consistency.

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Upon completion of data collection, responses were coded and analysed using the Statistical Package for Social Sciences (SPSS) version 26. Inferential statistical tools, including Pearson correlation analysis, were employed to test the relationship between risk mitigation measures (independent variable) and customer satisfaction (dependent variable).

4. Findings and Discussion

A total of 344 questionnaires were retrieved through the Google form. However, 31 of the received responses were not properly filled out and deemed inappropriate for analysis, leading to the exclusion of these entries. As a result, the study proceeded with the utilisation of 313 questionnaires, which accounted for 91.0% of the responses received.

Hypothesis

H_{01} There is no significant relationship between risk mitigation measures and customer satisfaction in logistics firms in Nigeria.

Table 1: Result of the Correlation Analysis for Hypothesis I
Sample Size (n)-: 313 Respondents

Pearson correlation coefficient (*r*)	0.507**
p-value	0.000
Level of significance	0.01 (1 per cent)

Source: Author's computation (2024) using SPSS Version 26.

The correlation result in Table 1 shows a Pearson correlation coefficient (r) of 0.507 with a p-value of 0.000 at a 0.01 level of significance, based on responses from 313 participants. The coefficient of 0.507 indicates a moderate positive relationship between risk mitigation measures and customer satisfaction in logistics firms in Nigeria. This implies that as risk mitigation measures improve, customer satisfaction tends to increase correspondingly. Since the p-value (0.000) is less than the 0.01 level of significance, the relationship is statistically significant. Therefore, the null hypothesis (H01), which states that there is no significant relationship between risk mitigation measures and customer satisfaction, is rejected. The finding suggests that effective risk mitigation practices play a meaningful role in enhancing customer satisfaction within logistics firms in Nigeria.

The findings of this study reveal a statistically significant positive relationship between risk mitigation measures and customer satisfaction in logistics firms in Nigeria. The correlation coefficient of 0.507 indicates that improvements in risk management practices, such as contingency planning, supply chain monitoring, and operational risk controls, are associated with higher levels of customer satisfaction. This suggests that logistics firms that proactively identify, assess, and manage potential risks are better able to deliver reliable and timely services, which enhances customer trust and loyalty. The result aligns with the principles of Enterprise Risk Management (ERM), which emphasise integrating risk management into strategic operations to improve organisational outcomes (Lam, 2014; Prewett &

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Terry, 2018). In practical terms, the finding highlights that firms that invest in robust risk mitigation strategies are likely to reduce service disruptions, minimise operational inefficiencies, and provide consistent service quality, ultimately strengthening their competitive advantage in the Nigerian logistics sector.

These results are corroborated by prior studies demonstrating the link between risk management practices and customer satisfaction in service-oriented industries. For instance, Trabulsi (2018) observed that effective risk mitigation in supply chains reduces uncertainties and enhances service reliability, leading to improved client satisfaction. Similarly, Vargas and Campos (2022) emphasised that organisations implementing structured risk management frameworks, such as ISO 31000 or COSO ERM, experience greater operational stability and stronger stakeholder trust. Altuntas et al. (2021) further highlighted the importance of a strong risk culture, noting that firms fostering employee engagement in risk identification and mitigation achieve higher service quality and customer satisfaction. Collectively, these studies support the conclusion that risk mitigation measures are a critical determinant of customer satisfaction, confirming that logistics firms in Nigeria can enhance client loyalty and service excellence through strategic risk management practices.

5. Conclusion and Recommendations

This study demonstrates that risk mitigation measures have a significant and positive impact on customer satisfaction in logistics firms in Nigeria. By implementing structured risk management practices, including contingency planning, supply chain monitoring, and proactive operational controls, firms are able to reduce service disruptions, enhance reliability, and deliver timely services that meet or exceed customer expectations. The findings underscore the critical role of effective risk management in improving service quality, fostering customer trust, and maintaining competitive advantage within the Nigerian logistics sector. Therefore, logistics firms that prioritise and strengthen their risk mitigation strategies are more likely to achieve higher levels of customer satisfaction and long-term organisational success.

Based on the findings of this study, it is recommended that logistics firms in Nigeria prioritise the development and implementation of comprehensive risk mitigation strategies to enhance customer satisfaction. Firms should invest in advanced risk assessment tools, robust contingency planning, and supply chain monitoring systems to proactively identify and manage potential disruptions. Additionally, cultivating a strong risk culture by training employees on their roles in risk management and encouraging open communication about operational risks can further improve service reliability. By integrating these practices into daily operations, logistics companies can minimise delays, reduce service failures, and consistently meet customer expectations, thereby strengthening client trust, loyalty, and overall competitiveness in the industry.

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