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Investigating the effects of supplier presence, top management beliefs, and transaction attributes on logistic outsourcing performance among Jamaican firms

Logistics Outsourcing



Shemar Reid

Zhejiang Gongshang

University, China

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Investigating the effects of supplier presence, top management beliefs, and transaction attributes on logistic outsourcing performance among Jamaican firms

Author: Shemar Reid
Major : Logistics Engineering & Management
Supervisor: Anding Zhu



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School of Management & E-Business
Zhejiang Gongshang University
Hangzhou, 310018, P. R. China

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Chinese abstract

摘要

在错综复杂的物流外包领域中，物流外包绩效一直是一个重要的话题。本研究探讨了供应商存在和最高管理层信念对牙买加公司交易属性（第三方物流资产特定性、技术变化和 demand 波动）和物流绩效的影响。

研究人员采用定量方法来实现研究目标。数据是通过谷歌表单开发的调查问卷收集的，并通过 WhatsApp 和 Telegram 分发。该研究的受访者是物流经理/专家和物流副经理。研究人员采用了有目的的抽样方法来接触研究人群。在向人群发送的 302 份问卷中，265 份已完成并被用于研究，回复率为 88%。样本量为 265，使用 SPSS 和 AMOS 对数据进行处理和分析。采用描述性分析、探索性因子分析（EFA）、确证因子分析（CFA）、结构方程建模（SEM）和层次回归等方法检验模型的信度和有效性，并对研究假设进行评价。

研究结果揭示了对物流外包绩效形成动态的重要见解。首先，第三方物流资产的特殊性和技术变化对物流外包绩效有正向显著影响，而需求波动则有负向显著影响。此外，物流供应商的存在是影响第三方物流资产专用性、技术变化、需求波动和物流外包绩效之间关系的关键调节因素。此外，该研究还强调了高层管理者的信念在塑造这些关系中的作用。高层管理者的信念调节了第三方物流资产特异性与物流外包绩效之间的关联，以及技术差异与物流外包业绩之间的关系。然而，研究发现，高层管理者的信念并不能缓和需求波动与物流外包绩效之间的负相关关系。

这些发现有助于更好地理解影响物流外包绩效的因素，突出了在战略决策过程中考虑交易属性、供应商存在和最高管理层信念的重要性。从这项研究中收集到的见解为寻求在牙买加公司动态商业环境中优化外包战略和提高组织绩效的物流经理和从业者提供了宝贵的启示。

关键词： 资产特性、技术变化、需求波动、供应商存在、最高管理层信念、物流外包绩效

ABSTRACT

Embarking on a journey through the intricate realm of logistic outsourcing, the topic of logistic outsourcing performance has been an essential subject for discussion. This study explores the impact of supplier presence and top management beliefs on transaction attributes (3PL asset specificity, technology variation, and demand fluctuation) and logistic performance within Jamaican firms.

The researcher employed the quantitative approach to achieve the study's objectives. Data was gathered through a survey questionnaire developed with Google Forms and distributed through WhatsApp and Telegram. The study's respondents are Logistic Managers/Specialists and Deputy Logistic Managers. The researcher employed the purposive sampling approach to reach the study population. Out of the 302 questionnaires sent to the population, 265 were completed and adopted for the study, reflecting a response rate of 88%. With a sample size of 265, the data underwent processing and analysis using the Statistical Package for Social Science (SPSS version 26) and Analysis of Moments (AMOS version 23). Descriptive Analysis, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Structural Equation Modeling (SEM), and hierarchical regression were employed to test the reliability and validity of the model and evaluate the research hypotheses.

The findings reveal significant insights into the dynamics shaping logistic outsourcing performance. Firstly, 3PL asset specificity and technology variation positively and significantly impact logistic outsourcing performance, while demand fluctuation has a negative and significant effect. Additionally, logistic supplier presence is a crucial moderating factor influencing the relationships between 3PL asset specificity, technology variations, demand fluctuations, and logistic outsourcing performance. Furthermore, the study underscores the role of top management beliefs in shaping these relationships. Top management beliefs moderate the association between 3PL asset specificity and logistic outsourcing performance and the nexus between technology variations and logistic outsourcing performance. However, it is observed that top management belief does not moderate the negative relationship between demand fluctuations and logistic outsourcing performance.

These findings contribute to a better understanding of the factors influencing logistic outsourcing performance, highlighting the importance of considering transaction attributes, supplier presence, and top management beliefs in strategic decision-making processes. Insights gleaned from this study provide valuable implications for logistics managers and practitioners seeking to optimize outsourcing strategies and enhance organizational performance in the dynamic business environment of Jamaica firms.

Keywords: asset specificity, technology variations, demand fluctuations, supplier presence, top management beliefs, logistics outsourcing performance.

LIST OF ABBREVIATIONS AND ACRONYMS

3PL – Third-Party Logistics
SPSS – Statistical Package for Social Sciences
AMOS – Analysis of Moment Structure
TCT – Transaction Cost Theory
ERBV – Extended Resource-Based View
RBV – Resource-Based View
RFID – Radion Frequency Identification
IoT – Internet of Things
TQM – Total Quality Management
AS – Asset Specificity
TV – Technology Variations
DF – Demand Fluctuations
SP – Supplier Presence
TMB – Top Management Belief
LOP – Logistic Outsourcing Performance
EFA – Exploratory Factor Analysis
CFA – Confirmatory Factor Analysis
SEM – Structural Equation Modeling
CMB – Common Method Bias
CR – Composite Reliability
AVE – Average Variance Extracted
KMO-MSA – Kaiser-Meyer-Olkin Measure of Sampling Adequacy
CFI – Comparative Fit Index
TLI – Tucker-Lewis Index
IFI – Incremental Fit Index
GFI – Goodness of Fit Index
RMSEA - Root Mean Square Error of Approximation

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1. Introduction

This section of the study provides a holistic view of the rationale for the study and the questions that the research posits to provide answers to.

1.1 Background of the study

Logistic outsourcing has emerged as a strategic imperative for organizations seeking to enhance operational efficiency and focus on core competencies in today's competitive business environment (Jafari et al., 2022; Magento et al., 2020). More so, given globalization, increasing numbers of companies are turning to third-party logistics (3PL) providers to outsource their logistics activities, aiming to enhance their logistics performance (Garcia-Buendia et al., 2023). This strategic move allows user firms to concentrate on their core competencies, improve customer service, reduce logistics costs, and bolster their competitiveness (Huo et al., 2018; Yang et al., 2016). However, despite these advantages, outsourcing logistics comes with inherent risks, including potential information leaks, loss of control over logistics activities, and the need for additional efforts and costs in managing outsourcing relationships (Huo et al., 2018; Nzitunga, 2019; Yuan et al., 2020). It is important to note that logistics outsourcing only sometimes leads to success, as evidenced by its relatively high failure rate (Hwang & Kim, 2019). Such risks have prompted some large firms to reconsider outsourcing and internalize their logistics operations by establishing an in-house logistics system (Akbari, 2018). Therefore, the key challenge lies in ensuring the performance of logistics outsourcing, which is a critical concern for both 3PL users and providers.

Moreover, prior research has indicated that establishing a high-quality logistics outsourcing relationship can mitigate dependence and risks associated with outsourcing, leading to improvements in operational and financial performance (Gong et al., 2018; Marchet et al., 2018a; Zorbakhshnia et al., 2020). However, operational and financial performance metrics are not direct outcomes of logistics outsourcing. These measures are often removed from the direct impact of logistics outsourcing and may not accurately reflect its outcomes (Zorbakhshnia et al., 2020). Instead, as proposed by Wan et al. (2019), the performance of logistics outsourcing should be evaluated, encompassing the overall benefits achieved through outsourcing logistics. This performance can be evaluated from a broader perspective, considering strategic, technological, and economic advantages. While previous studies have primarily focused on isolated aspects (Garcia-Buendia et al., 2023; Wang, 2018), there is a need for further research to examine the performance

of logistics outsourcing comprehensively. Therefore, this study investigates how transaction attributes in logistics outsourcing can be leveraged to achieve overall outsourcing performance.

In addition, [Jafari et al. \(2022\)](#) indicate that logistic outsourcing has become a strategic imperative for many organizations seeking to enhance operational efficiency and focus on core competencies. The performance of these outsourcing arrangements is influenced by various transaction attributes such as asset specificity, technological variations ([Yuan et al., 2020](#)), and demand fluctuations ([Jafari et al., 2022](#)). Asset specificity refers to the extent to which assets are dedicated to a particular transaction ([Huo et al., 2018](#)), while technological variations encompass the complexity and compatibility of the technologies involved ([Garcia-Buendia et al., 2023](#)). Demand fluctuations represent the variability in the demand for logistical services and resources over time ([Wang et al., 2023](#)). These attributes can impact outsourcing performance by affecting transaction costs, coordination efforts, and the ability to meet customer requirements ([Elock Son et al., 2019](#)). Asset specificity plays a crucial role in determining the success of logistics outsourcing. High levels of asset specificity can increase dependency on the outsourcing partner, making it challenging to switch providers or bring activities back in-house ([Świtała et al., 2018](#)). Technological variations also present opportunities and challenges simultaneously, as differences in technological capabilities between the focal firm and the outsourcing partner and technological influx can lead to effective, efficient, or challenging coordination ([Qureshi et al., 2017](#)).

Additionally, demand fluctuations can impact the flexibility and responsiveness of the outsourcing arrangement, affecting the ability to adapt to changing market conditions ([Yang et al., 2016](#)). Despite the importance of these transaction attributes, more literature needs to be conducted regarding their specific impact on logistics outsourcing performance. Existing studies (e.g., [Chen et al., 2019](#); [Zhu et al., 2017](#)) have focused on the general benefits of outsourcing without delving into the specific effects of these transaction attributes. Therefore, this study seeks to fill this gap by exploring how asset specificity, technological variations, and demand fluctuations influence logistics outsourcing performance.

Moreover, suppliers (3PLs providers) add another layer of complexity to the outsourcing relationship ([Rodrigues et al., 2018](#)). The supplier's presence affects logistics outsourcing performance because it determines the possibility and quality of external logistics resources ([Huo et al., 2018](#)). 3PLs are external service providers that offer logistics services, such as transportation, warehousing, and distribution, to client companies ([Marchet et al., 2018a](#)). The presence of 3PLs

can affect transaction attributes and logistic outsourcing performance. For example, a 3PL with a strong presence in the market may have the resources and expertise to mitigate the impact of asset specificity by offering flexible solutions or leveraging economies of scale (Huo et al., 2018; Marchet et al., 2018).

Similarly, a 3PL with advanced technological capabilities may be better equipped to manage technological variations and adapt to changing demand patterns, thereby enhancing logistic outsourcing performance (Shraah et al., 2022). Understanding the role of supplier presence, represented by 3PLs, is crucial for businesses seeking to optimize their logistic outsourcing strategies (Shraah et al., 2022). By examining how supplier presence influences the relationship between transaction attributes and logistic outsourcing performance, organizations can identify ways to enhance the effectiveness and efficiency of their outsourcing arrangements.

Furthermore, top management beliefs are crucial in shaping organizational strategies and decision-making processes (Arif & Jawab, 2018). The beliefs and attitudes of top management towards outsourcing can influence the extent to which transaction attributes impact logistic outsourcing performance (Qureshi et al., 2017). A top management team that believes in the strategic importance of outsourcing may be more willing to invest in overcoming the challenges posed by asset specificity, technological variations, and demand fluctuations (Elock Son et al., 2019; Qureshi et al., 2017). They may prioritize building solid relationships with outsourcing partners and investing in technologies that enhance the flexibility and responsiveness of outsourced logistics services (Simon et al., 2021). On the other hand, a top management team skeptical of outsourcing may need to be more proactive in addressing these challenges, leading to suboptimal outsourcing performance (Zhu et al., 2017). Comprehending the role of top management beliefs is essential for businesses seeking to optimize their logistic outsourcing strategies. By examining how top management beliefs influence the relationship between transaction attributes and logistic outsourcing performance, organizations can identify ways to align their strategic priorities and enhance the effectiveness of their outsourcing arrangements.

In summary, despite the recognized importance of transaction attributes, supplier presence, and top management beliefs, limited empirical research comprehensively examines their interplay in the context of logistic outsourcing. This study aims to fill this gap by investigating how supplier presence and top management beliefs moderate the relationship between transaction attributes and outsourcing performance among Jamaican firms. By understanding these dynamics, organizations

can develop more effective outsourcing strategies, enhance their competitiveness, and achieve better performance outcomes in the dynamic and complex environment of logistic outsourcing.

1.2 Research problem

The rapid development of logistics outsourcing in Jamaica, coupled with the high level of technological uncertainty, 3PL asset specificity, and demand fluctuations in the country's logistics industry, presents a unique opportunity to assess logistics outsourcing performance. While Jamaica has seen significant advancements in logistics technologies, such as automated high-rise warehouses and automatic sorting conveyor systems, some firms still operate with obsolete logistics equipment and technologies (Marchet et al., 2018a; Nzitunga, 2019). This discrepancy necessitates substantial investments in updating logistics-related equipment and technologies (Simon et al., 2021). Additionally, the 3PL industry in Jamaica experiences significant asset specificity, where logistics providers tailor their services to meet clients' specific needs and demand fluctuations, which require agile responses to changing market conditions. These factors raise the eye to browse the essence of transaction attributes in the logistics industry. Supplier presence and top management beliefs have been explored to profoundly influence logistics outsourcing performance in some jurisdictions (Kithuka, 2023; Świtała et al., 2019). Understanding these dynamics is crucial for firms seeking to optimize their outsourcing strategies and improve their overall performance in the Jamaican market.

The research problem addressed in this study is the need to understand the complex dynamics that affect the performance of logistics outsourcing among firms in Jamaica. Despite the growing trend of outsourcing logistics services, there needs to be more research on how transaction attributes, such as asset specificity, technological variations, and demand fluctuations, interact with supplier presence and top management beliefs to influence outsourcing performance in the Jamaican context. This gap in knowledge hinders firms' ability to make informed decisions regarding outsourcing and limits the effectiveness of outsourcing strategies in enhancing operational efficiency and competitiveness.

Furthermore, the existing literature predominantly focuses on developed economies, neglecting firms' unique challenges and opportunities in developing countries like Jamaica. As such, it is necessary to explore how the Jamaican context, characterized by its specific economic, social, and regulatory environment, shapes the relationship between transaction attributes, supplier presence, top management beliefs, and outsourcing performance. Understanding these dynamics

is crucial for firms operating in Jamaica to optimize their outsourcing strategies and improve their overall performance in the market.

1.3 Research questions and objectives

Conversely, the study posits exploring the effect of transaction attributes on logistic outsourcing performance while moderating supplier presence and top management beliefs among firms in Jamaica. To unravel this phenomenon, the researcher puts forward the following questions:

- (1) Do transaction attributes (precisely asset specificity, technology variations, and demand fluctuations) influence logistic outsourcing performance?
- (2) To what extent does supplier presence moderate the association between transaction attributes (precisely asset specificity, technology variations, and demand fluctuations) and logistic outsourcing performance?
- (3) To what extent do top management beliefs moderate the nexus between transaction attributes (precisely asset specificity, technology variations, and demand fluctuations) and logistic outsourcing performance?

On the back of the questions asked, the study embarks to achieve the following objectives.

- (1) To ascertain the effect of transaction attributes (precisely asset specificity, technology variations, and demand fluctuations) on logistic outsourcing performance.
- (2) To determine the moderating effect of supplier presence on the relationship between transaction attributes (precisely asset specificity, technology variations, and demand fluctuations) and logistic outsourcing performance.
- (3) To establish the moderating effect of supplier presence on the relationship between transaction attributes (precisely asset specificity, technology variations, and demand fluctuations) and logistic outsourcing performance.

1.4 Research significance

This study is of substantial significance to various stakeholders involved in the logistics outsourcing ecosystem in Jamaica. Comprehending the impact of transaction attributes (asset specificity, technological variations, and demand fluctuations) and supplier presence for firms outsourcing logistics services can significantly enhance decision-making processes. By understanding these factors, firms can better evaluate the risks and advantages associated with outsourcing, leading to improved performance and enhanced competitiveness in the marketplace.

For suppliers of logistics services, this study offers critical insights into how their presence and the beliefs of top management within client firms can influence the outcomes of outsourcing arrangements. With this understanding, suppliers can tailor their service offerings and strategies to meet their clients' specific needs and expectations, potentially fostering more successful and sustainable partnerships.

Top management within client firms stands to benefit from this study by gaining deeper insights into how their beliefs and strategic decisions concerning outsourcing impact overall performance. This knowledge can enable them to make more informed and strategic decisions regarding outsourcing, including selecting the most suitable suppliers and negotiating contracts that align with their organizational goals and objectives. Understanding this relationship can help top management align their strategic priorities and decision-making processes to improve the effectiveness of their outsourcing initiatives.

Moreover, this study has implications for Jamaica's government bodies and industry regulators. This research can inform policy-making and regulatory decisions by shedding light on the factors that influence the effectiveness of logistics outsourcing within the country. Ultimately, this can create a more conducive environment for outsourcing activities, which can contribute to economic growth and development. Organizations representing the logistics sector and regulatory bodies overseeing outsourcing practices can use the findings of this study to develop guidelines and best practices for firms engaged in logistic outsourcing. This can promote fair and efficient outsourcing practices, benefiting the industry.

Conversely, this study has the potential to benefit a wide array of stakeholders by providing valuable insights into the factors that influence logistics outsourcing performance in Jamaica. The findings could lead to more efficient and effective outsourcing practices, benefiting firms, suppliers, top management, and the broader economy.

1.5 Outline of methodology

In this research study, the selected research philosophy forms the foundational framework that guides the researcher's fundamental beliefs about data collection, analysis, and application to gain insights into a specific phenomenon. Following the classification proposed by [Woiceshyn & Daellenbach \(2018\)](#), this study aligns with the positivism philosophy, which emphasizes a statistical approach to interpreting collected data. To adhere to this philosophy, the research design will be quantitative ([Wahyuni, 2012](#)), and a deductive strategy will be utilized to analyze the data

and validate the findings (Baron & Kenny, 1986). The research population consisted of logistic managers and deputies who were entirely responsible for the logistics activities of the informant firms in Jamaica. These individuals have firsthand experience and knowledge of how supplier presence and top management beliefs influence logistic outsourcing performance within their organizations. A stratified random sampling method was employed for a representative sample, following the guidelines Levy & Lemeshow (2013) outlined. A structured questionnaire served as the research instrument for data collection. Subsequently, the collected data was subsequently coded, processed, and analyzed using statistical tools such as SPSS and AMOS, as Preacher & Hayes (2004) recommended.

1.6 Dissertation structure

As shown in Figure 1.1, the dissertation is structured into six chapters, each serving a distinct purpose in the research process. Chapter One serves as the introduction, setting the stage by providing background information, stating the problem, presenting research questions and objectives, highlighting the significance of the study, and offering an overview of the methodology employed. Chapter Two focuses on the literature review, offering a conceptual review of the variables in the model, an empirical review of the relationships under consideration, and the theoretical foundations that support these relationships. Chapter Three includes the conceptual framework and the development of hypotheses based on the reviewed literature. Chapter four covers the methodology, which stipulates the research design, the study population, sampling approach, data collection, and analysis procedure. Chapter five encompasses the results presentation, analysis, and interpretations derived from the data collected in Chapter Four. Chapter Six concludes the dissertation, discussing the study's implications, limitations, future research suggestions, and personal reflections on the research process.

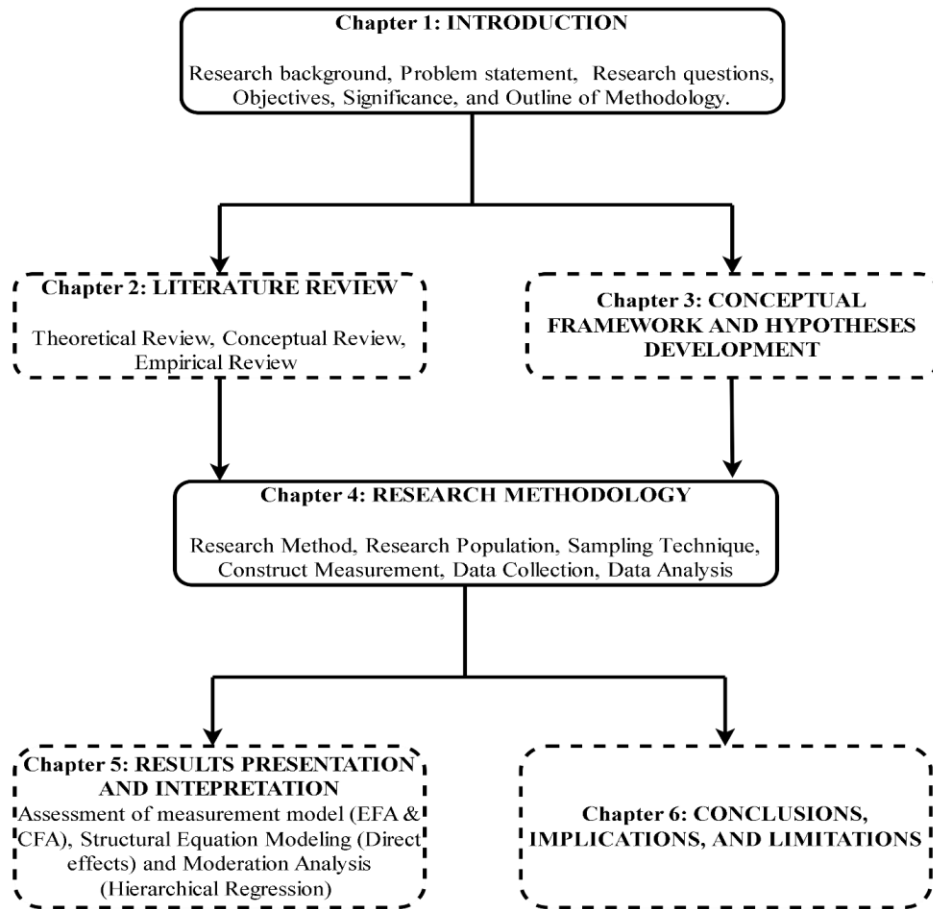


Figure 1.1 The Thesis Structure

2. Literature review

This aspect of the research covers a literature review of the study's constructs, the relationship between these variables, and theoretical justifications. It is, however, divided into three sections: the theoretical, conceptual, and empirical review.

2.1 Theoretical review

2.1.1 Transaction cost theory (TCT)

Transaction Cost Theory (TCT) is a prominent framework in economics and organizational theory that seeks to explain the nature and governance of transactions (Williamson, 1979). Developed by Williamson in the 1970s, TCT emphasizes the role of transaction costs in shaping the boundaries of firms and the choice between market and hierarchy for organizing economic activities (Rindfleisch, 2020; Williamson, 1979). According to TCT, transaction costs exchange goods, services, or assets. These costs include information search and processing, negotiation, monitoring, and enforcement of contracts, as well as the costs of opportunistic behavior, such as moral hazard and adverse selection (Rindfleisch, 2020; Williamson, 1979). Williamson argued that transaction costs are influenced by asset specificity, uncertainty, frequency of transactions, and the extent of information asymmetry between transacting parties (Williamson, 1979).

Asset specificity refers to the extent to which assets are specialized for a particular transaction or relationship, making them less valuable in alternative uses (Huo et al., 2018). According to TCT, higher levels of asset specificity increase transaction costs because specialized assets are less adaptable to alternative uses or partners, leading to a greater dependency on specific transactions or relationships (Cuypers et al., 2021; Huo et al., 2018). Environmental and behavioral uncertainty also play a crucial role in TCT. Environmental uncertainty refers to unpredictability in factors such as market conditions, technology, and regulations, while behavioral uncertainty relates to the unpredictability of human behavior and intentions (Rindfleisch, 2020). TCT suggests that higher levels of uncertainty increase transaction costs and may necessitate more hierarchical forms of governance (Schmidt & Wagner, 2019). The frequency of transactions is another crucial determinant of transaction costs, according to TCT. Higher frequency transactions allow for the amortization of transaction-specific investments over multiple transactions, reducing per-transaction costs (Cuypers et al., 2021; Williamson, 1979).

Conversely, lower-frequency transactions may require intensive governance mechanisms to ensure transaction success (Rindfleisch, 2020). Information asymmetry, where one party has more

or better information than the other, is also addressed by TCT. Williamson argued that information asymmetry can lead to opportunistic behavior, such as moral hazard and adverse selection, increasing transaction costs and necessitating governance mechanisms to mitigate these risks (Williamson, 1979).

TCT suggests that transaction attributes play a significant role in determining the choice and effectiveness of governance structures (Huo et al., 2018; Um & Kim, 2019). As a result, TCT has been widely applied to explain logistics outsourcing (e.g., Cuypers et al., 2021; Rindfleisch, 2020; Schmidt & Wagner, 2019; Um & Kim, 2019; Yang et al., 2016; Yuan et al., 2020). However, previous studies have primarily focused on outsourcing decision-making from the TCT perspective (e.g., Ameknassi et al., 2016; Ecer, 2017; Yuan et al., 2020; Zhu et al., 2017). For example, Cuypers et al. (2021) found that decreased transaction costs and risks lead to a higher degree of logistics outsourcing, based on the TCT perspective. Rindfleisch (2020) also used TCT to explore the determinants of logistics outsourcing decisions and identified asset specificity as a crucial determinant. Chu et al. (2017) examined the moderating effects of asset specificity and uncertainty on the effectiveness of relational governance (i.e., guanxi) in the logistics outsourcing context. These studies underscored the importance of transaction attributes in outsourcing decision-making. However, there is a limited understanding of whether transaction attributes subsequently affect logistics outsourcing performance and, if so, the boundary conditions that influence these effects.

TCT provides a comprehensive framework to justify the relationships under consideration. First, TCT suggests that logistics assets are highly specialized or dedicated to a specific outsourcing arrangement, which increases the dependency on the outsourcing partner. High asset specificity can lead to higher transaction costs due to the challenges associated with reconfiguring specialized assets for alternative purposes or partners. Supplier presence may affect this by offering access to specialized assets, potentially reducing the need for heavy investment in specific assets. This position is usually also backed by management decisions. This can mitigate the negative and amplify the positive impact of asset specificity on outsourcing performance, thereby reaping the positive results. More so, TCT argues that uncertainty, including technological uncertainty, raises transaction costs and the need for governance. Technological variations in logistics outsourcing can create certainty or uncertainty about technology compatibility depending on the situation or condition at hand. Supplier presence and top management efforts can mitigate this by providing technological expertise, which reduces uncertainty and enhances outsourcing

effectiveness. TCT also suggests demand fluctuations can increase transaction costs and require flexible governance mechanisms. In logistics outsourcing, demand fluctuations lead to transportation and warehousing needs variability. Supplier presence and top management can affect this by offering flexible solutions that adapt to changing demands, thus improving outsourcing performance.

2.1.2 Extended resource-based view (ERBV)

The Extended Resource-Based View (ERBV) is an extension of the firm's Resource-Based View (RBV), which posits that a firm's competitive advantage is derived from its unique and valuable resources and capabilities. While the RBV emphasizes internal resources and capabilities, the ERBV considers internal and external resources to determine competitive advantage (Barney, 1991; Barney, 2018). The ERBV extends the RBV by incorporating inter-firm networks and relationships as sources of competitive advantage. This view suggests that a firm's network of relationships, including those with suppliers, customers, competitors, and other stakeholders, can contribute significantly to its competitive position (Cheng & Lu, 2017; Srivastava et al., 2001).

The ERBV emphasizes integrating resources and forming strategic relationships across organizational boundaries to enhance competitiveness. Supporting this perspective, Yang et al. (2019) found that integrating with customers and suppliers can enhance the impact of internal integration on developing mass customization capability. Similarly, Ramon-Jeronimo et al. (2019) suggested that aligning internal and external IT governance can improve operational efficiency, market growth, and innovation performance. These studies suggest that top management plays a crucial role in logistics outsourcing. As decision-makers, top managers influence internal governance strategies, decisions, and external collaborations. Their beliefs, shaped by market and technological environments, guide resource allocation and organizational actions (Cooper et al., 2023). Therefore, the ERBV provides a suitable framework for investigating the moderating role of top management beliefs in promoting outsourcing success.

According to the ERBV, a firm can benefit from integrating resources based on its bargaining power (Yuen et al., 2019). Supplier presence, which refers to the availability of reliable third-party logistics (3PL) providers in the market, is closely linked to this bargaining power (Ramon-Jeronimo et al., 2019). A more significant number of suppliers in the market can reduce a firm's reliance on any single supplier, thus increasing its bargaining power. This enhanced bargaining power can boost top management's confidence in outsourcing success (Yang et al., 2019).

Consequently, top managers may react differently to environmental factors and make different decisions based on the level of supplier presence, leading to varied outcomes (Um & Kim, 2019). Therefore, the study indicates that the influence of top management beliefs in moderating the effects of transaction attributes on outsourcing success depends on supplier presence.

2.2 Conceptual review

2.2.1 Transaction attributes

In logistics management, understanding transaction attributes is paramount for ensuring smooth and efficient operations across supply chains. Transaction attributes encompass various factors influencing the exchange of goods and services, ranging from pricing and payment terms to delivery schedules and quality standards (Bulgurcu & Nakiboglu, 2018; Darko & Vlachos, 2022). One key aspect explored in the literature is the role of information transparency in transaction attributes. Studies have highlighted clear and accessible information regarding product specifications, pricing mechanisms, and delivery schedules in fostering trust and reducing uncertainties between trading partners (Ecer, 2017; Huang et al., 2019). For instance, research by Sinkovics et al. (2018) emphasizes the importance of information sharing in enhancing supply chain coordination and reducing transaction costs. Similarly, Christopher (2016) underscores the value of real-time visibility in inventory levels and order statuses to improve responsiveness and agility in logistics operations.

Moreover, the literature delves into the impact of transaction attributes on supplier-buyer relationships. Scholars such as Rindfleisch (2020) have identified trust, communication, and mutual dependence as critical factors shaping these relationships. Transaction attributes such as payment terms, contractual agreements, and dispute resolution mechanisms are vital in establishing and maintaining collaborative partnerships between supply chain partners (Jensen et al., 2019; Schmidt & Wagner, 2019). Furthermore, research by Cuypers et al. (2021) underscores the importance of aligning transaction attributes with the strategic objectives of both parties to foster long-term cooperation and value creation. Additionally, scholars have examined the influence of transaction attributes on logistics performance and competitiveness. Effectively managing transaction attributes, including negotiation strategies, contract design, and risk mitigation measures, can significantly impact cost efficiency, service quality, and overall supply chain performance (Darko & Vlachos, 2022a; Huang et al., 2019). Furthermore, empirical studies

by [Ameknassi et al. \(2016\)](#) have highlighted the role of transaction attributes in shaping competitive advantage, particularly in dynamic and turbulent business environments.

Transaction attributes in logistics outsourcing play a pivotal role in shaping relationships between firms and their logistics service providers. These attributes encompass various factors that influence the nature, complexity, and requirements of transactions between the parties involved ([Yuan et al., 2020b](#); [Zhu et al., 2017b](#)). One key transaction attribute is asset specificity, which refers to the degree to which assets are specialized or dedicated to a particular transaction, making it costly or challenging to redeploy them elsewhere ([Huo et al., 2018b](#)). Asset specificity can manifest in physical assets, such as specialized equipment or facilities, as well as human assets, such as specialized skills or knowledge ([Wang et al., 2023](#)). Logistics technology variations represent another crucial transaction attribute, encompassing the range and sophistication of technologies used in managing and executing logistics activities. These variations can include adopting advanced systems for inventory management, route optimization, or tracking and tracing shipments ([Cherian et al., 2023](#)).

Additionally, logistics demand fluctuation is a significant transaction attribute that pertains to the variability and unpredictability in the demand for logistics services over time. Fluctuations in demand can result from seasonal patterns, market dynamics, or unforeseen events, posing challenges for logistics service providers in managing capacity and resources efficiently ([Elia et al., 2018](#); [Yaghoubi et al., 2020](#)). Understanding the implications of these transaction attributes is essential for firms engaged in logistics outsourcing, as they influence the selection of appropriate outsourcing strategies, the design of contracts, and the management of relationships with logistics service providers

(1) Third party logistic (3PL) provider asset specificity

Asset specificity in the context of third-party logistics (3PL) providers refers to the degree to which the assets and resources of a 3PL provider are specialized for particular use in serving their clients ([Fredriksson et al., 2021](#)). The literature on 3PL provider asset specificity highlights its significance in shaping the dynamics of outsourcing relationships and its impact on logistics performance ([Ecer, 2017](#); [Fredriksson et al., 2021](#)). High levels of asset specificity among 3PL providers can lead to several implications for both the provider and the client. For the provider, specialized assets such as advanced technology systems or specialized transportation equipment may require significant investments, increasing operating costs ([Darko & Vlachos, 2022b](#); [Vlachos](#)

& Polichronidou, 2024). However, these investments can also create a competitive advantage by offering the provider unique services or capabilities that differentiate them in the market (Vlachos & Polichronidou, 2024). On the client side, asset specificity can impact the flexibility and cost-effectiveness of outsourcing arrangements. Clients may need to be more independent of a 3PL provider's specialized assets, which can limit their ability to switch providers or adapt to changing market conditions (Barker et al., 2021).

Asset specificity is a critical consideration in selecting and managing third-party logistics (3PL) providers. The literature suggests that the level of asset specificity can vary widely among 3PL providers based on their focus and specialization (Darko & Vlachos, 2022a). For example, some 3PL providers may specialize in offering highly customized services for specific industries or types of goods, requiring them to invest in specialized equipment or facilities (Ren et al., 2020). In contrast, other 3PL providers may offer more generic services that require less specialized assets. The level of asset specificity can impact the competitiveness of 3PL providers and their ability to meet the unique needs of their clients (Khan et al., 2022). Firms seeking to outsource their logistics functions must carefully assess the asset specificity of potential providers to ensure that they can meet their specific requirements and deliver the desired level of service (Ren et al., 2020).

Moreover, the literature suggests asset specificity can influence the relationship between firms and their 3PL providers. High levels of asset specificity may create dependencies between the client and the provider, as the client relies on the provider's specialized assets to deliver their services effectively (Wang et al., 2023). This dependency can affect the bargaining power of both parties and may impact the terms of the outsourcing agreement. For example, a client may be willing to pay a premium for the services of a 3PL provider with highly specialized assets to ensure that their needs are met (Sinkovics et al., 2018). Conversely, a 3PL provider with highly specialized assets may command higher service prices due to their unique capabilities (Zarbakshnia et al., 2018). Therefore, understanding the level of asset specificity of a 3PL provider is essential for firms seeking to outsource their logistics functions to ensure that they can establish a mutually beneficial relationship that meets their needs and delivers value (Sinkovics et al., 2018; Zarbakshnia et al., 2018).

(2) Logistics technology variations

Logistics technology variations encompass changes and differences in the technologies used in logistics operations (Tijan et al., 2019), and the literature underscores their impact on logistics

management. Advanced logistics technologies, such as real-time tracking systems, warehouse automation, and route optimization software, have transformed logistics operations, improving efficiency, accuracy, and cost-effectiveness (Choi et al., 2019). These technologies enable better visibility and control over the supply chain, allowing companies to optimize inventory levels, reduce lead times, and enhance customer service (Francisco & Swanson, 2018). However, the adoption and integration of logistics technologies can pose challenges, including high implementation costs, compatibility issues with existing systems, and the need for skilled personnel to manage and maintain the technology (Tijan et al., 2019). Despite these challenges, research suggests that embracing variations in logistics technology is crucial for companies seeking to remain competitive in today's fast-paced and dynamic business environment (Choi et al., 2019).

Technology variations have been the subject of extensive research due to their potential to revolutionize supply chain and logistic operations (Cherian et al., 2023). One key area of focus is the impact of technology on inventory management practices. Advanced technologies such as RFID (Radio et al.) and IoT (Internet of Things) sensors enable real-time tracking and monitoring of inventory, leading to improved inventory accuracy, reduced stockouts, and lower holding costs (Khan & Qudrat-Ullah, 2021). Cloud computing and big data analytics are also transforming supply chain planning and optimization. These technologies allow companies to analyze vast amounts of data to make informed decisions, optimize routes, and improve overall supply chain efficiency (Fosso Wamba et al., 2020). The literature also highlights the role of technology in enhancing supply chain visibility and transparency. Technologies such as blockchain enable secure and transparent transactions, reducing the risk of fraud and improving trust among supply chain partners (Rejeb et al., 2021).

Furthermore, logistics technology variations are closely linked to the concept of Industry 4.0, which refers to integrating digital technologies into manufacturing and logistics processes (Benitez et al., 2022). Industry 4.0 technologies, such as artificial intelligence, robotics, and autonomous vehicles, reshape logistics operations by enabling automation, predictive maintenance, and real-time decision-making (Enrique et al., 2022). These technologies offer increased productivity, reduced costs, and improved safety (Enrique et al., 2022). However, the adoption of Industry 4.0 technologies also presents challenges, including the need for significant investments, changes in organizational culture, and the retraining of employees (Garcia-Buendia et al., 2023). Despite these

challenges, studies suggest that companies that successfully embrace Industry 4.0 technologies stand to gain a competitive advantage in the evolving logistics landscape (Martínez-Caro et al., 2018).

(3) Logistics demand fluctuations

Logistics demand fluctuations refer to the variations in the demand for logistics services, which can be influenced by various factors such as seasonality, economic conditions, and market trends (Jafari et al., 2022). Logistics providers must understand and manage these fluctuations to ensure efficient operations and meet customer demands (Jafari et al., 2022). Studies have explored the impact of demand fluctuations on logistics operations and strategies. One key area of research focuses on the challenges posed by demand fluctuations in supply chain management (Liu et al., 2019; Vlachos & Polichronidou, 2024). For example, Jafari et al. (2022) discussed the bullwhip effect, where small fluctuations in end-customer demand can lead to amplified variations in orders placed upstream in the supply chain. This phenomenon highlights the importance of coordinating inventory and production planning to mitigate the impact of demand fluctuations (Liu et al., 2019).

Furthermore, research has examined the role of technology in managing logistics demand fluctuations. For instance, Yaghoubi et al. (2020) studied the benefits of information sharing and coordination among supply chain partners in reducing the bullwhip effect. They argued that improved visibility and communication can lead to more accurate demand forecasting and better inventory management (Kovács & Falagara Sigala, 2021). Another area of focus is the impact of demand fluctuations on logistics network design and optimization. Companies often need to reconfigure their distribution networks in response to changing demand patterns (Gultekin et al., 2022). Gružauskas et al. (2019) discussed dynamic facility location models that allow companies to adapt their network design to meet fluctuating demand while minimizing costs. In addition, research has explored the role of pricing strategies in managing demand fluctuations. For example, Zorbakhshnia & Jaghdani (2018) studied dynamic pricing models that adjust prices in real-time based on demand fluctuations. They found that such strategies can help companies optimize their revenue and manage inventory levels more effectively.

2.2.3 Logistics outsourcing performance

Logistics outsourcing performance is a critical area of research and practice in supply chain management, reflecting the effectiveness and efficiency of outsourcing arrangements in achieving strategic and operational objectives. One significant dimension explored in the literature is the

impact of logistics outsourcing on cost efficiency and financial performance (Afum et al., 2021; Arif & Jawab, 2018). Studies by Simon et al. (2021) and Świtała et al. (2018) have highlighted the potential for cost savings through economies of scale, resource pooling, and enhanced operational efficiency achieved by leveraging the expertise of third-party logistics providers (3PLs). Outsourcing logistics functions such as transportation, warehousing, and inventory management allows organizations to reduce fixed costs, improve asset utilization, and achieve economies of scope, enhancing profitability and financial flexibility (AZIZ et al., 2020; Magento et al., 2020). Furthermore, research by Świtała et al. (2019) emphasizes the importance of establishing clear performance metrics and cost benchmarks to monitor and evaluate the financial impact of logistics outsourcing on overall supply chain performance. More so, Kithuka (2023) found that companies can achieve cost savings of up to 30% by outsourcing logistics activities. Similarly, Nzitunga (2019) noted that outsourcing transportation operations can reduce costs by 10-15%. These findings underscore the importance of cost reduction as a key performance indicator in logistics outsourcing.

Logistics outsourcing can also lead to improvements in service quality. By leveraging the expertise and resources of third-party logistics providers (3PLs), companies can enhance their service levels, such as on-time delivery, order accuracy, and customer responsiveness (Zailani et al., 2017). For example, Joto (2018) found that companies that outsource logistics activities experience higher service levels than those that do not outsource. This highlights the role of service quality improvement as a critical driver of logistics outsourcing performance (Ali & Siddiqui, 2019). Another dimension of logistics outsourcing performance is flexibility and responsiveness. Outsourcing allows companies to adapt quickly to changes in market demand, supply chain disruptions, and other external factors (Ali & Siddiqui, 2019). Yang et al. (2016) noted that outsourcing can enhance supply chain flexibility by enabling companies to access additional capacity and resources when needed. Similarly, Owuor and Zaman (2019) found that outsourcing logistics activities can improve responsiveness to customer needs and market changes. These findings underscore the importance of flexibility and responsiveness in achieving superior logistics outsourcing performance.

Furthermore, scholars have examined the impact of logistics outsourcing on supply chain agility and responsiveness. Research by Arif & Jawab (2018) and Qureshi et al. (2017) emphasize the role of outsourcing in providing organizations with the flexibility to scale operations up or

down rapidly in response to changing market conditions without incurring significant fixed costs or resource commitments. Outsourcing logistics functions allows organizations to focus their internal resources and attention on core competencies that drive competitive advantage and value creation while delegating operational tasks to external specialists (Afum et al., 2021). Additionally, outsourcing to 3PLs provides organizations access to specialized expertise, global networks, and advanced technologies that can enhance supply chain agility and resilience in the face of disruptions and uncertainties (Simon et al., 2021; Świtała et al., 2018).

2.2.4 Logistics supplier presence

Logistics supplier presence is a critical aspect of logistics management, influencing various dimensions of logistical operations and performance. Research in this area has highlighted the significance of supplier presence in shaping supply chain dynamics, enhancing operational efficiency, and improving overall performance (Arif & Jawab, 2018; Qureshi et al., 2017). One key area of focus in the literature is the role of logistics supplier presence in mitigating risks and uncertainties within supply chains. Suppliers play a crucial role in providing critical inputs, resources, and services necessary for the smooth functioning of logistics operations (Chen et al., 2020). Studies have shown that a strong supplier presence can enhance supply chain resilience by providing redundancy, flexibility, and alternative sourcing options in the face of disruptions or uncertainties such as natural disasters, geopolitical events, or market fluctuations (Hasan et al., 2020). By diversifying their supplier base and fostering collaborative relationships with multiple suppliers, organizations can leverage supplier presence to build resilience and adaptability into their supply chain strategies (Zhang et al., 2020).

Another salient dimension explored in the literature is the strategic positioning of logistics suppliers within the supply chain network. Scholars such as Zhang et al. (2020) emphasize the strategic importance of supplier proximity and accessibility in enhancing responsiveness and agility within supply chains. The geographical distribution of logistics suppliers, including warehouses, distribution centers, and transportation hubs, plays a pivotal role in minimizing lead times, reducing transportation costs, and mitigating risks associated with supply chain disruptions (Elock Son et al., 2019; Kovács & Falagara Sigala, 2021). Furthermore, research by Vlachos & Polichronidou (2024) underscores the significance of strategic partnerships and collaborative initiatives between logistics service providers and their customers in optimizing supply chain configurations and improving overall performance.

Furthermore, research has highlighted the strategic importance of supplier presence in improving supply chain visibility and coordination. Supplier presence facilitates closer integration and collaboration between supply chain partners, enabling real-time information sharing, communication, and coordination of logistics activities (Choi et al., 2019; Hwang & Kim, 2019). Studies have demonstrated that organizations with a strong supplier presence are better positioned to monitor and track inventory levels, transportation status, and order fulfillment processes, leading to greater visibility and transparency across the supply chain (Liu et al., 2019). This enhanced visibility enables organizations to optimize logistics processes, reduce lead times, and improve overall supply chain performance (Ameknassi et al., 2016). Moreover, the literature has examined the impact of logistics supplier presence on cost efficiency and operational effectiveness. Suppliers with a strong presence can offer economies of scale, cost advantages, and operational expertise that contribute to cost reduction and efficiency gains within supply chains (Cherian et al., 2023; Francisco & Swanson, 2018). Research has shown that organizations with a robust supplier presence can achieve lower procurement, transportation, and inventory holding costs through economies of scale, volume discounts, and optimized logistics networks (Shraah et al., 2022).

Additionally, suppliers with a strong presence can provide specialized capabilities, value-added services, and innovative solutions that enhance operational effectiveness and competitive advantage (Cherian et al., 2023). However, it is essential to recognize that the effectiveness of logistics supplier presence may vary depending on contextual factors such as industry dynamics, market conditions, and organizational capabilities (Francisco & Swanson, 2018). While supplier presence can offer numerous benefits, it also entails risks and challenges, including dependency issues, supply chain disruptions, and quality concerns. Therefore, organizations must carefully assess and manage their supplier relationships to maximize the benefits of supplier presence while mitigating potential risks and vulnerabilities (Ameknassi et al., 2016; Liu et al., 2019).

2.2.5 Top management beliefs

Top management beliefs play a crucial role in shaping logistics management's strategic direction and operational priorities within organizations. One critical dimension explored in the literature is the alignment between top management beliefs and organizational objectives. Scholars such as Mandal (2021) emphasize the importance of top management's commitment to logistics excellence as a catalyst for achieving competitive advantage and superior business performance. Strategic alignment between top management's beliefs in the importance of logistics functions,

such as inventory management, transportation optimization, and warehousing efficiency, and the overarching goals of the organization is essential for fostering a culture of logistics excellence (Darko & Vlachos, 2022; Marchet et al., 2018). Moreover, research by Fredriksson et al. (2021) underscores the role of top management support in driving cross-functional collaboration and integration across supply chain activities, thereby enhancing coordination and responsiveness.

Furthermore, the literature delves into the role of top management beliefs in fostering innovation and continuous improvement in logistics practices. Studies have highlighted the importance of top management's openness to new ideas, technologies, and best practices in driving organizational learning and adaptation in dynamic and competitive environments (Vlachos & Polichronidou, 2024). Top management's belief in investing in logistics innovation, such as implementing advanced forecasting techniques, adopting automated material handling systems, and leveraging data analytics for decision-making, can significantly enhance supply chain efficiency and effectiveness (Barker et al., 2021). Additionally, research by Elia et al. (2018) emphasizes the role of top management in championing a culture of continuous improvement and performance excellence through initiatives such as total quality management (TQM) and lean logistics principles.

Moreover, scholars have examined the impact of top management beliefs on organizational culture and employee behavior in logistics management. Studies have shown that top management's espoused values and beliefs regarding the importance of customer service, operational excellence, and employee empowerment influence employee attitudes and behaviors toward logistics-related tasks (Yaghoubi et al., 2020). A supportive and empowering leadership style, characterized by clear communication, recognition of employee contributions, and a commitment to employee development, fosters a positive organizational climate conducive to high-performance logistics operations (Kovács & Falagara Sigala, 2021).

2.2.6 Motivations for outsourcing to third-party logistics providers

As elucidated in the literature, the decision to outsource logistics functions to third-party logistics providers (3PLs) is driven by many factors. A comprehensive review reveals several key motivations organizations consider when engaging with 3PLs, ranging from cost reduction and operational efficiency to strategic focus and access to specialized expertise.

Cost reduction is one of the primary drivers for outsourcing logistics to 3PLs (Rodrigues et al., 2018). Studies by Darko & Vlachos (2022) and Marchet et al. (2018) have emphasized the

potential for cost savings through economies of scale, resource pooling, and leveraging the 3PL's infrastructure and network. Outsourcing allows organizations to convert fixed costs into variable costs, enhancing cost flexibility and scalability in response to fluctuating demand patterns (Fredriksson et al., 2021). Moreover, organizations can achieve significant cost savings by outsourcing non-core logistics functions such as transportation and warehousing while reallocating resources to core competencies and strategic initiatives (Vlachos & Polichronidou, 2024).

Operational efficiency and performance improvement represent another critical motivation for outsourcing to 3PLs. Research by Barker et al. (2021) highlights the potential for 3PLs to provide access to advanced technologies, best practices, and industry expertise that may not be available internally within organizations. By leveraging the 3PL's specialized knowledge and capabilities, organizations can enhance supply chain visibility, streamline processes, and improve service levels (Gultekin et al., 2022). Furthermore, outsourcing logistics functions to 3PLs enables organizations to tap into the provider's operational excellence and continuous improvement initiatives, driving efficiency gains and enhancing overall supply chain performance (Yuan et al., 2020).

Additionally, strategic focus and flexibility are significant motivations for outsourcing to 3PLs. Organizations often outsource non-core logistics functions to 3PLs to concentrate on strategic activities such as product development, marketing, and customer relationship management (Huang et al., 2019). Outsourcing allows organizations to focus their resources and attention on core competencies that drive competitive advantage and value creation while delegating operational tasks to external specialists (Qureshi et al., 2018). Moreover, outsourcing allows organizations to rapidly scale operations up or down in response to changing market conditions without incurring significant fixed costs or resource commitments (Zailani et al., 2017).

Furthermore, access to specialized expertise and capabilities offered by 3PLs represents a compelling motivation for outsourcing logistics functions. 3PLs often possess domain-specific knowledge, industry experience, and technical expertise that can augment and complement the capabilities of internal logistics teams (Zarbakshnia & Jaghdani, 2018). By partnering with 3PLs, organizations can access a broader range of logistics services and solutions, including niche services such as cold chain management, hazardous materials handling, and customs brokerage (Marchet et al., 2018). Additionally, outsourcing to 3PLs provides organizations access to global

networks and partnerships, facilitating international expansion and market penetration (Rodrigues et al., 2018).

2.3 Empirical review

2.3.1 3PL providers' asset specificity and logistics outsourcing performance

Research by Huo et al. (2018) found that higher levels of asset specificity on the part of 3PL providers are associated with increased cost efficiencies for their clients, particularly in industries requiring specialized equipment or expertise. Similarly, studies by Marchet et al. (2018) and Qureshi et al. (2018) have highlighted the importance of asset specificity in achieving cost savings through economies of scale and scope, as well as through the customization of logistics solutions to meet clients' unique requirements. Moreover, Research by Fredriksson et al. (2021) found that 3PL providers with higher levels of asset specificity tend to deliver superior service levels and performance outcomes for their clients, particularly regarding on-time delivery, order accuracy, and responsiveness to customer needs. Additionally, studies by Chen et al. (2020) and Vlachos & Polichronidou (2024) have highlighted the importance of asset specificity in fostering collaborative relationships and alignment of goals between 3PL providers and their clients, leading to improved service quality and overall customer satisfaction. Furthermore, empirical studies have explored the impact of asset specificity on supply chain agility and responsiveness in logistics outsourcing arrangements (Francisco & Swanson, 2018). Research by Ren et al. (2020) found that higher levels of asset specificity enable 3PL providers to offer more flexible and responsive logistics solutions, allowing clients to adapt quickly to changing market conditions and customer demands. Similarly, studies by Darko & Vlachos (2022) and Sinkovics et al. (2018) have highlighted the role of asset specificity in enhancing supply chain resilience and risk management, particularly in industries with volatile demand patterns or complex supply chain networks.

2.3.2 Logistics technological variations and logistics outsourcing performance

Empirical studies have examined the influence of logistics technological variations on cost efficiency and financial performance in logistics outsourcing relationships. For instance, research by Tijan et al. (2019) found that adopting advanced technologies by third-party logistics (3PL) providers is positively associated with cost savings and operational efficiencies for their clients. Similarly, studies by Shamout et al. (2022) and Verdouw et al. (2018) have highlighted the role of technology-enabled logistics solutions in reducing transportation costs, optimizing inventory management, and improving overall supply chain productivity. These findings suggest that

investments in logistics technologies by 3PL providers can contribute to cost reductions and enhanced financial performance for their clients through improved operational processes and resource utilization (Bulgurcu & Nakiboglu, 2018; Schmidt & Wagner, 2019). In addition, research by Qu et al. (2019) found that using advanced tracking and monitoring technologies by 3PL providers leads to greater visibility and transparency throughout the supply chain, resulting in higher service levels and improved customer responsiveness. Additionally, studies by Gong et al. (2018) and Lai et al. (2018) have highlighted the impact of technology-enabled logistics solutions on reducing lead times, minimizing order errors, and enhancing overall service performance. These findings underscore the importance of logistics technologies in meeting customer expectations and delivering superior service experiences in outsourcing relationships.

More so, research by Benitez et al. (2022) found that the adoption of digital technologies such as cloud computing and the Internet of Things (IoT) enables 3PL providers to offer more flexible and adaptive logistics solutions, allowing clients to respond quickly to changes in market demand and supply chain disruptions. Similarly, studies by Enrique et al. (2022) and Garcia-Buendia et al. (2023) have highlighted the role of data analytics and predictive modeling in improving supply chain visibility and risk management, thereby enhancing supply chain resilience and responsiveness. These findings suggest that investments in logistics technologies can enhance the agility and responsiveness of outsourcing arrangements, enabling organizations to mitigate risks and capitalize on emerging opportunities in dynamic business environments.

2.3.4 Logistics demand fluctuations and logistics outsourcing performance.

Jafari et al. (2022) posit that fluctuations in demand for logistics services impact the effectiveness and efficiency of outsourcing arrangements. Literature provides a basis for this assumption. Vlachos & Polichronidou (2024) discuss the bullwhip effect, where small fluctuations in end-customer demand can lead to amplified variations in orders placed upstream in the supply chain. This phenomenon suggests that demand fluctuations can significantly impact logistics outsourcing performance, potentially leading to issues such as inventory shortages or excesses, inefficient transportation planning, and suboptimal resource allocation (Liu et al., 2019; Yaghoubi et al., 2020). Moreover, research by Sinkovics et al. (2018) emphasizes the importance of information sharing and coordination among supply chain partners in mitigating the bullwhip effect. This highlights the role of collaboration and communication in managing the impact of demand fluctuations on logistics outsourcing performance.

Additionally, [Yuan et al. \(2020\)](#) discuss the need for dynamic facility location models to adapt logistics networks in response to changing demand patterns, indicating that the ability to respond effectively to demand fluctuations is crucial for outsourcing success. Theoretically, the firm's RBV provides further justification for this hypothesis. According to RBV, a firm's resources and capabilities, including its ability to manage demand fluctuations, can contribute to its competitive advantage ([Zhang et al., 2020](#)). Therefore, firms that can effectively manage and respond to logistic demand fluctuations through outsourcing arrangements are more likely to achieve superior cost efficiency, service quality, and overall supply chain effectiveness ([Yuen et al., 2019](#)).

2.3.5 Logistics supplier presence and logistics outsourcing performance

Research by [Zarbakshnia & Jaghdani \(2018\)](#) found that more significant supplier presence in strategic locations leads to cost savings and operational efficiencies for logistics outsourcing clients, particularly regarding reduced transportation costs and improved inventory management. Similarly, studies by [Dubey et al. \(2019\)](#) and [Świtała et al. \(2018\)](#) have highlighted the role of supplier consolidation and network optimization in enhancing supply chain agility and reducing overall logistics costs. These findings suggest that a robust logistics supplier presence can reduce costs and improve financial performance by enabling more efficient and responsive supply chain operations ([Zhu et al., 2017](#)). Moreover, [Chen et al. \(2018\)](#) found that suppliers with a strong presence and operational excellence are better equipped to meet customer expectations for on-time delivery, order accuracy, and product quality. Additionally, studies by ([Zhu et al., 2017](#)) have highlighted the importance of supplier collaboration and visibility in enhancing service levels and customer responsiveness. These findings underscore the significance of logistics supplier presence in delivering superior service experiences and enhancing overall customer satisfaction in outsourcing arrangements. Research by [Wu et al. \(2019\)](#) found that suppliers with a diverse geographical presence enable logistics outsourcing clients to respond quickly to changes in market demand and supply chain disruptions. Similarly, studies by [Wang et al. \(2018\)](#); [Yang et al. \(2020\)](#) have highlighted the role of supplier flexibility and adaptability in enhancing supply chain resilience and responsiveness. These findings suggest that a robust logistics supplier presence can contribute to supply chain agility by providing clients access to diverse resources, capabilities, and market insights.

2.3.6 Top management beliefs and logistics outsourcing performance

Empirical investigations provide valuable insights into the role of leadership attitudes and values in shaping the effectiveness of outsourcing arrangements in supply chain management. Research by [Zhu et al. \(2016\)](#) found that top management's commitment to outsourcing as a strategic initiative positively impacts cost savings and operational efficiencies, particularly when accompanied by clear goals and performance metrics. Similarly, studies by [Zhang et al. \(2018\)](#) and [Liu et al. \(2021\)](#) have highlighted the importance of top management support in driving cost-reduction initiatives and fostering a culture of continuous improvement in outsourcing arrangements. These findings suggest that top management beliefs play a crucial role in shaping the financial outcomes of logistics outsourcing through their influence on strategic direction and resource allocation.

Research by [Wang et al. \(2019\)](#) found that top management's emphasis on customer-centric values and service excellence positively impacts service levels and customer responsiveness in outsourcing arrangements. Additionally, studies by [Chen et al. \(2020\)](#) and [Li et al. \(2022\)](#) have highlighted the importance of top management involvement in fostering collaborative relationships and alignment of goals between outsourcing partners, leading to improved service outcomes and overall customer satisfaction. These findings underscore the significance of top management beliefs in driving service excellence and enhancing the customer experience in outsourcing relationships. [Yu et al. \(2017\)](#) found that top management's endorsement of innovation and flexibility positively impacts supply chain resilience and responsiveness, particularly in dynamic and uncertain environments. Similarly, studies by [Wang et al. \(2020\)](#); [Zhao et al. \(2021\)](#) have highlighted the role of top management in championing change management initiatives and fostering a culture of adaptability and continuous learning in outsourcing partnerships. These findings suggest that top management beliefs influence supply chain agility by shaping organizational culture and strategic priorities, enabling effective responses to market dynamics and disruptions.

2.4 Summary

This section explores the theoretical and empirical underpinnings of logistics outsourcing performance. It begins with a theoretical review, introducing Transaction Cost Theory (TCT) and the Extended Resource-Based View (ERBV). TCT emphasizes the role of transaction costs and attributes like asset specificity, uncertainty, and frequency in shaping outsourcing decisions and

performance. ERBV extends the Resource-Based View by considering external resources and relationships, highlighting the importance of supplier presence and top management beliefs in influencing outsourcing success.

The conceptual review delves into key constructs, including transaction attributes (asset specificity, technology variations, and demand fluctuations), logistics outsourcing performance (cost efficiency, service quality, and flexibility), logistics supplier presence, and top management beliefs. The empirical review synthesizes existing research, demonstrating the impact of these constructs on logistics outsourcing performance. Overall, the chapter provides a comprehensive framework for understanding the factors influencing logistics outsourcing success and identifies areas for further investigation.

3. Conceptual framework and hypotheses development

3.1 Conceptual framework

Theoretical perspectives such as TCT and the RBV offer valuable insights into how transaction attributes and top management beliefs influence the success of logistics outsourcing. TCT posits that transaction attributes, such as asset specificity, technological variations, and demand fluctuation, impact the performance of outsourcing arrangements. On the other hand, RBV suggests that top management beliefs and supplier presence play moderating roles in these relationships. By integrating these perspectives, a more comprehensive understanding emerges: transaction attributes affect outsourcing performance under the conditions of top management beliefs and also contingent upon the presence of the supplier. This integrated conceptual model is depicted in [Figure 3.1](#).

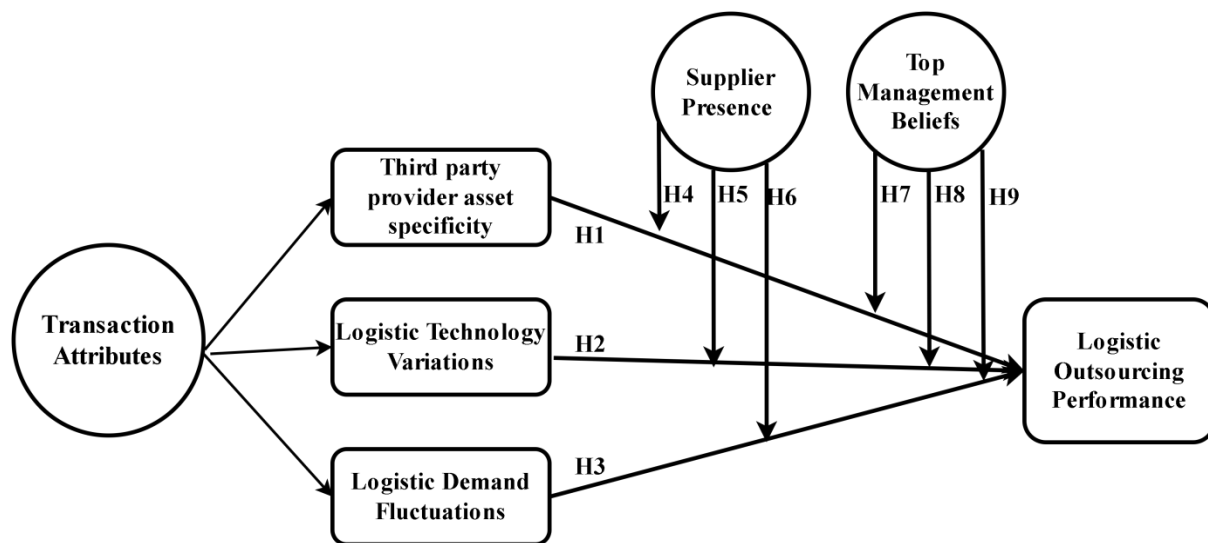


Figure 3.1 The conceptual framework of the study

3.2 Hypotheses development

3.2.1 The effect of 3PL providers on logistics outsourcing performance

Asset specificity for a third-party logistics (3PL) provider pertains to investments made by the provider that are tailored to a specific logistics outsourcing arrangement and cannot be easily transferred to other alternatives (Qureshi et al., 2018; Rodrigues et al., 2018). These investments typically encompass both physical assets and human assets. Physical assets are tangible resources

such as equipment, facilities, and hardware that support a specific outsourcing relationship (Marchet et al., 2018). On the other hand, human assets involve specialized knowledge and trained employees uniquely equipped to fulfill the requirements of a particular outsourcing contract (Vlachos & Polichronidou, 2024).

In a logistics outsourcing partnership, the asset specificity of a 3PL provider can enhance the success of the arrangement through several fundamental mechanisms (Barker et al., 2021). Firstly, as per TCT, the significant level of asset specificity motivates the 3PL provider to protect these specialized assets and uphold the relationship (Bag et al., 2020; Darko & Vlachos, 2022). This commitment encourages collaboration with the client, providing tailored logistics services that align with the client's objectives, ultimately contributing to successful outsourcing outcomes (Ecer, 2017; Huang et al., 2019). Secondly, the high asset specificity of the 3PL provider helps mitigate the risk of resource dependence for the client (Sinkovics et al., 2018). Since these dedicated assets are not easily repurposed for other uses, the client can rely on the 3PL provider's consistent support and service delivery, reducing the vulnerability associated with resource dependency (Zarbakshnia et al., 2018). Thirdly, the long-term perspective inherent in logistics outsourcing relationships characterized by high asset specificity allows clients to focus more on strategic, long-term development initiatives (Yuan et al., 2020). This focus on strategic goals, facilitated by the stability and commitment engendered by asset specificity, can lead to a more profound and sustainable success in logistics outsourcing arrangements (Elock Son et al., 2019; Zhang et al., 2020).

In summary, the provision of tailored logistics services, risk mitigation, and strategic long-term focus resulting from high levels of asset specificity in a 3PL provider contribute significantly to the success of logistics outsourcing arrangements. Previous research in logistics outsourcing has consistently shown a positive relationship between asset specificity and logistics outsourcing performance (e.g., Ivanov, 2022; Świtłała et al., 2018; Q. Wang et al., 2023). For instance, Vita et al. (2010) demonstrated that suppliers' human and physical asset specificity positively impact outsourcing performance. Based on these findings, the researcher hypothesizes that:

H1: Asset specificity affects outsourcing performance positively.

3.2.2 The effect of logistic technological variations on logistics outsourcing performance

Logistics technological variations refer to the uncertainty the outsourcer perceives regarding the technologies required for logistics services and their outsourcing (Ecer, 2017). This variability stems from the outsourcer's inability to predict or track the evolution of logistics technologies, which exposes them to the risk of technological obsolescence (Tijan et al., 2019). Firms that face such variations may experience lower logistics efficiency and quality because they must catch up with the latest technological advancements (Ecer, 2017; Tijan et al., 2019). To mitigate these risks, firms often choose to outsource their logistics activities. By doing so, they can leverage the expertise of 3PL providers, who are better equipped to understand and adopt the latest logistics technologies (Francisco & Swanson, 2018). Consequently, the study contends that, during the outsourcing process, embracing technological variations in logistics can contribute to the performance of logistics outsourcing arrangements.

Firms facing high levels of technological variability risk encountering logistics failure due to the rapid evolution of logistics technologies. To mitigate this risk and ensure the delivery of high-quality logistics services, these firms are motivated to address the variations by relying heavily on their 3PL providers (Gelderman et al., 2016). This close collaboration enhances the efficiency of logistics outsourcing, leading to improved service quality and reduced costs (Cherian et al., 2023). In contrast, firms with low technological variability may already possess internal technological capabilities, potentially leading to discrepancies between their logistics strategies and those of their 3PL providers. This misalignment can hinder 3PL providers from fully leveraging their expertise (Choi et al., 2019; Tijan et al., 2019). Therefore, logistics technological variations promote outsourcing performance by fostering collaboration between logistics outsourcing users and 3PL providers. High levels of technological variations prompt firms to actively engage in learning from their professional 3PL providers. This collaboration lets firms stay updated on the latest logistics technologies and adapt quickly to the changing technological landscape (Schmidt & Wagner, 2019; Yuan et al., 2020).

In contrast, firms with low technological variations, albeit possessing some internal technological skills, may not fully capitalize on the knowledge offered by their 3PL partners, as they are less motivated to learn from them (Ruiz-Torres et al., 2018). Therefore, technological variations can enhance logistics outsourcing performance by encouraging firms to learn and keep

pace with technological advancements continuously. This emphasis on learning highlights the potential for acquiring a competitive edge through knowledge acquisition (Yang et al., 2016).

Firms experiencing high logistics technological variations could be more efficient in logistics activities but remain competitive in their respective industries. By entrusting the risks associated with logistics technology to their 3PL providers (Kithuka, 2023; Zhu et al., 2017), firms can allocate their resources more effectively toward enhancing their core competencies and achieving strategic goals. This strategic focus enables them to attain logistics outsourcing success from a broader perspective (Tijan et al., 2019). Therefore, the study proposes the following hypothesis:

H2: Technological variations affect outsourcing performance positively.

3.2.3 The effect of logistic demand fluctuations on logistics outsourcing performance

Logistic demand fluctuations refer to the variability and unpredictability in the demand for logistics services, which can pose challenges for firms engaged in outsourcing logistics activities (Jafari et al., 2022). These fluctuations can lead to inefficiencies in resource allocation, difficulties in capacity planning, and increased costs associated with managing fluctuating demand (Vlachos & Polichronidou, 2024). One of the key benefits of outsourcing logistics activities is the ability to leverage the expertise and resources of third-party logistics providers (3PLs) to meet varying demand patterns efficiently. However, when demand fluctuations are significant and frequent, they can strain the capabilities of 3PLs, leading to service disruptions, delays, and increased costs (Fredriksson et al., 2021).

Firms outsourcing logistics often rely on 3PLs to provide flexible and responsive services to adapt to changing demand conditions. However, if 3PLs cannot manage demand fluctuations effectively, it can negatively impact the performance of logistics outsourcing arrangements (Barker et al., 2021; Yaghoubi et al., 2020). For example, if 3PLs cannot scale their operations to meet peak demand, it can result in stockouts, delayed deliveries, and dissatisfied customers (Kovács & Falagara Sigala, 2021). Demand fluctuations can also impact the overall efficiency and cost-effectiveness of logistics operations. Fluctuating demand patterns can lead to underutilization or overutilization of resources, such as transportation assets and warehousing facilities, resulting in increased costs and reduced profitability (Chen et al., 2020; Gultekin et al., 2022).

Moreover, demand fluctuations can affect the stability and predictability of supply chains, making it challenging for firms to maintain consistent service levels and meet customer

expectations (Sinkovics et al., 2018). This can have a cascading effect on other aspects of logistics outsourcing performance, such as inventory management, order fulfillment, and overall supply chain responsiveness (Ameknassi et al., 2016; Zarbakhshnia et al., 2018). Given this argument, the study proposes that:

H3: Demand fluctuations will negatively impact logistics outsourcing performance.

3.2.4 The moderating role of logistic supplier presence

Logistic supplier presence refers to the availability and reliability of external logistics service providers who can effectively support and manage logistics operations (Amoako-Gyampah et al., 2020). A strong supplier presence indicates multiple reliable options for outsourcing logistics activities (Hasan et al., 2020).

High asset specificity implies that the assets are specialized and dedicated to the outsourcing relationship, making redeploying them to alternative uses difficult. In such cases, the involvement and presence of the logistic supplier become crucial (Amoako-Gyampah et al., 2020). When there is high asset specificity, the supplier's presence can facilitate better coordination, communication, and alignment of goals between the firm and the supplier (Zarbakhshnia & Jaghdani, 2018). The supplier's presence can also lead to a deeper understanding of the firm's specific asset requirements and enable customization of services to meet these requirements (Mandal, 2021; Son et al., 2021). Consequently, when supplier presence is high, the positive impact of asset specificity on logistics outsourcing performance is expected to be more pronounced.

On the other hand, when supplier presence is low, the benefits of asset specificity may only partially be realized (Dubey et al., 2019). Low supplier presence may result in communication gaps, coordination issues, and a lack of alignment between the firm and the supplier. This can lead to inefficiencies, delays, and misunderstandings that hinder the effective utilization of specialized assets (Amoako-Gyampah et al., 2020; Mandal, 2021). As a result, the positive relationship between asset specificity and logistics outsourcing performance is likely weaker when supplier presence is low. The study, therefore, proposes that:

H4: The positive impact of 3PL providers' asset specificity on logistics outsourcing performance is more vital when supplier presence is high than when supplier presence is low.

In an outsourcing relationship, effective utilization of technology is essential for enhancing efficiency, visibility, and responsiveness in the supply chain (Gultekin et al., 2022). When there

are significant variations in logistics technology between the firm and the supplier, the supplier's presence becomes crucial in facilitating technological integration and alignment (Gružasuskas et al., 2019). High supplier presence can lead to better communication, collaboration, and sharing of technological resources and expertise. This can result in smoother technology integration, faster adoption of new technologies, and more effective use of existing technologies (Francisco & Swanson, 2018; Ren et al., 2020). Consequently, when supplier presence is high, the impact of logistics technology variations on logistics outsourcing performance is expected to be more pronounced (Ramon-Jeronimo et al., 2019).

Conversely, when supplier presence is low, the benefits of logistics technology variations may still need to be fully realized. Low supplier presence may lead to misalignment in technological capabilities, limited knowledge sharing, and difficulties integrating disparate systems (Choi et al., 2019; Tijan et al., 2019). This can result in suboptimal use of technology, reduced efficiency, and lower performance in logistics outsourcing (Verdouw et al., 2018). As a result, the positive relationship between logistics technology variations and logistics outsourcing performance is likely weaker when supplier presence is low. The study hypothesizes that:

H5: The positive impact of logistic technological variations on logistics outsourcing performance is more vital when supplier presence is high than when supplier presence is low.

When logistic demand fluctuations occur, firms with a high supplier presence can switch between different suppliers or engage multiple suppliers simultaneously to meet fluctuating demand (Marchet et al., 2018). This flexibility allows firms to manage capacity constraints better, reduce the risk of service disruptions, and maintain service levels during peak demand periods (Fredriksson et al., 2021). Furthermore, a high supplier presence can also lead to increased competition among suppliers, which may result in lower costs for logistics services. This cost advantage can help offset additional costs incurred due to demand fluctuations, reducing the overall negative impact on outsourcing performance (Kovács & Falagara Sigala, 2021). On the other hand, firms with a low supplier presence may face limited options when dealing with demand fluctuations. They may be more dependent on a single supplier, which can increase the risk of disruptions if the supplier cannot cope with fluctuating demand (Chen et al., 2020; Gružasuskas et al., 2019).

Additionally, limited supplier options may result in higher costs for logistics services, as firms may have less bargaining power with their suppliers (Ramon-Jeronimo et al., 2019). Firms with a high supplier presence are better equipped to manage demand fluctuations and mitigate their negative impact on outsourcing performance than those with a low supplier presence. The study, hence, proposes that:

H6: The negative impact of logistics demand fluctuations on logistics outsourcing performance is weaker when supplier presence is high than when supplier presence is low.

3.2.5 The moderating role of top management beliefs

Top management beliefs are crucial in shaping the organization's approach toward outsourcing and its perceived benefits. Positive beliefs, such as viewing outsourcing as a strategic tool for enhancing competitiveness and efficiency, can lead to proactive decision-making and resource allocation toward outsourcing activities (Yang et al., 2019). In asset specificity, positive top management beliefs can drive efforts to effectively manage and leverage specialized assets within the outsourcing relationship (Cuypers et al., 2021). When top management holds positive beliefs about outsourcing, they will likely invest in building strong relationships with suppliers, ensuring clear communication, and aligning goals and expectations (Bulgurcu & Nakiboglu, 2018). This proactive approach can lead to better utilization of assets, enhanced coordination, and improved performance in logistics outsourcing (Darko & Vlachos, 2022a).

Conversely, negative beliefs can lead to hesitancy in investing in specialized assets or reluctance to engage with suppliers fully. This can result in missed opportunities for leveraging asset specificity and suboptimal performance in logistics outsourcing (Huang et al., 2019). As a result, the positive relationship between asset specificity and logistics outsourcing performance will likely be weaker when top management beliefs are harmful. The study, therefore, proposes that:

H7: The positive impact of 3PL providers' asset specificity on logistics outsourcing performance is more substantial when top management beliefs in outsourcing benefits are high compared to when they are low.

Top management beliefs influence the organization's strategic direction and decision-making processes, including outsourcing and technology adoption (Sinkovics et al., 2018). Positive beliefs about outsourcing can lead to a proactive approach toward leveraging technological advancements

in logistics outsourcing (Tsai et al., 2022). When top management believes technology variations can enhance competitiveness and efficiency, they will likely invest in technology integration, knowledge sharing, and supplier collaboration (Yuan et al., 2020). Negative top management beliefs, such as skepticism towards technology or concerns about technological risks, can hinder effective technology integration in logistics outsourcing (Zhu et al., 2017). Negative beliefs may lead to reluctance to adopt new technologies, limited investment in technology infrastructure, and a reactive approach towards technology variations. This can result in suboptimal use of technology and reduced performance in logistics outsourcing. As a result, the nexus between logistics technology variations and logistics outsourcing performance will likely be weaker when top management beliefs are harmful. Top management beliefs can drive efforts to align technological capabilities with outsourcing objectives, leading to better integration and utilization of technologies (Ameknassi et al., 2016; Yang et al., 2016). This can result in enhanced visibility, efficiency, and responsiveness in logistics outsourcing. Consequently, when top management beliefs are pronounced, the positive impact of logistics technology variations on logistics outsourcing performance is expected to be more imminent (Lai et al., 2018). The study hypothesizes that:

H8: The positive impact of logistic technological variations on logistics outsourcing performance is more substantial when top management believes that technology-driven efficiency is higher than when they are low.

Logistics demand fluctuations can pose challenges for logistics outsourcing, requiring flexibility, adaptability, and quick response times from the outsourcing partners (Zarbakshshnia & Jaghdani, 2018). Top management beliefs regarding outsourcing and risk management can influence the impact of demand fluctuations on outsourcing performance. Negative top management beliefs, such as viewing outsourcing as a risk or loss of control, may lead to a more reactive approach toward demand fluctuations (Yuan et al., 2020). Negative beliefs may result in hesitancy to invest in technologies or strategies that can help manage demand variability (Hasan et al., 2020). This can lead to inefficiencies, disruptions, and lower performance in logistics outsourcing when demand fluctuations occur (Świtła et al., 2018; Yang et al., 2016). As a result, the negative relationship between logistics demand fluctuations and logistics outsourcing performance is likely stronger when top management beliefs are harmful. Top management beliefs,

such as viewing outsourcing as a strategic tool for enhancing competitiveness and efficiency, can lead to proactive strategies for managing demand fluctuations (Chen et al., 2019). Positive beliefs may drive investments in technology, collaboration with suppliers, and the development of agile supply chain practices. These efforts can help mitigate the adverse effects of demand fluctuations, leading to more stable performance in logistics outsourcing (Mandal, 2021; Shraah et al., 2022). Consequently, when top management beliefs are positive, the negative impact of logistics demand fluctuations on logistics outsourcing performance is expected to be attenuated. The study, therefore, proposes that:

H9: The negative impact of logistics demand fluctuations on logistics outsourcing performance is weaker when top management beliefs in adaptive supply chain management are high compared to when they are low.

3.3 Summary

This section explores the impact of transaction attributes and top management beliefs on logistics outsourcing performance. The study integrates the Transaction Cost Theory (TCT) and Resource-Based View (RBV) to propose a comprehensive framework. The research identifies three transaction attributes: asset specificity, technological variations, and demand fluctuations, and investigates their influence on outsourcing performance. Additionally, the study examines the moderating roles of supplier presence and top management beliefs. The hypotheses suggest that asset specificity and technological variations positively affect performance, while demand fluctuations have a negative impact. Supplier presence and positive top management beliefs amplify the positive effects of asset specificity and technological variations, while mitigating the negative impact of demand fluctuations. This research aims to provide insights into optimizing logistics outsourcing decisions and improving overall performance.

4. Research methodology

This section of the research encompasses the method and processes employed by the researcher to achieve the study's objectives. The method encircles the research onion proposed by (Saunders, 2019). The researcher developed an onion model for the current study (Figure 4.1). This section stipulated the study population, sampling approach, and data collection and analysis processes.

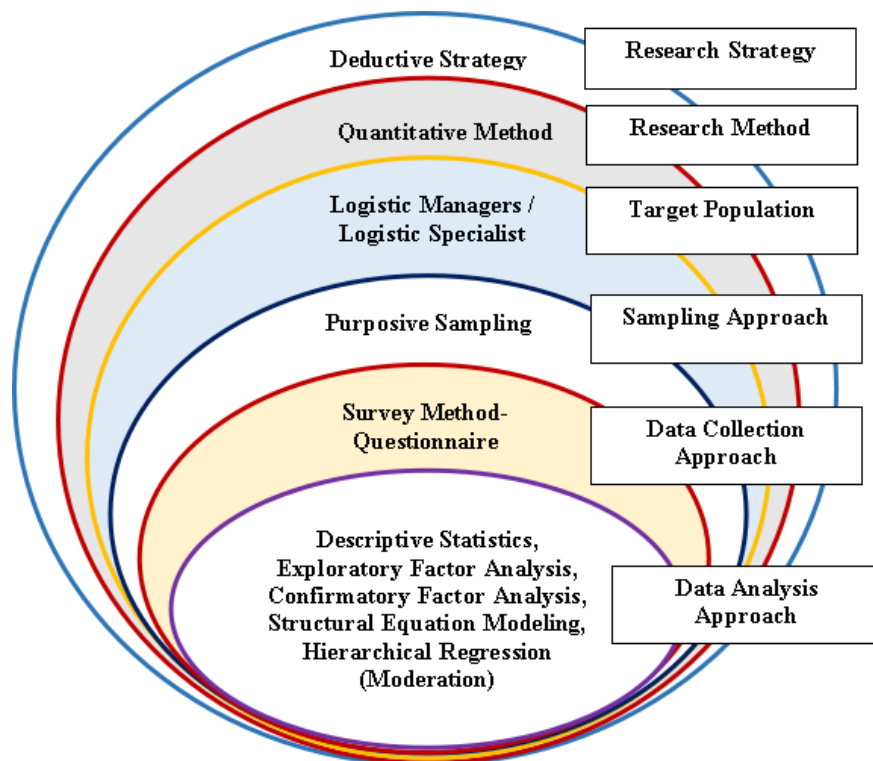


Figure 4.1 Onion model for the present study

4.1 Research strategy

Two main research strategies are inductive and deductive (Saunders et al., 2012). The inductive research strategy involves the generation of new theories or insights based on observed patterns or phenomena (Azungah, 2018). Unlike deductive research, which starts with theory and tests hypotheses using empirical data, inductive research begins with specific observations or data and moves towards broader generalizations or theoretical propositions. This approach is characterized by an iterative process of observation, pattern recognition, conceptualization, and theory building (Azungah, 2018; Proudfoot, 2023). Inductive research often employs qualitative

methods such as interviews, case studies, or grounded theory to explore new phenomena, generate hypotheses, and provide rich insights into complex social, cultural, or organizational contexts (Proudfoot, 2023).

This study relied on the deductive strategy to obtain information that can be quantified. A deductive research strategy involves a systematic process of hypothesis testing based on existing theories or principles (Azungah, 2018). It typically begins with a general theory or premise, from which specific hypotheses are formulated to be tested empirically. This approach follows a structured sequence, starting with developing hypotheses derived from theoretical frameworks (Woiceshyn & Daellenbach, 2018). Researchers then collect data to test these hypotheses, often employing quantitative methods such as surveys or experiments. The collected data are analyzed using statistical techniques to evaluate the hypotheses and draw conclusions about their validity (Woiceshyn & Daellenbach, 2018). Deductive research helps confirm or refine existing theories, predict outcomes, and generalize findings to broader populations. It provides a rigorous framework for hypothesis testing and contributes to the accumulation of knowledge within a specific field or discipline (Proudfoot, 2023; Woiceshyn & Daellenbach, 2018).

4.2 Methodology

Hameed (2020) states that qualitative and quantitative methods represent the two fundamental research methods. The qualitative research method offers an approach to understanding phenomena by delving into the depth of human experiences, perceptions, and behaviors. It emphasizes context, meaning, and the subjective interpretation of data (Hameed, 2020). In qualitative research, data collection methods such as interviews, focus groups, or observations are employed to gather rich, detailed information from participants (Arghode, 2012). Qualitative data analysis involves systematic coding, categorizing, and interpreting the collected data to identify patterns, themes, or trends. Through interpretation, qualitative researchers aim to generate insights, theories, or explanations that capture the underlying meanings and complexities of the phenomena under study (Hameed, 2020).

This study is more aligned with the quantitative research method. This method measures and analyzes phenomena through numerical data and statistical analysis. It is characterized by a deductive approach, aiming to test hypotheses, establish causal relationships, and generalize findings to broader populations (Arghode, 2012; Bingham & Witkowsky, 2021). Quantitative researchers collect data through structured instruments such as surveys, experiments, or

observations, generating numerical data that can be analyzed using statistical techniques (Hameed, 2020). Quantitative researchers seek to generalize their findings to larger populations by ensuring representative sampling, statistical power, and reliability of measures. By providing a structured and rigorous approach to research, quantitative research enables precise measurement, statistical inference, and generalization of findings across populations, making it particularly useful for testing hypotheses, making predictions, and establishing causal relationships between variables (Arghode, 2012; Nassaji, 2015).

4.3 Research population

The research population refers to the entire group of individuals or cases the researcher is interested in studying and from which they will draw their sample (Hameed, 2020). It is essential to define the research population clearly, as it helps to ensure that the study's findings can be generalized to a larger group or population (Stratton, 2021). The population for this study comprised logistics managers, deputy logistic managers, and logistic specialists of firms across various industries such as manufacturing, retail, distribution, and services, which outsource logistics functions to third-party providers within the capital of Jamaica, Kingston, or internationally. This research population encompasses a diverse range of companies in size, industry sector, and outsourcing practices to ensure comprehensive coverage and representation of the logistics outsourcing landscape in Jamaica. This diversity allowed for a holistic understanding of how different types of firms, with varying outsourcing experience and resources, perceive and experience the dynamics between supplier presence, top management beliefs, transaction attributes, and logistics outsourcing performance.

4.4 Sampling technique and sample size

Sampling approaches are means through which researchers can select a subset of the study's population systematically and comprehensively (Etikan & Bala, 2017). However, the choice of a sampling approach depends on factors such as the research objectives, population features, resource availability, and desired precision level (Etikan & Bala, 2017). There are two main sampling techniques which are: probability, which gives an equal chance to the sample population (e.g., random, stratified, and systematic sampling), and non-probability sampling, which involves selecting a sample based on non-random criteria (e.g., convenience and purposive sampling) (Berndt, 2020).

This study revolves around the purposive sampling approach. This approach is where the researcher selects participants based on specific characteristics or criteria relevant to the research objectives (Stratton, 2021). This approach is beneficial when researchers seek to gain in-depth insights from a specific population with expertise, experience, or characteristics pertinent to the study (Levy & Lemeshow, 2013). The purposive approach was used to select the logistic managers or specialists and their deputies from diverse firms because they could provide rich, detailed, and relevant information, enhancing the depth and quality of the research findings. However, because the selection is subjective and not random, the findings from purposive sampling may not be generalizable to the broader population.

Sample size refers to the number of observations or participants included in a research study. It is a crucial aspect of research design, as it directly impacts study findings' validity, reliability, and generalizability (Levy & Lemeshow, 2013). The sample size is determined based on various factors, including the research objectives, population characteristics, statistical considerations, and practical constraints (Sharma, 2017). A larger sample size generally increases the precision and reliability of study results, allowing for more accurate estimates of population parameters and greater statistical power. In this study, the sample size is 265.

4.5 Research instrument

This study employed electronic questionnaires, specifically developed with the help of Google Forms, as its primary research instrument. Several factors informed this choice, with one key consideration being the convenience and user-friendliness of online questionnaires compared to traditional hard-copy formats. Online questionnaires offer distinct advantages, mainly when research involves a large and widely dispersed population. They enable efficient data collection from respondents who may be geographically distant from the researcher (Afolayan & Oniyinde, 2019). Moreover, electronic questionnaires afford researchers more significant control over the research process, facilitating real-time monitoring of responses and simplified data summarization (Sharma, 2022). This feature proves invaluable for studies aiming to gather data from a diverse array of participants within a limited timeframe and across various locations. Additionally, researchers can uphold the confidentiality and anonymity of respondents, fostering an environment conducive to obtaining honest and unbiased responses, particularly on sensitive research topics (Taherdoost, 2016). In essence, leveraging electronic questionnaires, such as Google Forms,

presents a pragmatic and practical approach for conducting research across diverse settings and populations.

The questionnaire was developed into two sections. The first section, "Section A," contained questions on participants' demographics and open-ended questions. Inquiries on age, gender, sales volumes, firm size, firm age, and industry type are captured under this section. The second part, titled "Section B," contains questions on the various variables in the study's model, which include asset specificity (AS), technological variations (TV), demand fluctuations (DF), supplier presence (SP), top management beliefs (TMB), and logistics outsourcing performance (LOP). All the variables were measured on a five-point Likert scale, from strongly disagree (1) to strongly agree (5).

4.6 Constructs measurement

The study operationalized six variables. They include the independent variables (asset specificity, technological variations, and demand fluctuations), moderators (supplier presence and top management beliefs), and the dependent variable (logistic outsourcing performance). Asset specificity was measured with four items from [Yuan et al. \(2020\)](#). For example: "If we use 3PL, they would have to make substantial investments in hardware tailored to our needs". Technological variation was evaluated using four items from [Yang et al. \(2016\)](#).

An example is, "We regularly evaluate and update our logistics technology to remain competitive in the market." Demand fluctuation was assessed with four items taken from [Yuan et al. \(2020\)](#). For example: "It is challenging to accurately forecast changes in demand for our logistics services." Supplier presence was measured with three elements from [Aziz et al. \(2020\)](#). An instance is "There are a sufficient number of reliable 3PLs who potentially could provide logistics services to us." Top management belief was evaluated with three elements adopted from [Yuan et al. \(2020\)](#).

An example is, "Our firm's senior management believes that logistics outsourcing will create a competitive arena for firms." Lastly, logistic outsourcing performance was measured with eight items taken from [Aziz et al. \(2020\)](#). For example: "We have increased control of logistics expenses."

The study introduced control variables that tend to impact the relationship between the independent, moderators, and dependent variables. The control variables included sales volume, firm size, age, and industry type.

4.7 Data collection procedure

The study relied on primary sources of information, with the researcher crafting a questionnaire using Google Forms. To facilitate data collection, a link to the questionnaire was generated and shared across various social media platforms, notably Google forms and Telegram. Before dissemination, approval was sought and obtained from some firms' management through email correspondence. Since the logistics managers had platforms, some helped share with their colleagues directly, and others shared on their platforms. The online survey spanned five weeks. Following the conclusion of the survey period, the researcher downloaded the Excel file containing the responses. A total of 302 responses were garnered; however, it was discovered that 37 needed to be completed upon review. Consequently, these incomplete responses were excluded from the dataset, leaving 265 completed responses. This equated to a commendable response rate of 88%.

4.8 Data analysis procedure

In this study, the collected responses underwent a systematic and structured coding, processing, and analysis process facilitated by utilizing statistical software packages, specifically SPSS version 26 and AMOS version 23 (Haardörfer, 2019). These software tools played a pivotal role in extracting meaningful insights from the data, thereby contributing to a deeper understanding of the relationships examined in the research. Initially, a demographic analysis was conducted to clearly represent the dataset's characteristics and discern any patterns within it. Subsequently, to ensure the internal consistency, reliability, and validity of the measurement model, an exploratory factor analysis (EFA) was performed (Brown & Moore, 2012). This EFA aided in deriving factor loadings, shedding light on the underlying structure of the data.

Furthermore, confirmatory factor analysis (CFA) was employed to bolster the validation of the measurement model. This analysis generated modification indices, composite reliability, average variance extracted, and Cronbach's alpha, offering a comprehensive assessment of the measurement model's validity and reliability (Hooper et al., 2008). Utilizing Structural Equation Modeling (SEM) in AMOS version 23, the study assessed the impact of the independent variable on the dependent variables. SEM is a robust statistical technique that quantifies the effects of one set of variables on another, providing a quantitative basis for understanding the dynamics within the research model (Kline, 2016). Additionally, hierarchical regression analysis was conducted to explore the moderating relationships between variables. This analysis facilitated an understanding

of the conditions under which the independent variables influenced the dependent variable (Hayes, 2018).

4.9 Ethical considerations

An important message conveyed to participants underscored the commitment to safeguarding their privacy. Participants were assured that all collected information would be confidential and not shared with any third party. The questionnaire was thoughtfully crafted to avoid posing personal questions that could cause discomfort or offense, reflecting sensitivity and respect for participants. Confidentiality and anonymity remained paramount, and participants were guaranteed that their involvement would not result in harm or negative consequences. Additionally, participants were informed that their participation in the study was entirely voluntary. They were not obligated to participate and could withdraw from the study at any time if they felt uncomfortable or no longer wished to participate.

4.10 Summary

This section employed a deductive quantitative methodology, focusing on the Jamaican logistics outsourcing landscape. The study population included logistics managers, deputies, and specialists from various industries outsourcing to third-party providers. Purposive sampling was used to select 265 participants, and data was collected through an electronic questionnaire using Google Forms. The research measured six variables: asset specificity, technological variations, demand fluctuations, supplier presence, top management beliefs, and logistics outsourcing performance. Data analysis involved exploratory and confirmatory factor analysis, structural equation modeling, and hierarchical regression analysis to examine the relationships between variables and the moderating effects of supplier presence and top management beliefs. Ethical considerations emphasized participant confidentiality and voluntary participation.

5. Results and discussion

This section of the study covers the results derived from the responses obtained from the research respondents. The results of the associations under consideration are presented in this chapter.

5.1 Demographic information of participants

Out of the 265 respondents, the majority of participants are male (178, 67.2%). Females are few, with 87 (32.8%) individuals, as shown in [Figure 5.1](#).

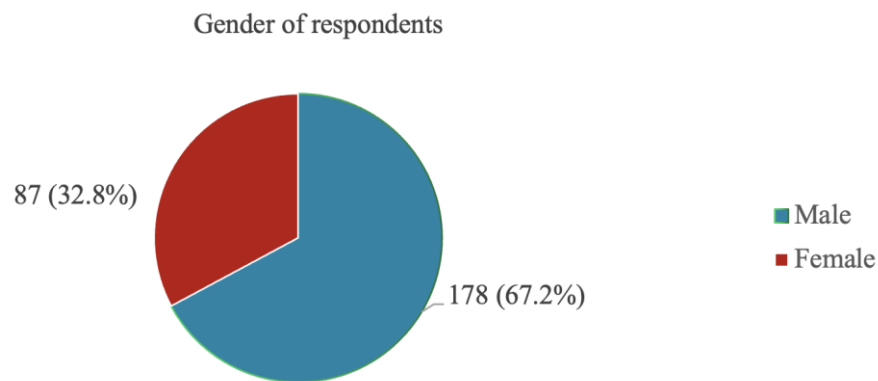


Figure 5.1 Gender distribution of participants

The majority, representing 44.9% (119), are between 30 and 39 years old. A reasonable majority are those within the 40 - 49 years age bracket 86 (32.5%). 37 (14%) and 23 (8.7%) are 50 years and above and below the 29-year age range. The results indicate the presence of mixed youthful and experienced participants within the firms engaged (See [Figure 5.2](#)).

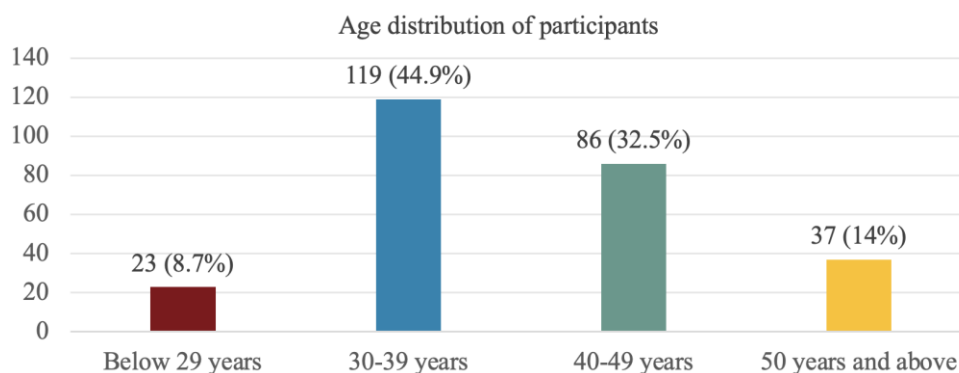


Figure 5.2 Age distribution of respondents

From Figure 5.3, most participants (90, 34%) indicated their firms make about JMD 1 million to less than JMD 5 million. 51 (19.2%) of participants stated their firms make about JMD 5 million to less than JMD 10 million. For 48 (18.1%), their companies earn less than JMD 1 million. 42 (15.8%) and 34 (12.8%) participants indicated that their firms make about JMD 10 million to less than JMD 50 million and JMD 50 million or more, respectively.

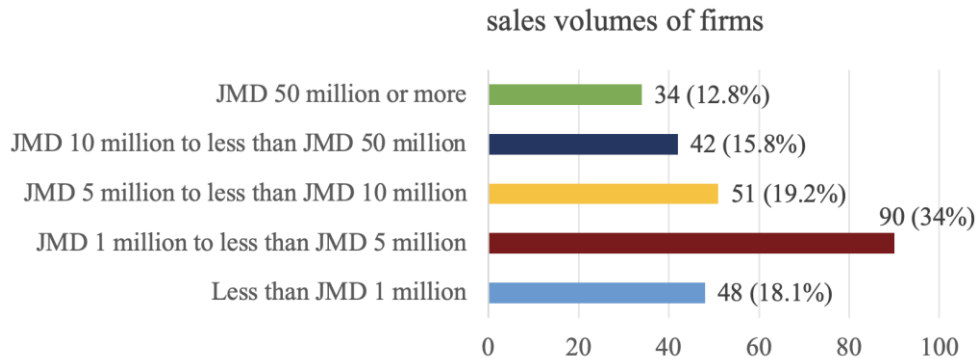


Figure 5.3 Sales volumes of participant's firms

From Figure 5.4, most respondents, comprising 103 (38.9%), work with firms with about 50-99 employees. More so, 64 (24.2%) of participants are engaged with companies with about 100-149 employees. In addition, 54 (20.4%) of respondents work with firms with less than 50 employees. 24 (9.1%) and 20 (7.5%) of participants work with firms with about 150-199 employees and 200 or more employees, respectively. This outcome indicates that the sample for the study encompasses small, medium, and large enterprises.

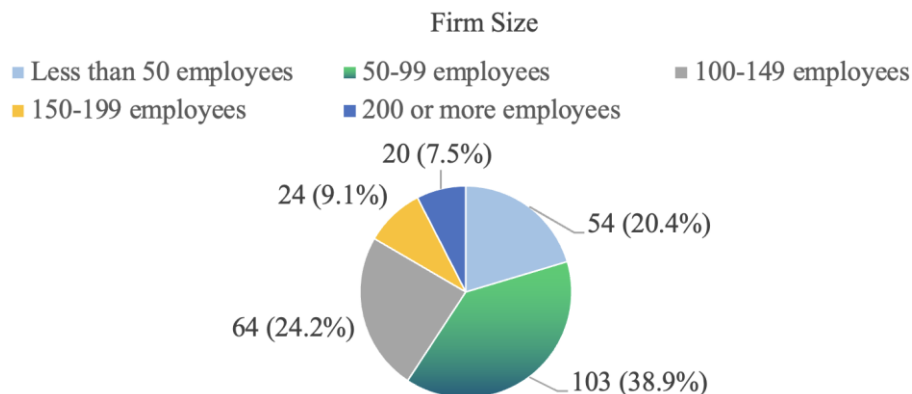


Figure 5.4 Firm sizes of participants

Furthermore, a significant number of participants, 107 (40.4%), indicated that their firms have existed for 6-10 years. More so, 78 (29.45) respondents asserted that their companies have existed for about 11-15 years. 47 (17.7%) and 33 (12.5%) of participants indicated that their firms have existed for about 1-5 years and 16 years and above, respectively (Figure 5.5).

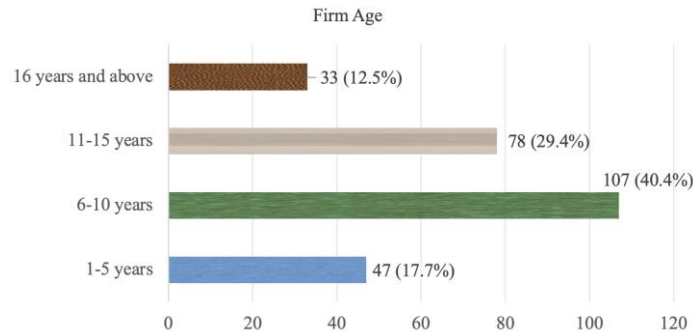


Figure 5.5 Firm ages of respondents

Finally, the researcher provides the industry profile of respondents, as presented in Figure 5.6. The output suggests that the study's respondents covered various industries. The majority, comprising 31 (11.7%) and 31 (11.7%), belong to the business and trade industries and textiles, apparel, and leather industries, respectively. A reasonable proportion of 25 (9.4%), 21 (7.9%), and 20 (7.5%) belong to the transportation and equipment industry, the food, beverages, alcohol, and cigars industry, the pharmaceutical and medical industry, and others, respectively. The least participants, 9 (3.4%), belonged to the printing and publishing industry (Figure 5.6).

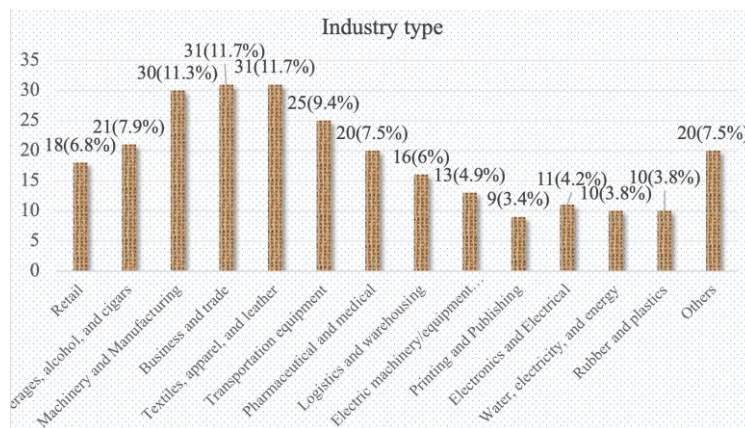


Figure 5.6 Industry profile of participants

5.2 Common method bias (CMB)

Addressing CMB is crucial in research to ensure the validity of findings. CMB arises when a single mode of assessment influences the measurement of multiple variables, often due to systematic errors introduced by the data collection method, such as self-report questionnaires. This bias, particularly same-source bias, can distort results (Podsakoff et al., 2012). Additionally, acquiescence bias, where respondents agree with survey statements without careful consideration, is a related concern. The researcher employed Herman's single-factor approach to assess CMB in our study, following Podsakoff et al.'s (2012) method. This approach evaluates if a single factor can explain a significant portion of covariance among measures. A large amount of CMB would mean that a single factor explains much of the variance in the measures. However, the analysis revealed that the first factor only accounted for 47.066% of the variance, indicating that CMB was not a significant issue (see Table 5.2). This finding enhances confidence in the reliability and validity of the research model, suggesting that shared method variance did not unduly influence variable measurement.

5.3 Assessment of measurement model

An Exploratory Factor Analysis (EFA) was carried out using SPSS, following the method outlined by Osborne (2015) to evaluate the structural validity of the measurement items. The EFA employed Principal Component Analysis with Varimax Rotation, as recommended by Schmitt (2011), to examine the appropriateness of item loadings for all constructs. The analysis aimed to achieve factor loadings (λ) exceeding 0.7, as Hair et al. (2019) advised. Specifically, the EFA explored the variables in the research model, which contains the dimensions of transaction attributes, i.e., Asset Specificity (AS), Technology Variation (TV), and Demand Fluctuation (DF). Other constructs included Supplier Presence (SP), Top Management Beliefs (TMB), and Logistic Outsourcing Performance (LOP). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO-MSA) was calculated to ascertain sample adequacy for the EFA. The results in Table 5.1 revealed a KMO-MSA value of 0.937, with a significant p-value of less than 0.001, indicating sufficient sample adequacy for the study. These findings suggest the appropriate conduct of the EFA and that the sample adequately represents the study population.

Table 5.1 Measure of sample adequacy

KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			.937
Bartlett's Test of Sphericity	Approx. Chi-Square		4776.420
	Df		325
	Sig.		.000

Following the EFA, the results unveiled six components with a collective eigenvalue of 17.871, elucidating a cumulative variance of 68.736% (refer to [Table 5.2](#)). Asset specificity emerged as the most significant contributor, delineating 37.575% of the variance, with an eigenvalue of 9.769%. Supplier presence and technology variation followed, contributing 10.091% (eigenvalue: 2.624%) and 6.012% (eigenvalue: 1.563%) of the variance, respectively. Demand fluctuation exhibited an eigenvalue of 0.921, explaining 3.543% of the variance, while top management belief accounted for 3.742% of the variance, with an eigenvalue of 0.973. Lastly, logistic outsourcing performance demonstrated the lowest explanatory variance at 1.292% and an eigenvalue of 0.336 (see [Table 5.2](#)).

Table 5.2 Total variance explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Var	Cum %	Total	% of Var	Cum %	Total
1	12.237	47.066	47.066	9.769	37.575	37.575	6.253
2	2.133	8.204	55.269	1.563	6.012	43.587	4.448
3	1.014	3.901	59.171	.921	3.543	47.130	1.911
4	.917	3.528	62.699	2.624	10.091	57.221	1.829
5	.788	3.029	65.728	.973	3.742	60.963	1.388
6	.782	3.008	68.736	.336	1.292	62.255	.357

Moreover, the initial findings of the EFA demonstrated that all measurement items met the established threshold of $\lambda > 0.7$, in line with the guidelines proposed by [Hair et al. \(2019\)](#). The researcher retained all measuring items, as indicated in [Table 5.3](#), without deletion. All measuring items of asset specificity (AS1-AS4), technology variation (TV1-TV4), demand fluctuation (DF1-

DF4), supplier presence (SP1-SP3), top management beliefs (TMB1-TMB3), and logistic outsourcing performance (LOP1-LOP8) were all kept because they met the standard. All the items in Table 5.3 showed the proper factor loading beyond the threshold value of 0.7.

Table 5.3 Rotated component matrix (EFA Loadings)

	Component					
	1	2	3	4	5	6
AS1	.773					
AS2	.814					
AS3	.876					
AS4	.944					
TV1		.816				
TV2		.742				
TV3		.884				
TV4		.748				
DF1			.767			
DF2			.716			
DF3			.810			
DF4			.813			
SP1				.754		
SP2				.901		
SP3				.835		
TMB1					.862	
TMB2					.724	
TMB3					.860	
LOP1						.871
LOP2						.755
LOP3						.807
LOP4						.880
LOP5						.751
LOP6						.805
LOP7						.890
LOP8						.961

Note: n=265. AS = asset specificity; TV = technology variation; DF = demand fluctuation; SP = supplier presence; TMB = top management beliefs; LOP = logistic outsourcing performance.

Additionally, the research conducted confirmatory factor analysis (CFA) in AMOS v.23 to evaluate the reliability and validity of the measurement model. This analysis utilized statistical measures such as Cronbach's Alpha (α), Average Variance Extracted (AVE), Composite Reliability (CR), and the square root of the AVE to assess convergent and discriminant validity. The reliability of the data, indicative of its consistency and dependability, was assessed using Cronbach's Alpha (Taber, 2018). A Cronbach's Alpha value surpassing 0.7 signifies robust reliability (Hair et al., 2011). The results in Table 5.2 show that top management belief (TMB) achieved $\alpha = 0.858$. Asset specificity (AS) obtained $\alpha = 0.907$. Demand fluctuation (DF) recorded $\alpha = 0.855$. Technology variation (TV) produced an $\alpha = 0.875$. Supplier presence (SP) showed an $\alpha = 0.870$. Lastly, logistic outsourcing performance (LOP) recorded an $\alpha = 0.954$. These results, as presented in Table 5.4, fall within the acceptable range, confirming the reliability of the collected data.

Table 5.4 Reliability and validity output

	CR	AVE	α	TMB	AS	TV	DF	SP	LOP
TMB	0.857	0.668	0.858	0.817					
AS	0.909	0.833	0.907	0.277	0.913				
TV	0.877	0.641	0.875	0.560	0.488	0.801			
DF	0.856	0.599	0.855	-0.273	0.134	0.321	0.774		
SP	0.872	0.695	0.870	0.159	0.190	0.465	0.153	0.834	
LOP	0.953	0.717	0.954	0.402	0.268	0.432	-0.261	0.353	0.847

Furthermore, during the assessment of convergent validity, the CR, with a threshold exceeding 0.7 (Hair Jr et al., 2014), and the AVE, with an acceptable threshold of over 0.5 (Hair Jr et al., 2014), were found to meet the criteria. The CR values for the constructs surpassed 0.7, ranging from 0.857 to 0.953. Additionally, the AVE values for the constructs exceeded 0.5, ranging from 0.599 to 0.833. These findings suggest that each construct in the survey fulfills the criteria, indicating no concerns regarding the reliability of the scaled items. Moreover, the researcher evaluated the discriminant validity of the model using the Fornell-Larcker approach. According to this approach, Table 5.4 illustrates that for every pair of variables, the square root of the AVE (highlighted in bold diagonally) surpasses their absolute correlation value (Fornell & Larcker, 1981). As per the general guideline, if the correlation value(s) is lower than the square

root of the AVE value, it confirms discriminant validity, signifying the distinctiveness of items from one construct compared to items in other constructs (Henseler et al., 2015). Please refer to Table 5.4 for details.

Finally, the researcher assessed the model fit indices (MFI) to determine the fit between the theory and the data. The results were compared against the acceptable ranges Hair (2021) and Kline (2016) established. The acceptable ranges include CMIN/DF = 5.00, CFI= 0.90, GFI= 0.90, TLI= 0.90, IFI= 0.90, and RMSEA = 0.08. Importantly, all MFI values fell within acceptable ranges except for GFI, indicating no issues with model fit. (CMIN(χ^2) = 516.456, df=247, χ^2 /df=2.091, CFI=0.967, NFI=0.921, TLI=0.940, GFI=0.903, SRMR=0.025, RMSEA=0.015 (see Figure 5.7).

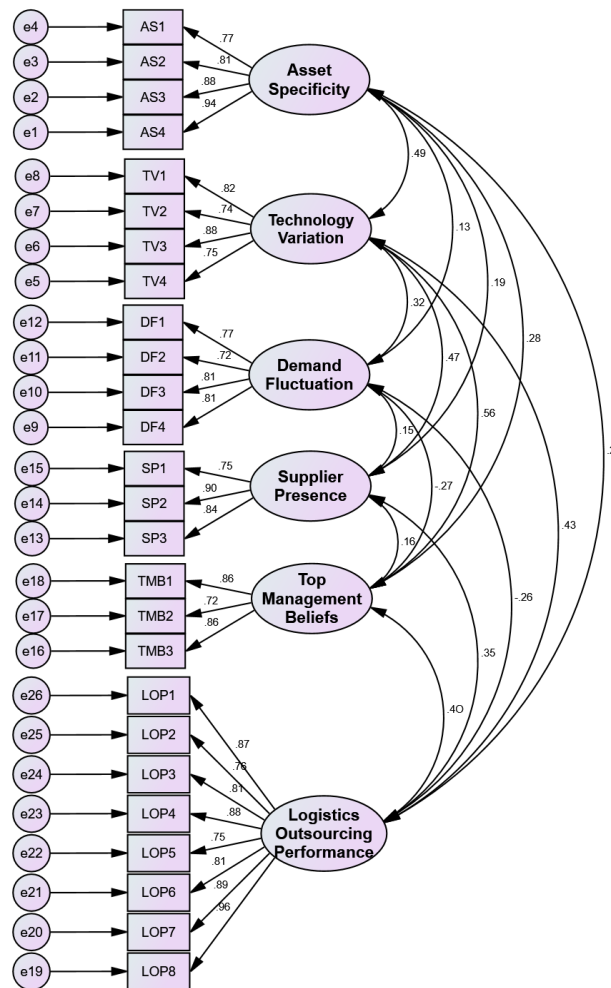


Figure 5.7 CFA Loadings from AMOS

5.4 Empirical results analysis

This study section presents the empirical data analysis concerning the hypothesized relationships. The data evaluation utilized two primary statistical approaches: the structural equation model (SEM) in AMOS version 23 software. The SEM approach was utilized to assess the direct effects by employing unstandardized regression weights.

The researcher started by exploring the direct influence of the dimensions of transaction attributes, namely 3PL asset specificity, logistic technology variations, and logistic demand fluctuations. The results from AMOS showed a good fit for the model employed with the statistics: $\chi^2 = 451.686$, $df=247$, $\chi^2/df=1.829$, $CFI=0.962$, $NFI=0.938$, $TLI=0.956$, $GFI=0.888$, $SRMR=0.031$, $RMSEA=0.029$. Moreover, the model accounted for 0.56 (56%) variance in logistic outsourcing performance.

The results of the direct effect of 3PL asset specificity, logistic technology variations, and demand fluctuations can be found in [Table 5.5](#) and [Figure 5.8](#). The outcome reveals that asset specificity significantly influences logistic outsourcing performance ($\beta = 0.312$, $CR = 5.115$, $p < 0.001$). This suggests that when 3PL asset specificity increases by a percentage or a unit, it would result in a 31.2% increase logistic outsourcing performance. This change is also significant. Furthermore, the result indicates that logistic technology variation positively and significantly influences logistic outsourcing performance ($\beta = 0.385$, $CR = 14.259$, $p < 0.001$). This result implies that a unit rise in technology variation would manifest in a 38.5% increase in logistic outsourcing performance. Lastly, the outcome showed that demand fluctuation negatively and significantly affects logistic outsourcing performance ($\beta = -0.234$, $CR = -21.273$, $p < 0.001$). The outcome suggests that an increase in demand fluctuation results in a 23.4% decrease in logistic outsourcing performance. This reduction is significant. Based on the results, H1, H2, and H3 were all supported.

Table 5.5 Regression Weights of the direct relationships involving the dimensions of transaction attributes and logistic outsourcing performance

Hypotheses	Explanatory Path	Estimate	S.E.	C.R.	P	Decision
H1	LOP <--- AS	.312	.061	5.115	***	Retained
H2	LOP <--- TV	.385	.027	14.259	***	Retained
H3	LOP <--- DF	-.234	.011	-21.273	***	Retained
	LOP <--- Industry	.000	.007	-.052	.958	
	LOP <--- Firm Age	-.031	.028	-1.111	.266	
	LOP <--- Firm Size	-.006	.022	-.284	.776	
	LOP <--- Sales Volume	.003	.020	.176	.860	

Note: * p < 0.05, **p < 0.01, *** p < 0.001. LOP = logistic outsourcing performance; AS = asset specificity; TV = technology variation; DF = demand fluctuation.

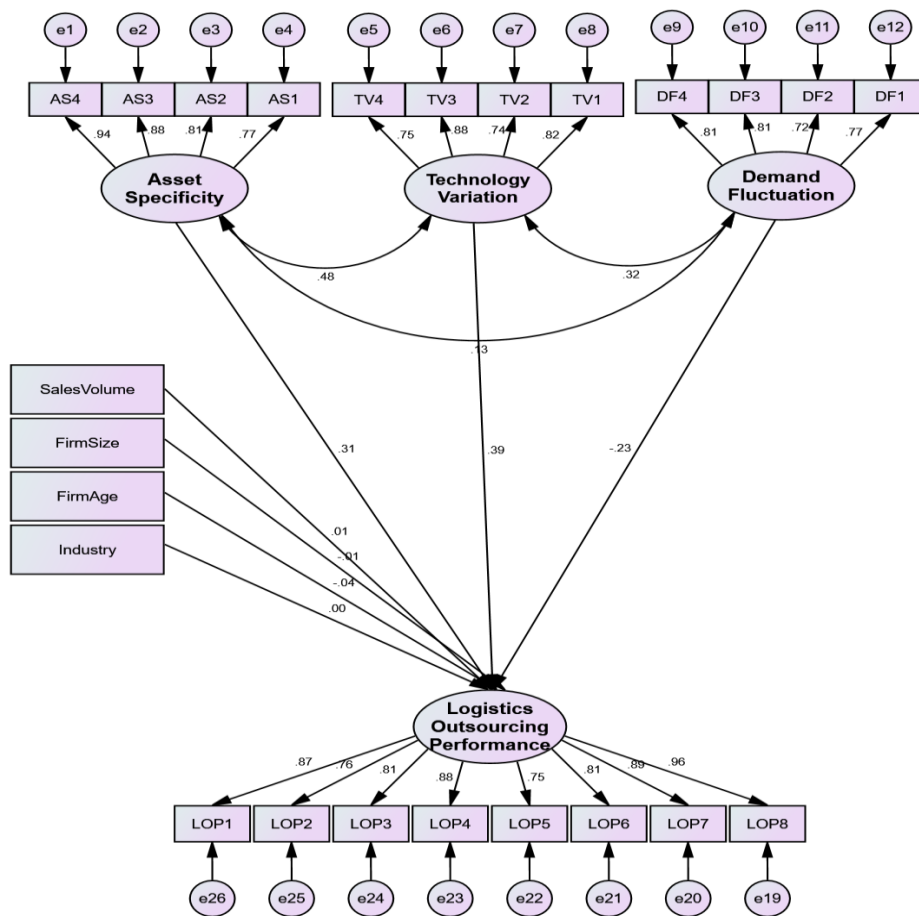


Figure 5.8 Direct effects of the dimensions of transaction attributes on logistic outsourcing performance

5.5 The moderation analysis

In the moderation analysis, the researcher examined the potential influence of a third variable on the relationship between two other variables (Hayes, 2018). Specifically, the study investigated how the strength or direction of the relationship between the independent variables (asset specificity, technology variation, and demand fluctuation) and the dependent variable (logistic outsourcing performance) might vary depending on the level of the moderating variables (supplier presence and top management beliefs). This analysis helps to understand the conditions under which the relationship between the independent and dependent variables may be strengthened, weakened, or remain unchanged. The researcher utilized hierarchical regression analysis to assess the moderating effect. The product term's linear regression coefficient estimates the change level between the IVs and the DV. The product term is deemed the “interaction term” or the “observed effect” of the moderator on the relationship between IV and DV (Hayes, 2018). The study controlled for sales volume, firm size, firm age, and industry type.

The researcher began by testing the moderating effect of supplier presence on the relationship between 3PL asset specificity and logistic outsourcing performance. The results, as estimated in model 3 in Table 5.6, indicate that the interaction term between 3PL asset specificity and supplier presence (AS x SP) had a positive and significant influence on logistic outsourcing performance ($\beta = 0.161$, $t = 5.552$, $p < 0.001$). Moreover, the change in R-square (0.032) was also significant at $p < 0.05$. The two-way interaction effect is graphically represented in Figure 5.9. Given the significance of the interaction term, the slopes suggest that as supplier presence increases, the positive impact of 3PL asset specificity on logistic outsourcing performance also increases. At the lower supplier presence, the effect of 3PL asset specificity on logistic outsourcing performance will be low. Given the outcome, H4 was accepted.

Table 5.6 Results of the moderating effect of supplier presence in the relationship between asset specificity and logistic outsourcing performance

Variables	Logistic Outsourcing Performance (LOP)					
	Model 1		Model 2		Model 3	
	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.955***	.195	.680***	.180	1.186**	.379
Control variables						
Sales volume	.073	.033	.014	.019	.013	.018
Firm size	.063	.038	-.008	.022	.003	.021
Firm age	-.085	.047	.000	.027	-.006	.026
Industry type	-.009	.011	.005	.006	.003	.006
Independent variables						
Asset specificity			.314***	.037	.429***	.017
Supplier presence			.514***	.037	.225*	.099
AS x SP					.161***	.029
R ²	0.045		0.291		0.323	
▲R ²	0.045*		0.246***		0.032*	
Adjusted R ²	0.031		0.283		0.316	
F	3.077		96.017		96.028	

Note: n=265, * p < 0.05, **p < 0.01, *** p < 0.001. AS = asset specificity; SP = supplier presence

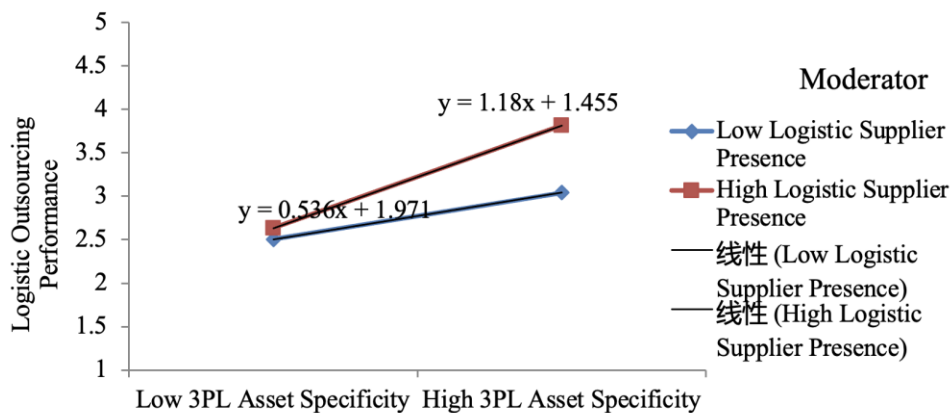


Figure 5.9 Logistic Supplier Presence strengthens the positive relationship between 3PL Asset Specificity and Logistic Outsourcing Performance.

Furthermore, the researcher tested the moderating effect of supplier presence on the nexus between technology variation and logistic outsourcing performance. Results in Table 5.7, as shown in Model 3, show there is a positive interaction between technology variation and supplier presence

(TV x SP) ($\beta = 0.129$, $t = 3.909$, $p < 0.001$). Moreover, the change in R-square (0.016) was also significant at $p < 0.001$. The significant interaction slope is represented graphically in [Figure 5.10](#). Given the significance of the interaction term, the slopes suggest that logistic supplier presence strengthens the positive relationship between logistic technology variations and logistic outsourcing performance. Given the results, H5 was accepted.

Table 5.7 Results of the moderating effect of supplier presence in the relationship between technology variations and logistic outsourcing performance

Variables	Logistic Outsourcing Performance (LOP)					
	Model 1		Model 2		Model 3	
	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.955***	.195	.601**	.182	-.894	.379
Control variables						
Sales volume	.073*	.033	.016	.019	.012	.018
Firm size	.063	.038	.012	.022	.014	.021
Firm age	-.085	.047	-.002	.027	-.006	.026
Industry type	-.009	.011	.001	.006	.000	.006
Independent variables						
Technology Variation			.361***	.042	.333*	.128
Supplier presence			.479***	.039	.514***	.119
TV x SP					.129***	.033
R ²	0.045		0.294		0.310	
▲R ²	0.045*		0.249***		0.016***	
Adjusted R ²	0.031		0.286		0.303	
F	3.077		97.318		90.067	

Note: n=265, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. TV = technology variation; SP = supplier presence

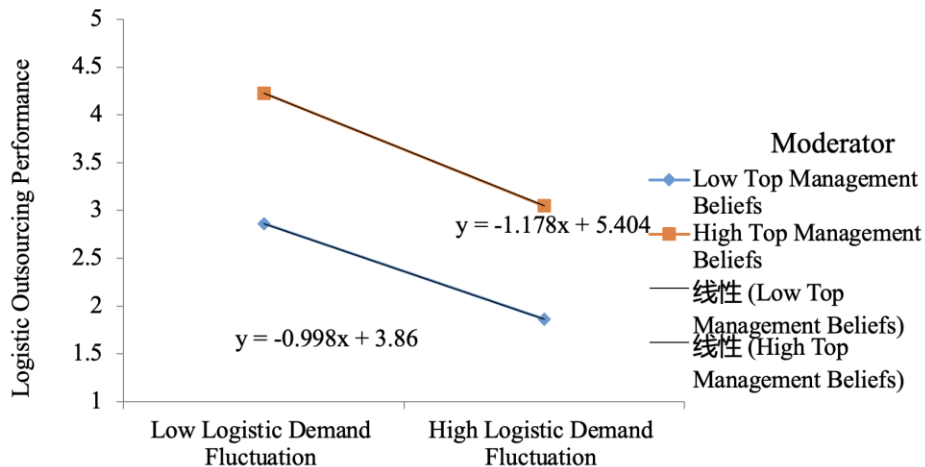


Figure 5.10 Logistic supplier presence strengthens the positive relationship between logistic technology variations and logistic outsourcing performance.

Additionally, the researcher tested the moderating effect of supplier presence on the relationship between demand fluctuations and logistic outsourcing performance. From [Table 5.8](#), the results, as captured in Model 3, show that the interaction term between demand fluctuation and supplier presence (DF x SP) had a significant influence on logistic outsourcing performance ($\beta = 0.109$, $t=3.516$, $p<0.001$). The results indicate that supplier presence moderates the negative nexus between demand fluctuation and logistic outsourcing performance. Moreover, the change in R-square (0.113) was also significant at $p<0.001$. The two-way interaction effect is graphically represented in [Figure 5.11](#). Given the significance of the product term, the slopes suggest that as supplier presence increases, the negative impact of demand fluctuation on logistic outsourcing performance is offset. At lower supplier presence, the effect of demand fluctuation on logistic outsourcing performance will be heightened. Given the results, H6 was accepted.

Table 5.8 Results of the moderating effect of supplier presence in the relationship between demand fluctuations and logistic outsourcing performance

Variables	Logistic Outsourcing Performance (LOP)					
	Model 1		Model 2		Model 3	
	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.955***	.195	.693	.169	-.573	.394
Control variables						
Sales volume	.073*	.033	.026	.018	.018	.018
Firm size	.063	.038	.013	.021	.012	.020
Firm age	-.085	.047	-.020	.026	-.026	.025
Industry type	-.009	.011	-.003	.006	-.003	.006
Independent variables						
Demand fluctuation			.445***	.043	-.383***	.117
Supplier presence			-.379***	.042	.265*	.116
DF x SP					.109***	.031
R ²	0.045		0.220		0.333	
▲R ²	0.045*		0.175***		0.113***	
Adjusted R ²	0.031		0.213		0.325	
F	3.077		110.325		100.601	

Note: n=265, * p < 0.05, **p < 0.01, *** p < 0.001. DF = demand fluctuation; SP = supplier presence.

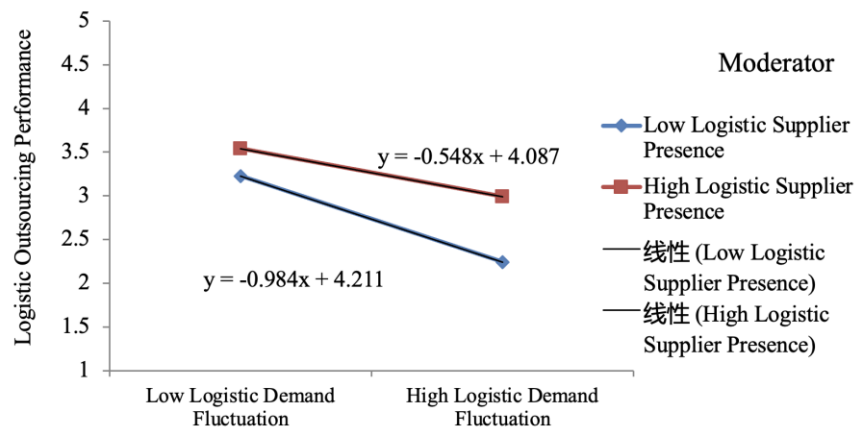


Figure 5.11 Logistic supplier presence dampens the negative relationship between logistic demand fluctuation and logistic outsourcing performance.

Moreover, the study explored the moderating role of top management beliefs on the association between asset specificity and logistic outsourcing performance. Deducing from [Table 5.9](#), the outcome as represented in Model 3 indicates that the product term between asset specificity

and top management belief (AS x TMB) had a significant positive effect on logistic outsourcing performance ($\beta = 0.119$, $t = 4.103$, $p < 0.001$). This outcome suggests that top management beliefs heighten the positive impact of 3PL asset specificity on logistic outsourcing performance. This effect is more significant at $p < 0.001$, given the change in R-square = 0.117. The two-way interaction effect is presented graphically in Figure 5.12. Given that the product term is significant, the slopes, as depicted in Figure 5.12, show that as top management beliefs increase or decrease, the effect of asset specificity on logistic outsourcing performance increases or decreases, respectively. On the back of this, H7 was accepted.

Table 5.9 Results of the moderating effect of top management beliefs in the relationship between asset specificity and logistic outsourcing performance

Variables	Logistic Outsourcing Performance (LOP)					
	Model 1		Model 2		Model 3	
	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.955***	.195	.799***	.164	-.629	.382
Control variables						
Sales volume	.073	.033	.007	.018	.008	.018
Firm size	.063	.038	-.029	.021	-.017	.020
Firm age	-.085	.047	-.025	.025	-.022	.025
Industry type	-.009	.011	.007	.006	.007	.006
Independent variables						
Asset specificity			.229***	.037	.494***	.119
TMB			.396***	.038	.368***	.098
AS x TMB					.119***	.029
R ²	0.045		0.226		0.343	
▲R ²	0.045*		0.181***		0.117***	
Adjusted R ²	0.031		0.219		0.336	
F	3.077		113.788		105.950	

Note: n=265, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. AS = asset specificity; TMB = top management beliefs.

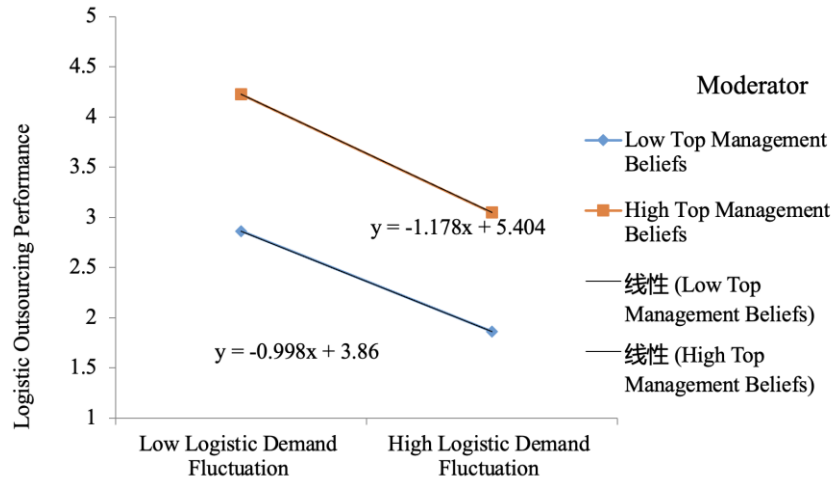


Figure 5.12 Top management beliefs strengthen the positive relationship between 3PL asset specificity and logistic outsourcing performance.

In addition, the researcher explored the moderating effect of top management beliefs on the nexus between technology variation and logistic outsourcing performance. Deducing from [Table 5.10](#), the outcome as stated in Model 3 indicates that the product term between technology variation and top management belief (TV x TMB) had a significant positive effect on logistic outsourcing performance ($\beta = 0.103$, $t = 3.326$, $p < 0.001$). This outcome suggests that top management beliefs amplify the positive impact of logistic technology variation on logistic outsourcing performance. This effect is more significant at $p < 0.001$, given the change in R-square = 0.111. The two-way interaction effect is presented graphically in [Figure 5.13](#). Given that the product term is significant, the slopes, as depicted in [Figure 5.13](#), show that as top management beliefs increase or decrease, the effect of technology variation on logistic outsourcing performance increases or decreases, respectively. As a result of this, H8 was accepted.

Table 5.10 Results of the moderating effect of top management beliefs in the relationship between technology variation and logistic outsourcing performance

Variables	Logistic Outsourcing Performance (LOP)					
	Model 1		Model 2		Model 3	
	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.955***	.195	.729***	.167	-.503	.403
Control variables						
Sales volume	.073	.033	.009	.018	.009	.018
Firm size	.063	.038	-.014	.020	-.010	.020
Firm age	-.085	.047	-.026	.025	-.025	.025
Industry type	-.009	.011	.004	.006	.004	.006
Independent variables						
Technology variations			.267***	.042	.350*	.122
TMB			.568***	.040	.614***	.111
TV x TMB					.103**	.031
R ²	0.045		0.228		0.339	
▲R ²	0.045*		0.183***		0.111***	
Adjusted R ²	0.031		0.221		0.332	
F	3.077		114.833		103.915	

Note: n=265, * p < 0.05, **p < 0.01, *** p < 0.001. TV = technology variation; TMB = top management beliefs.

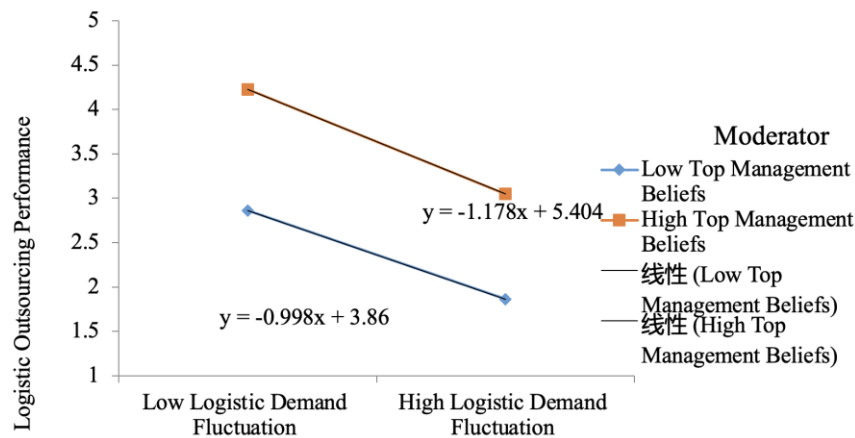


Figure 5.13 Top management beliefs strengthen the positive relationship between logistic technology variations and logistic outsourcing performance.

Lastly, the researcher tested the moderating effect of top management beliefs on the relationship between logistic demand fluctuations and outsourcing performance. Results in [Table 5.11](#), as shown in Model 3, show a negative and insignificant interaction between demand

fluctuation and top management beliefs (DF x TMB) ($\beta = -0.045$, $t = -1.500$, $p > 0.05$). This result implies that top management beliefs do not moderate the relationship between demand fluctuations and logistic outsourcing performance. The non-significant interaction slope is represented graphically in Figure 5.14. Given the insignificance of the interaction term, the slopes suggest that as top management belief increases or decreases, the negative impact of demand fluctuations and logistic outsourcing performance neither increases nor decreases. Given the results, H9 was rejected.

Table 5.11 Results of the moderating effect of top management beliefs in the relationship between demand fluctuation and logistic outsourcing performance

Variables	Logistic Outsourcing Performance (LOP)					
	Model 1		Model 2		Model 3	
	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.955***	.195	.619	.149	.095	.380
Control variables						
Sales volume	.073	.033	.015	.016	.014	.016
Firm size	.063	.038	-.011	.019	-.011	.018
Firm age	-.085	.047	-.033	.023	-.034	.023
Industry type	-.009	.011	.001	.005	.001	.005
Independent variables						
Demand fluctuations			-.386***	.038	-.544***	.112
TMB			.479***	.037	.637***	.112
DF x TMB					-.045	.030
R ²	0.045		0.277		0.279	
▲R ²	0.045*		0.232***		0.002	
Adjusted R ²	0.031		0.271		0.273	
F	3.077		149.541		129.115	

Note: n=265, * p < 0.05, **p < 0.01, *** p < 0.001. DF = demand fluctuation; TMB = top management beliefs.

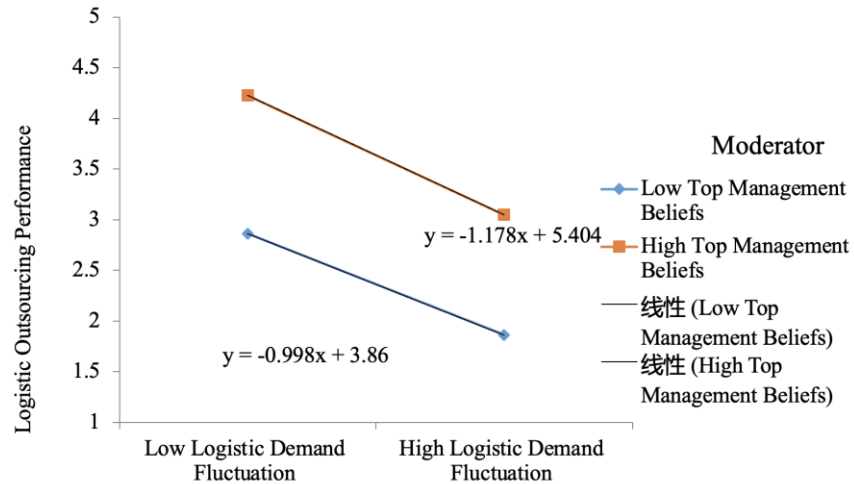


Figure 5.14 The insignificant moderating effect of top management beliefs on the relationship between demand fluctuation and logistic outsourcing performance.

5.6 Discussion of findings

5.6.1 The effect of transaction attributes on logistic outsourcing performance

The positive and significant effect of 3PL asset specificity on logistic outsourcing performance suggests that when third-party logistics providers (3PLs) possess specialized assets tailored to meet specific client needs, it enhances the overall performance of logistic outsourcing. This finding resonates with prior research indicating that higher levels of asset specificity lead to better performance outcomes in logistic outsourcing arrangements (Bulgurcu & Nakiboglu, 2018; Huo et al., 2018; Rodrigues et al., 2018). Firms benefit from improved service quality, increased efficiency, and enhanced responsiveness when 3PLs align their assets closely with client requirements (Huo et al., 2018a; Marchet et al., 2018).

In addition, technological variation's positive and significant influence on logistic outsourcing performance underscores the importance of leveraging technological advancements in logistics operations. Modern technologies such as GPS tracking, warehouse management systems, and predictive analytics enhance operational efficiency, reduce costs, and improve service quality in logistics outsourcing relationships (Cherian et al., 2023; Ecer, 2017). Therefore, firms that effectively utilize technology variations can gain a competitive advantage and achieve superior performance outcomes in their logistic operations (Choi et al., 2019; Tijan et al., 2019).

More so, the negative and significant effect of demand fluctuation on logistic outsourcing performance highlights the challenges of demand volatility in logistics operations. Fluctuations in

demand can disrupt supply chains, lead to inventory imbalances, and increase transportation costs, adversely impacting performance (Jafari et al., 2022; Vlachos & Polichronidou, 2024). This finding underscores the importance of implementing proactive strategies such as demand forecasting models, inventory optimization techniques, and flexible contractual agreements to mitigate the adverse effects of demand uncertainty and maintain optimal performance levels in logistic outsourcing (Barker et al., 2021; Vlachos & Polichronidou, 2024).

5.6.2 The moderating effect of logistic supplier presence on the relationship between transaction attributes and logistic outsourcing performance

Existing literature suggests that the presence and involvement of logistic suppliers can significantly influence the effectiveness of logistic outsourcing arrangements (Elia et al., 2018; Yaghoubi et al., 2020). When logistic suppliers are actively engaged and present throughout the outsourcing process, they can align their specialized assets more effectively with client needs, thereby enhancing logistic performance outcomes (Chen et al., 2020; Gultekin et al., 2022). As determined in this study, the moderation effect of supplier presence on the association between 3PL asset specificity and logistic outsourcing performance underscores the importance of collaborative relationships between clients and suppliers in optimizing logistic operations.

Moreover, the moderation effect of supplier presence on the nexus between technology variations and logistics outsourcing performance highlights the importance of supplier collaboration in harnessing the full potential of technology for logistic optimization. The presence of logistic suppliers can also play a crucial role in leveraging technology variations to improve logistic outsourcing performance (Elock Son et al., 2019). When suppliers are actively involved in technology adoption and implementation, they can enhance coordination, communication, and information sharing within the logistic network (Bag et al., 2020; Cichosz et al., 2020; Lai et al., 2018). This facilitates the integration of technological advancements into logistic processes, leading to efficiency gains and performance improvements (Zarbakhshnia & Jaghdani, 2018; Zhang et al., 2020).

Lastly, the moderation effect of supplier presence underscores the importance of supplier collaboration in building resilience and responsiveness in logistic operations. This suggests that the presence of logistic suppliers can help mitigate the adverse effects of demand fluctuations on logistic outsourcing performance. When suppliers are actively involved and responsive to changes in demand patterns, they can adapt their operations accordingly, ensuring timely and efficient

delivery of goods (Aziz et al., 2020; Ruiz-Torres et al., 2018; Świtła et al., 2018). By collaborating closely with suppliers, firms can leverage their expertise and resources to develop flexible and agile supply chains that respond effectively to demand fluctuations (Qureshi et al., 2017).

5.6.3 The moderating effect of top management beliefs on the relationship between transaction attributes and logistic outsourcing performance

The findings regarding the moderating effect of top management beliefs on the associations between 3PL asset specificity, technology variations, demand fluctuations, and logistic outsourcing performance offer valuable insights into the role of managerial perceptions and attitudes in shaping logistic operations.

The moderation effect of top management belief underscores the significance of leadership in driving alignment between strategic goals and operational practices in logistic operations. Prior research suggests that top management support and commitment are crucial for the success of logistic outsourcing initiatives (Chen et al., 2019; Zhu et al., 2017). When top management believes in the value and strategic importance of 3PL asset specificity, they are more likely to provide the resources, support, and guidance necessary to effectively implement and utilize specialized assets (Shraah et al., 2022). This fosters a conducive organizational environment that promotes collaboration, innovation, and performance improvement in logistic outsourcing relationships (Mandal, 2021; Shee et al., 2018).

Top management belief also plays a critical role in shaping the impact of technology variations on logistic outsourcing performance. When top management champions technological innovation and adoption, they create a culture of continuous improvement and adaptation within the organization (Khouri et al., 2018; Owuor & Zaman, 2019). This encourages exploring and implementing technological solutions that enhance efficiency, visibility, and coordination in logistic operations (Liu et al., 2019). The moderation effect of top management belief highlights the importance of visionary leadership in leveraging technology as a strategic enabler for logistic optimization and performance enhancement.

The finding that top management belief does not moderate the negative relationship between demand fluctuations and logistic outsourcing performance suggests that managerial attitudes may have limited influence on mitigating the effects of demand uncertainty. While top management support is essential for implementing responsive strategies and building resilient supply chains (Doratiotto et al., 2023; Simon et al., 2021), demand fluctuations often present inherent challenges

that require systemic adaptations and operational agility beyond managerial influence. Therefore, the absence of a moderation effect underscores the complexity and multifaceted nature of addressing demand variability in logistic outsourcing arrangements.

5.7 Summary

This section investigates the impact of transaction attributes (asset specificity, technology variation, and demand fluctuation) on logistic outsourcing performance in Jamaican firms. It also examines the moderating roles of supplier presence and top management beliefs. The results show that 3PL asset specificity and technology variation positively influence outsourcing performance, while demand fluctuation has a negative effect. Supplier presence acts as a moderator, strengthening the positive relationships between asset specificity, technology variation, and outsourcing performance, and mitigating the negative impact of demand fluctuation. Top management beliefs also moderate the positive relationships between asset specificity and technology variation with outsourcing performance, but do not affect the relationship with demand fluctuation. This study contributes to transaction cost theory and supplier relationship management literature by highlighting the importance of transaction-specific factors, supplier collaboration, and managerial perceptions in shaping logistic outsourcing performance.

6. Conclusion, implications, and limitations

This section of the study encompasses the findings obtained from the previous chapter on the role of supplier presence and top management beliefs on the effect of transaction attributes on logistic outsourcing performance. Given the findings, the researcher draws its conclusion in this chapter with appropriate recommendations.

6.1 Summary of findings (Inferences Results)

The summary of the relevant findings is captured below.

- (1) 3PL asset specificity positively and significantly affects logistic outsourcing performance among Jamaica firms.
- (2) Technology variation positively and significantly influences logistic outsourcing performance among Jamaica firms.
- (3) Demand fluctuation negatively and significantly affects logistic outsourcing performance among Jamaica firms.
- (4) Logistic supplier presence moderates the association between 3PL asset specificity and logistic outsourcing performance.
- (5) Logistic supplier presence moderates the association between technology variations and logistic outsourcing performance.
- (6) Logistic supplier presence moderates the relationship between demand fluctuations and logistic outsourcing performance.
- (7) Top management belief moderates the association between the 3PL asset specificity and logistic outsourcing performance.
- (8) Top management belief moderates the nexus between technology variations and logistic outsourcing performance.
- (9) Top management belief did not moderate the negative relationship between demand fluctuations and logistic outsourcing performance.

6.2 Conclusion

The findings of this study provide valuable insights into the complex interplay between transaction attributes, supplier presence, top management beliefs, and logistic outsourcing performance in the context of Jamaican firms. The results suggest that several transaction attributes, including 3PL asset specificity, technology variations, and demand fluctuations, significantly influence logistic outsourcing performance among these firms. Specifically, the positive and

significant effects of 3PL asset specificity and technology variations highlight the importance of specialized assets and technological capabilities in enhancing outsourcing performance, aligning with the principles of transaction cost theory.

Moreover, the negative and significant effect of demand fluctuations underscores the challenges posed by uncertain demand patterns on outsourcing performance, emphasizing the need for adaptive strategies to manage demand volatility effectively. Interestingly, logistic supplier presence emerges as a crucial moderating factor, influencing the relationships between transaction attributes and outsourcing performance. The moderation effect of supplier presence suggests that solid supplier relationships buffer the negative impact of transaction-specific challenges and enhance the benefits of outsourcing partnerships.

Lastly, the role of top management beliefs as moderators adds another layer of complexity to the relationship between transaction attributes and outsourcing performance. While top management beliefs moderate the associations between 3PL asset specificity and technology variations with outsourcing performance, they do not significantly influence the relationship between demand fluctuations and outsourcing performance. This finding highlights the importance of managerial perceptions and attitudes in shaping outsourcing decisions and outcomes.

6.3 Theoretical implications

The theoretical implications of this study extend across multiple domains, shedding light on the intricate relationships between transaction attributes, supplier presence, top management beliefs, and logistic outsourcing performance. The findings contribute to transaction cost theory (TCT) by providing empirical evidence of how transaction-specific factors, such as 3PL asset specificity, technology variations, and demand fluctuations, influence outsourcing performance. These results underscore the relevance of TCT in explaining the governance choices and performance outcomes in logistics outsourcing relationships, highlighting the importance of minimizing transaction costs and optimizing transaction-specific investments to achieve favorable performance outcomes.

Secondly, the study contributes to the literature on supplier relationship management (SRM) by highlighting the moderating role of logistic supplier presence in shaping the relationship between transaction attributes and outsourcing performance. Strong supplier relationships can act as a buffer against transaction-specific challenges, enhancing the effectiveness of outsourcing partnerships. This emphasizes the strategic importance of fostering collaborative and long-term

supplier relationships, aligning with relational contracting and supply chain collaboration principles.

Furthermore, the study offers insights into the role of top management beliefs as moderators in outsourcing. The findings underscore the importance of managerial cognition and decision-making in shaping outsourcing strategies and outcomes by demonstrating how managerial perceptions influence the relationship between transaction attributes and outsourcing performance. This contributes to the broader literature on strategic management and organizational behavior by highlighting the role of managerial beliefs in shaping organizational responses to transaction-specific challenges.

Additionally, the study provides practical implications for logistics managers and practitioners in Jamaican firms. The findings offer actionable insights for optimizing outsourcing strategies and enhancing supply chain performance by identifying the critical transaction attributes and moderating factors that influence outsourcing performance. Practitioners can leverage these insights to manage supplier relationships strategically, invest in technology capabilities, and align top management beliefs with outsourcing objectives to achieve superior performance outcomes.

6.4 Practical implications

The practical implications of this study offer actionable insights for logistics managers and practitioners in Jamaican firms, guiding how to optimize outsourcing strategies and enhance supply chain performance. The findings underscore the importance of building strong and collaborative relationships with logistics suppliers. By fostering close partnerships and long-term agreements with suppliers, firms can leverage supplier presence to mitigate transaction-specific challenges and enhance the effectiveness of outsourcing arrangements. Practitioners should prioritize investments in supplier relationship management (SRM) practices, including regular communication, joint planning, and performance monitoring, to cultivate trust and collaboration with critical suppliers.

Secondly, the study highlights the strategic significance of investing in technology capabilities to support outsourcing performance. Given the positive influence of technology variations on logistic outsourcing performance, firms should prioritize investments in digital technologies, automation, and data analytics to improve operational efficiency, visibility, and decision-making within the supply chain. By leveraging technology solutions such as transportation management systems (TMS), warehouse management systems (WMS), and

predictive analytics tools, firms can enhance process optimization, inventory management, and demand forecasting, improving overall outsourcing performance.

Furthermore, the findings underscore the importance of aligning top management beliefs and perceptions with outsourcing objectives and strategies. Practitioners should actively involve top management in decision-making processes related to outsourcing, ensuring alignment with organizational goals, values, and priorities. Additionally, efforts should be made to provide training and education to top management to enhance their understanding of the benefits and challenges associated with outsourcing, fostering a supportive and proactive organizational culture towards outsourcing initiatives.

Moreover, the study emphasizes the need for proactive risk management strategies to address the negative impact of demand fluctuations on outsourcing performance. Firms should develop robust contingency plans, inventory management strategies, and supply chain resilience measures to mitigate the risks associated with uncertain demand patterns. This may include implementing flexible logistics networks, buffer inventory strategies, and agile production processes to adapt quickly to changing demand conditions and minimize disruptions to outsourcing operations.

6.5 Recommendations

Based on the findings of the study, the following recommendations are suggested for logistics managers and practitioners in Jamaican firms:

- (1) Foster Collaborative Supplier Relationships:** Prioritize building solid and collaborative relationships with logistics suppliers to leverage their presence and capabilities in enhancing outsourcing performance. Invest in supplier relationship management practices such as regular communication, joint planning, and performance monitoring to cultivate trust and collaboration with critical suppliers.
- (2) Invest in Technology Capabilities:** Allocate resources towards investing in technology solutions such as transportation management systems (TMS), warehouse management systems (WMS), and predictive analytics tools to improve operational efficiency, visibility, and decision-making within the supply chain. Leverage technology to optimize processes, enhance inventory management, and facilitate demand forecasting.
- (3) Align Top Management Beliefs:** Actively involve top management in decision-making processes related to **outsourcing**, ensuring alignment with organizational goals, values, and priorities. Provide training and education to top management to enhance their

understanding of the benefits and challenges associated with outsourcing, fostering a supportive and proactive organizational culture towards outsourcing initiatives.

- (4) Implement Proactive Risk Management Strategies:** Develop robust contingency plans, inventory management strategies, and supply chain resilience measures to mitigate the risks associated with demand fluctuations. Implement flexible logistics networks, buffer inventory strategies, and agile production processes to adapt quickly to changing demand conditions and minimize disruptions to outsourcing operations.
- (5) Monitor and Evaluate Outsourcing Performance:** Establish key performance indicators (KPIs) and metrics to monitor and evaluate the performance of outsourcing arrangements. Regularly assess the effectiveness of outsourcing strategies, supplier relationships, and technology investments against predefined performance targets and benchmarks. Use performance data to identify areas for improvement and inform strategic decision-making.
- (6) Continuously Improve Outsourcing Processes:** Foster a culture of continuous improvement within the organization by encouraging feedback, innovation, and learning from past experiences. Implement feedback mechanisms to solicit input from stakeholders, including suppliers, customers, and internal teams, to identify opportunities for process optimization and innovation in outsourcing operations.

6.6 Limitations and suggestions for future studies

While the study's findings provide valuable insights into the role of supplier presence and top management beliefs in shaping the relationship between transaction attributes and logistic outsourcing performance, several limitations should be acknowledged. Firstly, the study's focus on Jamaican firms may limit the generalizability of the findings to other geographical regions or cultural contexts. Future research could explore the applicability of the findings in diverse organizational settings to enhance the external validity of the results.

Secondly, the study relies on self-reported data collected through survey questionnaires, which may be subject to response bias, social desirability bias, and common method variance. Future studies could employ mixed-method approaches, incorporating qualitative interviews or observational methods to triangulate findings and provide a more comprehensive understanding of the phenomena under investigation to mitigate these limitations.

Additionally, the study's reliance on cross-sectional data limits the ability to establish causality or temporal relationships between variables. Future research could adopt longitudinal or experimental designs to examine the dynamic relationships between transaction attributes, supplier presence, top management beliefs, and outsourcing performance over time, allowing for stronger causal inferences.

Furthermore, while the study examines the moderating effects of supplier presence and top management beliefs on the relationship between transaction attributes and outsourcing performance, it does not explore potential mediating mechanisms underlying these relationships. Future studies could investigate mediating variables such as trust, collaboration, organizational culture, and strategic alignment to provide a more nuanced understanding of the processes through which transaction attributes influence outsourcing performance.

Lastly, the sample population of logistic managers, specialists, and deputy logistic managers may need to fully capture the perspectives of other key stakeholders involved in outsourcing decisions, such as senior executives, procurement officers, or external consultants. Future research could incorporate a broader range of stakeholders to gain insights into their roles, perceptions, and contributions to outsourcing strategies and outcomes.

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Sincerely,

Shemar Reid

Appendices

QUESTIONNAIRE FOR THE SURVEY

Dear Participant, I am a Master's student at Zhejiang Gongshang University and I invite you to participate in a survey aimed at understanding the role of supplier presence and top management beliefs on the effect of transaction attributes on logistic outsourcing performance among logistics firms in Jamaica. Your insights will help us gain valuable knowledge about the industry's current landscape and inform strategies for enhancing logistics operations in the region. Your responses will be kept confidential and used solely for research purposes. Your participation is voluntary, and you may withdraw at any time. The survey should take approximately 10 minutes to complete. Your input is crucial to the success of this study, and I appreciate your time and contribution. Thank you for your participation.

SECTION A - DEMOGRAPHICS AND OPEN-ENDED QUESTIONS

1. What is your gender?

Male	Female
1	2

2. What is your age?

Below 29 years	30-39 years	40-49 years	50 years and above
1	2	3	4

3. What is the approximate annual sales revenue of your firm in Jamaican dollars (JMD)? (sales volume)

Less than JMD 1 million	JMD 1 million to less than JMD 5 million	JMD 5 million to less than JMD 10 million	JMD 10 million to less than JMD 50 million	JMD 50 million or more
1	2	3	4	5

4. Indicate your firm size (number of employees)

Less than 50	50-99	100-149	150-199	200 or more
1	2	3	4	5

5. How long has your organization been in existence? – Firm Age

1-5 years	6-10 years	11-15 years	16 years and above
1	2	3	4

6. Please indicate the industry you are.

Retail	1
Food, beverages, alcohol, and cigars	2
Machinery manufacturing	3
Business and trade	4
Textiles, apparel, and leather	5
Transportation equipment	6
Pharmaceutical and medical	7
Logistics and warehousing	8
Electric machinery/equipment manufacturing	9
Electronics and Electrical	10
Printing and Publishing	11
Water, electricity, and energy	12
Rubber and plastics	13
Other	14

**SECTION B: FOR THE FOLLOWING SECTION, PLEASE SELECT YOUR ANSWER
ACCORDING TO THE GIVEN SCALE**

1= Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

No.	Asset Specificity (AS)					
1	If we use 3PL, they would have to make substantial investments in hardware tailored to our needs.	1	2	3	4	5
2	Compared to our competitors, our logistics facilities and service are relatively unique.	1	2	3	4	5
3	If we use 3PL, they would have to make substantial investments in hardware tailored to our needs.	1	2	3	4	5
4	Managing our logistics activities requires specifically trained employees.	1	2	3	4	5

No.	Technological Variations (TV)					
1	We believe that the technological obsolescence of our logistics activities needed by our firm cannot be predicted.	1	2	3	4	5
2	It is difficult to foresee and keep up with the development change in logistics technology.	1	2	3	4	5
3	We regularly evaluate and update our logistics technology to remain competitive in the market.	1	2	3	4	5
4	Technological advancements in logistics have significantly impacted our decision-making processes.	1	2	3	4	5

No.	Demand Fluctuations (DF)
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1	It is challenging to accurately forecast changes in demand for our logistics services.	1	2	3	4	5
2	Our logistics operations are flexible enough to adjust to sudden changes in demand.	1	2	3	4	5
3	We are able to quickly respond to changes in demand for our logistics services.	1	2	3	4	5
4	We collaborate closely with our clients to understand and respond to their changing logistics needs.	1	2	3	4	5
No.	Supplier Presence (SP)					
1	There are a sufficient number of reputable 3PLs who potentially could provide logistics services to us.	1	2	3	4	5
2	There are a sufficient number of trustworthy 3PLs who potentially could provide logistics services to us.	1	2	3	4	5
3	There are a sufficient number of reliable 3PLs who potentially could provide logistics services to us.	1	2	3	4	5

No.	Top Management Beliefs (TMB)					
1	The senior management of our firm believes that logistics outsourcing has the potential to provide significant business efficiency to the firm.	1	2	3	4	5
2	The senior management of our firm believes that logistics outsourcing will create a competitive arena for firms.	1	2	3	4	5
3	The senior management of our firm believes that logistics outsourcing has the potential to provide significant business benefits to the firm.	1	2	3	4	5

No.	Logistics Outsourcing Performance (LOP)					
1	We have been able to enhance logistics competence.	1	2	3	4	5
2	We have been able to gain access to skilled logistics personnel.	1	2	3	4	5
3	We have enhanced economies of scale in human resource.	1	2	3	4	5
4	We have enhanced economies of scale in logistics technological resource.	1	2	3	4	5
5	We have increased control of logistics expenses.	1	2	3	4	5
6	We have reduced the risk of logistics technological obsolescence.	1	2	3	4	5
7	We have increased access to key logistics technologies.	1	2	3	4	5
8	We have increased operational efficiency of using logistics technologies.	1	2	3	4	5