

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY KUMASI

**THE MODERATING ROLE OF INTER-ORGANISATIONAL RELATIONSHIP
MANAGEMENT ON THE RELATIONSHIP BETWEEN LOGISTICS
PROVIDER'S CAPABILITIES AND SUPPLY CHAIN PERFORMANCE OF
MULTINATIONAL COMPANIES**

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A THESIS SUBMITTED TO THE DEPARTMENT OF SUPPLY CHAIN AND INFORMATION
SYSTEMS OF THE KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI; INSTITUTE OF DISTANCE LEARNING IN PARTIAL FULFILMENT OF THE
REQUIREMENT FOR THE AWARD OF A DEGREE OF

MASTER OF SCIENCE: (LOGISTICS AND SUPPLY CHAIN MANAGEMENT)

NOVEMBER, 2022

DECLARATION

I hereby declare that, to the best of my knowledge, this thesis is the outcome of my unique effort toward the MSc in Logistics and Supply Chain Management and that, with the exception of instances where appropriate credit has been given in the text, it does not contain any material that has been published by another person or that has been accepted for the award of any other degree from the university.

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DEDICATION

I dedicate it to my family, who have given me unwavering support during my whole academic career. Especially to my late father Ex-Wo1 Isaac Oyorley Okpeyoe.

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ACKNOWLEDGEMENT

First and foremost, I want to express my honest appreciation to the Almighty God for providing me with strength and mercy throughout the course of my study and for the accomplishment of this task.

My supervisor, Dr. John Frimpong Manso, and his assistant deserve special thanks for their patience, care, and cooperation. Their knowledgeable suggestions and encouragement significantly encouraged me and helped to shape this study.

To the Officer in Charge (OIC) of the Yeji Camp Prison, CSP Odei Forson, I am sincerely grateful for the opportunity you gave me to expand my knowledge base and to seeing this study through to its final state. It's a rare privilege and I am honoured and grateful.

I will always be indebted to all of my professors, peers, family, and friends who, in a variety of ways, provided vital guidance, support, and contributions throughout this program.



ABSTRACT

Supply chains play a vital role in determining the profitability and sustainability of firms in today's fiercely competitive business environment. To obtain a competitive advantage, firms now strategically must manage their supply chains effectively and efficiently. This study's goal was to investigate how inter-organizational relationship management affected the link between the performance of multinational companies' supply chains and the capabilities of their logistics providers. 92 respondents working for multinational firms in Ghana were asked to complete a self-delivered and online questionnaire for a cross-sectional survey. With the help of a Structural Equation Model (SEM), the findings of the study revealed that logistics service provider (LSP) does not necessarily impact supply chain performance, inter-organisational relationship affects supply chain performance positively and inter-organisational relationship failed to moderate the relationship between logistics service provider and supply chain performance. The results demonstrate the complexity of supply chain management and the importance of taking into account a number of contextual variables when assessing the effects of LSP capabilities. The study also offers actual data to back up the association between inter-organizational relationship management and successful supply chains. It also emphasizes how crucial good inter-organizational relationship management techniques are to getting better supply chain results. To increase the efficacy of their supply chains, supply chain managers and practitioners should place a high priority on building and maintaining strong inter-organizational relationships.

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LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
CC	Collaborative Capabilities
CR	Composite Reliability
CA	Cronbach's Alpha
CRC	Customer Response Capabilities
EP	Efficiency Performance
FOC	Flexible Operations Capabilities
FP	Flexibility Performance
IC	Innovation Capabilities
IGR	Inter-organisational Relationship
LSP	Logistics Service Provider
MNC	Multi-national Corporation
RP	Reliability Performance
SCP	Supply Chain Performance

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CHAPTER ONE

INTRODUCTION

1.1 Study Background

Supply chains play a crucial role in shaping the profitability and sustainability of firms in today's fiercely competitive business environment. For companies to obtain a competitive advantage, efficient and effective supply chain management has become a strategic priority (Christopher, 2016). Logistics service providers and their competencies are among the major variables affecting supply chain performance. Logistics providers, as intermediaries within supply chains, offer specialized services and expertise to facilitate the movement of goods, information, and resources across various stages of the supply chain (Liu, Wei, & Chang, 2015). Their capabilities, such as transportation management, warehousing, inventory control, and information technology systems, significantly impact the overall performance of supply chains (Mangan, Lalwani, & Butcher, 2016). However, the influence of logistics providers' competences on supply chain performance is not straightforward. Several contextual factors, both interior and exterior to the organization, can moderate this relationship. One such contextual factor is inter-organisational management, which refers to the harmonisation and collaboration between multiple organizations within a supply chain (Kleindorfer, Singhal, & Wassenhove, 2005).

Between supply chain partners, including logistics providers and other companies like manufacturers, suppliers, and distributors, inter-organisational management includes activities like information sharing, group decision-making, and resource integration (Zacharia, Nix, & Lusch, 2009). In order to improve activity coordination and integration, effective interorganisational management can improve the movement of data, resources, and knowledge throughout the supply chain (Li, Li, & Sun, 2017).

The purpose of this study is to examine the moderating effect of inter-organizational management on the link between supply chain performance and the capacities of logistics providers. We may learn more about the complex dynamics of supply chain management and develop methods to boost overall performance by looking at how inter-organizational management practices affect the effect of logistics providers' skills on supply chain performance.

To achieve this goal, first, a comprehensive review of existing literature will be conducted to identify the key capabilities of logistics providers and the dimensions of inter-organisational management. Subsequently, primary data will be collected through surveys from a sample of multinational organizations operating in diverse industries. The data will be analyzed using advanced statistical techniques to determine the moderating effect of inter-organisational management on the relationship between logistics provider's capabilities and supply chain performance.

The findings of this research will contribute to both theoretical and practical domains. Theoretically, it will enhance our understanding of the dynamic nature of supply chain management and provide insights into the role of inter-organisational management in influencing supply chain performance. Practically, the study will offer valuable recommendations for organizations to optimize their supply chain operations by leveraging the capabilities of logistics providers while effectively managing inter-organizational relationships. In conclusion, the goal of this study is to clarify how inter-organizational management affects the relationship between supply chain performance and the capabilities of logistics providers. We may learn important lessons from this connection that will help firms improve the efficiency of their supply chains, obtain a competitive advantage, and achieve long-term success in the fast-paced business world of today.

1.2 Research Problem

It is commonly acknowledged that in order for enterprises to achieve operational excellence and obtain a competitive advantage, the relationship between the capabilities of the logistics provider and the performance of the supply chain is essential (Mangan et al., 2016). The moderating function of inter-organizational management in this relationship, however, is not fully addressed in the extant literature. As a result, there is a lack of knowledge about how efficient inter-organizational management methods affect how well logistics providers perform their roles in the supply chain.

While logistics providers possess capabilities such as transportation management, warehousing, and information systems, the effectiveness of these capabilities may vary depending on the level of coordination and co-operation with other supply chain allies (Zacharia et al., 2009). The performance of the supply chain as a whole may be strongly impacted by inter-organisational management strategies, such as resource integration, information exchange, and shared decision-making (Li et al., 2017). The influence of interorganisational management in modulating the relationship between logistics provider capabilities and supply chain performance, however, has not been thoroughly investigated empirically. The studies that are now available mainly concentrate on either interorganizational management practices or logistical skills separately without taking into account how both may affect supply chain performance.

Organizations looking to optimize their supply chain operations must comprehend the moderating role of inter-organizational management. Organizations can take advantage of the capabilities of logistics providers to improve the overall performance of the supply chain by managing relationships with logistics providers and other supply chain partners effectively.

However, little is known about the precise mechanisms through which inter-organizational management affects the link between supply chain performance and the capacities of logistics providers.

Therefore, in-depth research is required to examine how inter-organisational management affects the relationship between supply chain performance and the capacities of logistics providers. This study would contribute to both theory and practice by providing a deeper understanding of the complex dynamics within supply chains and offering practical insights for organizations to optimize their supply chain performance by effectively managing interorganizational relationships.

1.3 Study Objectives

The study's main goal is to investigate how inter-organizational relationship management influences the relationship between supply chain performance and the capabilities of logistics providers using a case study of multinational corporations in Ghana. The study is focused on three distinct goals that include the following in order to effectively address the aforementioned objective:

- i. To examine the influence of logistics provider's capabilities on supply chain performance of multinational companies.
- ii. To determine the influence of inter-organisational relationship management on supply chain performance of multinational companies.
- iii. To examine the moderating role of inter-organisational relationship management on the relationship between logistics provider's capabilities and supply chain performance of multinational companies.

1.4 Study Questions

Inferring from the study's goals, it aims to respond to the following research inquiries:

- i. How does logistics provider's capabilities influence supply chain performance of multinational companies?
- ii. How does inter-organisational relationship management impact on supply chain performance of multinational companies?
- iii. What is the moderating effect of inter-organisational relationship management on the relationship between logistics provider's capabilities and supply chain performance of multinational companies?

1.5 Study's Justification

Numerous advantages and contributions of the current study are available to participants in academia and industry. The conduct of this study is necessary for it will aid policy makers, industry players and academic actors in varied ways.

First off, by exploring the moderating influence of inter-organisational management in the link between the skills of the logistics provider and the performance of the supply chain of multinational organizations, this study addresses a research gap.

The study's results would also have important practical ramifications for businesses operating in sectors with complex supply chains. Organizations may create more effective strategies to improve their supply chain operations by recognizing the critical variables that affect supply chain performance and comprehending how inter-organizational management practices can control these interactions. This can lead to improved customer satisfaction, reduced costs, enhanced responsiveness, and ultimately, a competitive advantage in the market.

Furthermore, the study will equally drive policy makers in terms of investigating the moderating role of inter-organisational management, this study would provide valuable insights into how organizations can optimize their supply chain performance. Organizations would be able to identify areas for improvement and implement targeted strategies, which would improve policy making, if they understood how inter-organizational management practices can strengthen or weaken the relationship between the capabilities of logistics providers and supply chain performance.

Finally, by addressing the research gap on the moderating impact of inter-organisational management in the relationship between logistics provider capabilities and supply chain performance, this study would add to the body of existing knowledge. This study deepens our understanding of supply chain management and advances the field's development of pertinent theories and frameworks by offering empirical data and theoretical insights.

1.6 Research Methodology

The research methodology focuses on how the research topic is answered. The study answered the research topic using cross-sectional design for data from multinational companies within the Ghanaian setting using survey questionnaire.

Regarding research approach, quantitative research approach was utilised since it yielded the most desired outcome considering the study's research objectives. As indicated, questionnaire was self-delivered to and retrieved from top managers within focused organizations by faceto-face mode.

This quantitative study's data analysis part included a methodical technique to extract useful insights from the numerical data gathered. Key attributes were enumerated using descriptive statistics after the dataset had been cleaned and preprocessed to assure accuracy. Then, with a significance threshold of 0.05, hypotheses were tested using the proper statistical techniques,

such as regression analysis. Tables and graphs were used to display the results, together with p-values and effect sizes. These findings were interpreted in light of the research topics and in relation to the body of prior research. The validity and reliability of the analysis were discussed, as well as limitations such sample size issues. The study's results were examined in terms of their consequences and relevance in real-world settings while also offering suggestions for further research.

1.7 Study's Scope

The goal of the study was to investigate how inter-organizational management influences the performance of multinational corporations' supply chains in relation to the capabilities of their logistics providers. The study specifically identified the relationship between the capabilities of the logistics provider and the performance of the supply chain, as well as the relationship between inter-organisational management and supply chain performance and the moderating effect of inter-organisational management in this relationship. Contextually, the study focuses on the multinational companies with all industries within a developing economies – Ghana. As a result, data was gathered from multinational corporations doing business within Ghana's territorial jurisdiction in order to provide pertinent and reliable conclusions.

1.7 Study's Limitations

It is expected that this research is likely to encounter diverse challenges, which may hinder the study's findings in distinct ways. Key among the limitations was;

Sample Size: A small sample size could limit how broadly the results can be applied to a bigger population. The statistical power of the study may be impacted by small sample numbers, making it more challenging to find significant impacts.

Non-Response Bias: The results may be distorted due to discrepancies between respondents and non-respondents if a significant portion of participants do not respond to surveys or data collection attempts.

Time Restrictions: The study may not be able to fully explore the research questions or gather an extensive dataset due to time restrictions on data collecting or processing.

Contextual Factors: The particular environment in which the study was conducted may have restricted the findings' applicability to other environments or epochs.

Data Availability: The study's ability to evaluate particular parts of the research issue may be constrained by a lack of access to certain data sources or pertinent data.

Limitations of Longitudinal Data Longitudinal studies may experience attrition over time, resulting in a smaller sample size and possible biases in the results.

1.8 Study's Organization

The academic thesis is precisely structured, with various sections working together to convey an extensive research project. By outlining the study challenge, objectives, and significance, the introduction sets the stage. The review of the literature conducts a critical analysis of current knowledge and research gaps. The theoretical framework places the topic in its proper theoretical context. The research design, data collecting, and analysis procedures are specified in the methodology. Results commonly use figures and tables to communicate findings. Results are interpreted in the discussion by relating them to literature and theory. Contributions and consequences are summed up in the conclusion. Appendices also contain supplemental information. This organized format makes for a cogent narrative that leads readers through the research process while showcasing the researcher's methodical approach and discoveries.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, we delve into the extensive body of literature that forms the backdrop for our academic research. By examining relevant theories, concepts, and previous studies, we aim to establish a solid foundation upon which our current investigation stands

2.2.1 Conceptual Review

In this section, we present the core concepts and variables that are central to our study. We define key terms and outline the relationships between these concepts, setting the stage for a more in-depth exploration in the subsequent chapters.

2.2.1.1 Logistics provider's capabilities

There are four aspects of the classic buyer-supplier relationship that are typical. The buyer's first priority is a low price. Second, the buyer keeps a variety of sources in order to intensify supplier rivalry. Finally, the relationship is focused on the short term. Additionally, the personalized effort is not much (Jackson, 1985). There is no question that the supply chain is less responsive to a changing market environment as a result of the lack of customization and the adversarial nature of this type of contact.

A strategic alliance or partnership is preferable to a typical buyer-supplier relationship for companies in the time-sensitive manufacturing industry (Dyer, 1996). A partnership is defined as "a customized business relationship based on mutual trust, openness, shared risk, and shared reward that generate a competitive advantage, resulting in business performance greater than would be obtained by the firms alone" (Lambert et al., 1999). In order to better meet supply chain needs, third party logistics (3PL) providers should offer logistics services to businesses in a better, quicker, and more affordable manner by synchronizing the logistics activities

globally with the help of various information technologies (Krakovics et al., 2008). Forming a strategic partnership with a 3PL provider is one of the finest business strategies for companies to achieve cost-effective performance and long-term success (Chen et al., 2010). In order for a company to: (1) avoid making significant investments in new assets and capabilities; (2) concentrate on its core competencies and acquire complementary capabilities from outside suppliers; and (3) In the unstable business environment, take advantage of additional business opportunities and fend off threats (Bage), contracting out should be used for tasks for which a company lacks the resources or the ability to deploy the resources. As a result, companies that participate in strategic alliances have a higher likelihood of outperforming those who employ the traditional arms-length approach (Dyer, 1996).

According to Hafeez et al., (2002), capability is the ability to use a resource to carry out a task or activity. A resource is any tangible or intangible asset held or acquired by a corporation. According to a resource-based perspective, the skills of the logistics provider are particularly important to the integrative strategic process because they are expected to increase business productivity and effectiveness, which will ultimately result in long-term firm profitability and survival (Mentzer et al., 2004).

Based on the nature of their businesses, clients, and services, various organizations differ in terms of their logistics capabilities. Therefore, it can be challenging to define logistics capability without a clear context. However, for the purposes of this study, logistics capability is defined as the ability of logistics and transport service providers to manage logistics-related tasks, utilize relevant tools, and meet customers' actual needs. The three key components of a logistics competency are innovation, rapid customer service, and flexible operations. Notably, multiple viewpoints and industries can be used to categorize logistics competence. There are various definitions of logistical capabilities in addition to these ones that are categorized.

According to Wangmin (2002), logistics capability includes both static and dynamic components, such as agile, matching, and integration capabilities. Static capability includes things like the logistics facility, logistics process, and logistics delivery. In their 2010 analysis of the impact of chain store logistics capability on the caliber of logistics service, Xu Liang and Wang Keyi discovered that logistics capability can enhance it. Other writers (including Liang and Shankun (2012) and Protogerou et al., (2011) contend that operations, also known as functional capability and dynamic capability, make up logistical capability. A separate phrase, "static capability," is used by Xu Liang et al., (2010) to discuss operational capability in a chain store logistics capability structure. In earlier research, operational capability and dynamic capability were distinguished; nevertheless, to generate, extend, and adjust operational capabilities across time, they needed to be coupled (Helfat & Peteraf 2003). Researchers have made compelling inferences that supply chain risks and uncertainty are related to logistics competence. Supply chain agility reduces supply chain risk (Martin & Denis 2001), and logistics capabilities has a direct impact on the agility of the whole supply chain (Gligor & Holcomb 2012). Lai (2004) contends that logistics service providers in a better position to meet consumer demands for a variety of services will also deliver higher service performance. According to Jay JoongKun et al., (2008), logistics capacity can significantly help an organization achieve exceptional performance and maintain a competitive edge. Other investigations have discovered a relationship between logistics service competency and corporate performance (Jay Joong-Kun, et al., 2008). According to Morash et al., (1997), the four core qualities of delivery speed, reliability, responsiveness, and low cost distribution are highly correlated with performance and are seen as essential elements of long-term competitive advantage. The operational and financial performance of 3PL providers can be impacted by their capabilities (Liu & Lyons 2011). It also has an impact on financial success (Liu & Lyons 2011), as logistics skill is positively correlated with corporate performance (Jay Joong-Kun et

al., 2008). Additionally, it has a direct impact on the agility of the entire supply chain (Gligor & Holcomb 2012). Lai (2004) asserts that logistics service providers with more service capabilities are better able to satisfy the variety of client wants and hence produce better service outcomes. Thus, there is a direct correlation between logistics capability and performance, and logistics capability can significantly contribute to the achievement of better performance and sustainable competitive advantage (Jay JoongKun et al., 2008).

2.2.1.2 Inter organisational relationship management

We are referring to an inter-organizational relationship when we discuss a supplier partner's level of dedication, trust, and common objective (Varoutsas & Scapens 2015). Without the foundation of solid inter-organizational relationships, the majority of attempts to regulate the flow of information or goods across the supply chain are likely to fail (Palanski et al., 2011). One of the most significant paradigmatic shifts adopted by contemporary organizations, according to Chen et al., (2011), is the move away from supply chains or working in synergy with other market participants. Businesses compete and succeed based on the capabilities they can assemble throughout their supplier networks (Sorrentino & Garraffo 2012). This suggests that firms must cooperate with others in their supply chains and enhance one another in order to realize their common goals and values (Chen et al., 2014). The foundation of building mutually agreeable aims and ideals within project teams is mutual trust and commitment (Lau and Rowlinson 2009). By clearly stating shared goals and objectives, strategic management partnerships can be established to achieve these (Mayer et al., 2007). A culture of commitment and trust among supply chain partners can also be fostered by the establishment of charters and agreements that explicitly define the mutually agreed-upon goals and values (Manu Ankrah et al., 2015). As new ideas are exchanged through organizational learning, the growth of interorganizational connections may be a vital source of innovation for developing nations like

Africa (Rensburg et al., 2014). The exchange of novel ideas might lead to ground-breaking fixes for any challenges that are now being faced, supporting the growth of the African economy.

2.2.1.5 Supply chain performance

Supply chain performance is defined as the ability of the supply chain to deliver high-quality goods and services to its end clients in precise quantities, on schedule, and for the lowest cost possible (Hult et al., 2010). The majority of businesses hold management abilities responsible for the business's performance. The ability of a company to prosper, however, is dependent on how well its partner supply chains operate in the present (Abu Bakaretal., 2010; Hoejmosse et al., 2014; Jiang et al., 2011). Lower prices, more market share and sales, and lasting relationships with clients are some advantages of an efficient supply chain (Brandenburg et al., 2014). Green et al. (2012) assert that assessing the efficiency of the supply chain can improve an organization's general performance. Integrating the performance of each member of a supply chain may increase efficiency (Alexiev et al., 2016; Sodhi et al., 2012). Due to the need to consider each player's unique performance, managing the entire supply chain efficiency becomes challenging (Flynn et al. 2010). Enlightening supply chain performance is one of the major obstacles to firms keeping their competitive advantages (Trkman et al., 2015).

High performance logistics necessitates understanding the measurement discipline, claims Forslund (2007). Any firm that wants to stay competitive must acknowledge the crucial importance of performance measurement. In comparison to less successful suppliers, first class suppliers value performance measurement capability more for success (Fawcet and Cooper, 1998). However, it has become difficult for the majority of firms to assess their performance (Novak and Thomas, 2004), as they relate to a variety of service indicators including lead times and on-time delivery that are intricately linked. In order to maintain a competitive edge going

forward, it's critical to have formal metrics for assessing supply chain performance (Harrison and New, 2002).

There isn't a lot of research on how businesses manage their vendor relationships using performance measurement (Schmitz and Platz, 2004). Forslund (2007) argues that extending logistics performance measures is necessary. She continues by saying that measuring these metrics has no value by itself and that what matters is to raise the bar for customer service in order to meet rising expectations. Several tasks that come before measurement are required to evaluate the effect of logistics outsourcing on supply chain performance. According to Tian et al. (2003), the definition of performance metrics, measurement process, analysis, thorough evaluation, and improvement process are all necessary first steps in the performance measuring process. A number of qualities of efficient performance measurement systems have been outlined by Gunasekaran et al. (2004) and can be utilized to assess these measurement systems. These qualities include inclusivity, universality, measurability, and consistency. Benchmarking is a crucial technique used in performance measurement evaluation in addition to analyzing the measures based on their efficacy. Using benchmarking to find room for improvement is another benefit.

Numerous performance metrics are now categorized by researchers. Some of these criteria, including quality, time, flexibility, and cost, are presented by Neely et al., (1995). If one wants to create a model to enhance one aspect of a system, like time, this categorisation is a beneficial tool. By altering the setup of the system, the model can then compare manufacturing lead time or due-date performance. Many various specific measures of time are relevant by employing this one sort of measure, time, inside this category. Measures within a category can be compared and studied so that performance measurement selection within a category may be easier. By employing this strategy, it implies that the performance category has already been selected.

A single performance metric as the sole component of a supply chain performance assessment system, according to Gunasekaran (2004), is typically insufficient. This is because it leaves out crucial supply chain characteristics and their linkages, as well as important corporate strategic goals. Key components of strategic goals are measuring resources, output, and adaptability. Supply chain models frequently use resource measures and output measures (typically customer responsiveness). A flexible supply chain offers several benefits, despite the fact that it has just recently been used to supply networks. The three layers of supply chain measures—strategic, tactical, and operational—are examined by Gunasekaran (2004). Lead time compared to industry standards, quality standards, cost-cutting initiatives, and supplier pricing compared to market are examples of strategic level metrics. The effectiveness of the booking in processes, cash flow, quality assurance methods, and capacity flexibility are examples of tactical level measurements. Daily operations, adherence to the planned timetable, the capacity to prevent complaints, and the accomplishment of defect-free deliveries are all considered operational level measures. As a result of the expansion of outsourcing, outsourcing strategies are now becoming a more crucial part of an organization's performance (Gottfredson et al., 2005). It is not always evident whether a firm's outsourcing actions are strategically in line with its overall competitive strategy, even though the stated purpose of outsourcing in supply chains is to gain a competitive advantage. Cost, flexibility, inventiveness, quality, and time, the five competitive outsourcing criteria, interact to affect the effectiveness of logistics supply chain management. Additionally, it has been discovered that a company's supply chain performance is almost always positively correlated with its overall business performance.

2.2.2 Logistics provider's capabilities and supply chain performance

Because of the current economic climate, businesses are being pushed to outsource key logistical operations like warehousing, shipping, clearing, and forwarding (Kaneshige, 2001).

Wilson (2001b) asserts that firms are being forced to outsource their transportation and logistics operations due to the desire to reduce costs and the complexity of logistics technology. Despite the fact that third party logistics are enhanced at incorporating logistical services and thereby boosting the efficiency of the supply chain, enterprises are still hesitant to outsource crucial logistic functions. Therefore, businesses outsource in order to concentrate on tasks that are representative of their core competencies, giving them a competitive advantage while also saving money. Lynch (2000) asserts that businesses that outsource spend less on pricey technology, warehouse space, and machinery. By increasing asset returns and cutting costs, they have dramatically increased returns. The perceived value addition to a business's operations, such as just-in-time delivery and shipment consolidation through cross docking, is another factor to take into account when outsourcing. This improves the distribution process by lowering the cost of freight and handling. The most significant value that third party logistics companies have added is information and technology management. According to Sopher et al., (2002), they have offered security and safety. Improving logistics efficiency requires access to real-time data on inventories, shipments, and order status and supply chain insight. It has resulted in lower inventory levels and better customer support. Therefore, if the integrity and security of the items while being carried, handled, and stored are to be maintained, the logistics provider will be required to take the lead in the execution of the same.

A better understanding of the supply chain may be achieved and overall performance can be increased by measuring supply chain performance (Ravi, 2001). Information technology, used as a tool, not only makes the supply chain more efficient and productive, but it also serves as a competitive weapon for the organization's logistics outsourcing strategy (Ravendran, 2002). The coordination and integration of electronic information flow throughout the supply chain network is facilitated by information technology. Through the use of this technology, business partners and clients can conduct transactions that are effective and efficient, have quick access

to information, improve customer service, decrease paperwork, improve communication, and save time. The integration of information-based services like booking, freight rate computation, routing, and scheduling with services like transport and warehousing is one of the obvious consequences of supply chain technology on the performance of the supply chain. It is impossible to deny the effect that outsourcing logistics has on the effectiveness of the supply chain. Kariko (2012) asserts that outsourcing logistics can increase an organization's profitability by ensuring that products and services are acquired at the proper time, location, quality, price, and quantity. Superior customer service gives a firm a competitive edge through a strong and effective supply chain. In order to increase the performance of the supply chain, a business must optimize its operations by adding value at every stage of the chain. According to Sinha et al. (2011), there are several benefits to outsourcing to countries outside of the United States, including rising productivity and falling labor costs with no compromise on quality. Additionally, outsourcing logistics has allowed for flexible resource allocation and the creation of connections through networks and alliances.

2.2.3 Inter-organisational relationship management and supply chain performance

Enterprises in the supply chain must be adaptable and efficient to survive in the competitive climate. According to Laosirihongthong et al. (2014), Lehoux et al. (2014), and Ounnar et al. (2007), this environment also encourages supply chain firms to work together. Furthermore, the way in which organizations function has undergone significant change as a result of developments in technology, competition, and client demand. As a result, businesses are developing new kinds of highly collaborative processes and networked structures that might provide them a competitive edge by fusing the resources and best core capabilities of two or more businesses (Romero and Molina 2011). The emerging economy no longer benefits from the classic standalone value development model (Zhang and Chen 2008). As a result, more and more businesses are looking to partner and jointly develop goods and services (Barrett et al.

2011). A growing body of scholarly study in these areas has virtually completely encapsulated relationship building. These elements include, but are not limited to: theory and mechanism (Grönroos 2008); practical application (Ho et al. 2010); measurement and scale development (Andreu et al., 2010; Ho et al., 2010); and Chinese literature review (Wu and Chen 2012). However, inter-organizational relationships were initially formed from the idea that businesses should create values with other enterprises to aid in survival (Vargo and Lusch 2004). This led to study on the impact of inter-organizational relationship management on supply chain performance. Finding the driving variables that lead to inter-organizational relationships and the procedure that supply chain firms should follow has therefore become an issue. Our proposed model for how inter-organizational relationships effect supply chain performance will be empirically tested in this study.

2.3.1 Empirical Review

This subsection expands upon and emphasizes the conclusions of relevant earlier research on the connections between the variables of interest in this study.

Asamoah et al. (2021) investigated the effects of inter-organizational systems on the supply chain management (SCM) capabilities and performance of a company. Their investigation supports every hypothesis put out in the research model using data from 193 respondents from different makers and distributors of fast-moving consumer products. The findings show that inter-organizational systems have a dual positive impact on operational supply chain performance, SCM capabilities, and the mediating function of SCM capabilities. Further, they suggested that first-order research may explore the complex interactions between the constructs of their study. Future research can also examine in more depth how IOS utilization and SCM capabilities work together to improve supply chain performance.

The South African manufacturing sector's supply chain performance is examined by Moipone et al. (2018) in connection to supply chain dynamism, information exchange, and

interorganizational relationships. A purposive sample of 340 supply management specialists drawn from 31 Gauteng-based industrial companies provided the empirical data for this study. Using structural equation modeling, which included a confirmatory factor analysis and hypothesis tests, data were analyzed. According to the findings, there is a significant positive relationship between supply chain dynamism and information sharing as well as inter-organizational relationships, information sharing and supply chain performance as well as inter-organizational relationships, and inter-organizational relationships and supply chain performance. To aid with generalization, they advised testing the study's variables in a new geographical setting.

A study by Liu et al. (2017) looked at how firms manage their relationships with logistics service providers and how LSP skills affect supply chain performance. The goal of the study was to determine whether good relationship management strengthens the beneficial benefits of LSP skills on supply chain performance. They used statistical analysis methods including regression analysis to look at the relationships between the data they obtained from a sample of businesses operating in different industries. Their study's results showed that companies who actively manage their relationships with LSPs benefit more from the capabilities of LSPs in terms of supply chain performance. This shows that the influence of LSP skills on supply chain performance is increased when enterprises actively manage and cultivate their relationships with LSPs. The study by Liu et al. (2017) advances knowledge of the value of efficient interorganizational relationship management in the setting of supply chains. It draws attention to the possible rewards that may result from devoting time, energy, and resources to building solid, cooperative partnerships with LSPs. Organizations may harness the benefits of LSP capabilities and achieve better supply chain performance outcomes by actively managing these connections.

In the context of supply chain partnerships, Zhu et al. (2018) investigated the connection between trust, commitment, and supply chain performance. The researchers sought to better understand how supply chain participants' commitment and trust affect the efficiency of the entire system. A representative sample of supply chain partners from different industries was used to get the data. Participants were asked to rate their level of commitment, trust, and a number of supply chain performance measures. To examine the association between these variables, the researchers used statistical analytic methods like correlation and regression analysis. They emphasized the beneficial benefits of trust and dedication among supply chain partners on the effectiveness of the supply chain. According to the study, there is a strong positive association between trust, commitment, and numerous supply chain performance indicators. This shows that increased overall supply chain performance is linked to higher levels of trust and dedication among supply chain partners.

The performance of Jordanian pharmaceutical firms was analyzed by Al Shraaha et al. in 2022 in relation to sourcing tactics and logistics skills. Quantitative information from the pharmaceutical sector was gathered after investigations showed that sourcing tactics and logistical prowess significantly improve organizational performance in pharmaceutical firms. The study suggested that it would be useful to collect qualitative information on managers' perceptions of the variables under consideration.

In order to better understand how to utilize the capabilities of logistics service providers (LSPs) and how it affects supply chain results, Chen et al. (2019) undertook a study. By properly utilizing LSP capabilities, the researchers wanted to study the importance of IRM in achieving enhanced supply chain performance. Data were gathered for this study from a sample of businesses in various industries. The efficiency of their IRM procedures, the skill sets of their LSPs, and key supply chain performance metrics were all rated by the participants. To examine the association between these variables, the researchers used statistical analysis methods such

regression analysis. The results showed that IRM is essential for maximizing LSP capabilities and obtaining the best supply chain results. According to the study, companies with strong IRM procedures were better able to make use of their LSPs' skills to improve supply chain efficiency. This shows that enterprises can successfully tap into and utilize the skills given by these providers to improve their overall supply chain outcomes by actively managing and developing relationships with LSPs.

Aziz et al. (2010) analyze the variables that influence the effectiveness of inter organizational connections in third party logistics and offer a conceptual framework designed specifically for such partnerships. The findings of an interview with industry participants showed that the dedication, adaption, dispute resolution, compatibility, and communication of the top-ranked logistics service providers in SCE's portfolio were all essential for their excellent performance. In order to test the theory further and with more cases to support the validity of their framework, the study proposed that future studies undertake further studies in this field.

2.4.1 Theoretical Review

2.4.1.1 Transaction Cost Economics Theory (TCE)

Transaction cost economics (TCE) and supply chain management both emphasize "the relationship between economic entities" as a central idea (Zipkin 2012). In operations and supply chain management research, TCE is not only one of the most frequently cited and used organization theories (Grover and Malhotra, 2003), but it also has the ability to guide further investigation (Anand and Gray, 2017). The make-or-buy choice, also referred to as the "canonical transaction," is the center of the TCE, a general theory of exchange relationship governance and economic structure. The governance of buyer-supplier relationships can be examined through a number of important theoretical lenses, including TCE (transaction cost economics) (Liu et al., 2009). Examples of governance mechanisms that can be used to design

the structural arrangements for controlling partner behavior and enhancing buyer-supplier relationships include contracts and relational adaptability (John et al., 2016).

It is important to remember that contracts in buyer-supplier relationships form the basis of the entire commercial transaction. They formally govern the relationships between parties in terms of their obligations and behaviors because buyer-supplier relationships and transactions have a wide range of costs. As a result, buyers and suppliers should work jointly to minimize the costs of partnership transactions with a view to forecasting and achieving predetermined performance indicators. The ideal way to do this is for relationship partners to cooperate, have trust in one another, and be fully dedicated to one another while also sharing enough knowledge to manage environmental uncertainty and make transaction-specific investments (John et al., 2016).

This study posits that, logistics provider's capabilities and inter-organisational relationships improves the supply chain performance of multinationals. Buyer-supplier relationship is premised on mitigating diverse cost dimensions that come with transacting business with other supply chain members. Inasmuch as handling such costs is imperative, the environmental uncertainties make it complex if impossible to achieve projected proceeds. As such, the study, opines that, in order to achieve performances, inter-organizational relationships must be properly built.

2.5.1 Theoretical framework

Inter-organisational

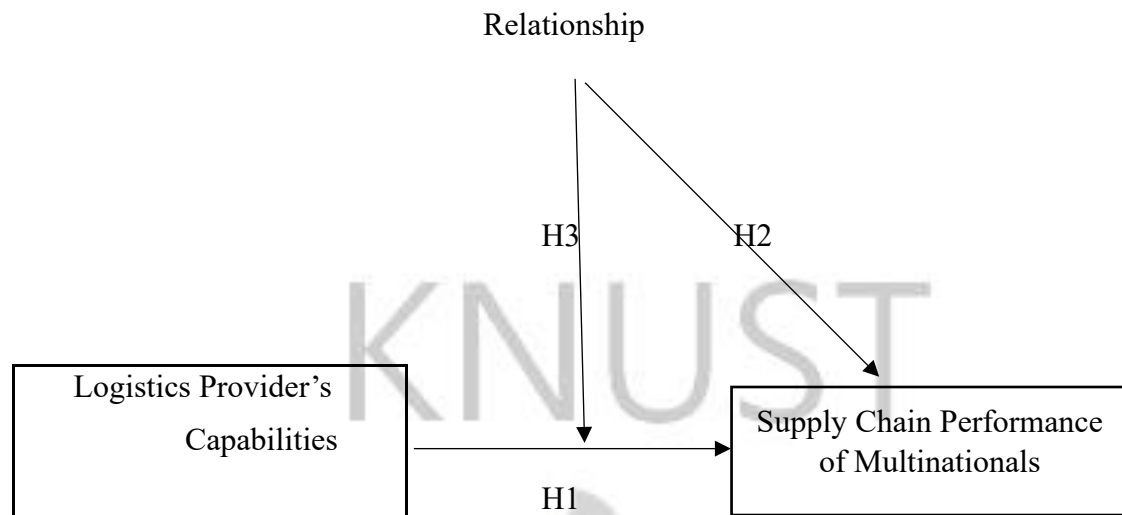


Figure 1.0 Research Model

2.6.1 Hypothesis development

2.6.1.1 Logistics provider's capabilities and supply chain performance

Świtłała et al., (2018) studied the impacts of logistics services providers' adaptability on logistics outsourcing performance, as well as on satisfaction and loyalty of their customers and found that found evidence of a dependency between the adaptability of logistics services providers' and their logistic services performance, as well as customer satisfaction and loyalty. Al Shraaha et al. (2022) also looked at how sourcing strategies and logistical capabilities affected the performance of Jordanian pharmaceutical enterprises and found that these factors significantly improved organizational performance in the pharmaceutical industry. Hence, this study hypothesized that;

H1: Provider's performance is affected by the logistics provider's capabilities.

2.6.1.2 Inter-organisational relationship and SCP

Various supply chain performance results from IOS installation in firms have been examined in prior research. For instance, Hartono et al. (2010) investigated the causes and consequences of the information quality of the IOS. Through well-informed and timely decision-making, quality information from IOS improves supply chain performance (Lee et al., 2014).

Information visibility is strongly impacted by IOS-enabled virtual integration and sound relational governance, which increases supply chain flexibility (Wang & Wei, 2007). The performance of the company and its partners is influenced by efficient IOS governance systems and IT ambidexterity (Chi et al., 2017). However, some studies point to the necessity for businesses to foster a culture of collaboration in order to realize the advantages of IOS in the supply chain (Zhang & Cao, 2018). Hence, this study hypothesized that;

H2: Inter-organisational relationship has a positive relationship provider's performance

2.6.1.4 Moderating role of inter-organisational relationship on logistics provider's capabilities and SCP

Although quite a few studies have taken a combination of the variables into account, to the researcher's knowledge, no study has integrated all three variables in a single study. For instance, Moipone et al. (2018) investigated the connection between supply chain performance in South Africa's manufacturing sector and supply chain dynamism, information exchange, and inter-organizational interactions. The antecedents and consequences of IOS information quality were researched by Hartono et al. in 2010. Through well-informed and timely decision-making, quality information from IOS improves supply chain performance (Lee, Kim, & Kim, 2014). Information visibility is strongly impacted by IOS-enabled virtual integration and sound relational governance, which increases supply chain flexibility (Wang & Wei, 2007). Asamoah et al. (2021) investigated the effects of inter-organizational systems on the supply chain management (SCM) capabilities and performance of a company. Hence, this study hypothesized that;

H3: Inter-organisational relationship moderates the relationship between logistics provider's capabilities and supply chain performance

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this pivotal chapter, we delve into the intricate web of decisions and strategies that govern our research journey. From the selection of research methods to the operationalization of variables, this chapter offers a transparent and comprehensive account of the methodology employed in our academic investigation.

3.2 Research Design

Here, we lay out the general layout of our research. Our research is organized and structured overall, and we explain how each component works with the others to answer our research topic. We discuss the advantages of the research approach for helping us get information and insights (Creswell, 2018; Yin, 2014). A research design is an example of the overall study agenda's master plan (Saunders et al., 2009). A research design, in accordance with Cooper and Schindler (2003), encapsulates the strategy and approach a researcher uses to generate the necessary answers or solutions to a topic that has been previously established for the study. A research design is also described by Pinsonneault and Kraemer (1993) as the strategy for testing the predetermined study hypotheses.

The researcher decided that an explanatory research design would be best for carefully examining and testing the study's hypotheses. According to Saunders et al. (2009), an analytical study with the aim of identifying and assessing the relationship and links between pertinent aspects in regard to the research subject is known as a "explanatory research strategy." Explanatory technique was employed to establish the relationship between the capabilities of logistics outsourcing providers, inter-organizational relationships, and supply chain performance. For doing quantitative research, a variety of research designs are available, including survey, experimental, descriptive, and correlational designs.

A survey research strategy was selected for this investigation. According to Saunders et al. (2009), a survey research design is one that is conducted to advance scientific understanding. A survey, on the other hand, is characterized as a technique for "collecting data on the traits, behaviors, or views of a subset of a population" (Mcadams et al., 1982). The purpose of survey research is to examine theories and causal relationships. It does so in accordance with theoretical presumptions regarding how and why the variables need to be associated (Pinsonneault and Kraemer, 1993). Depending on whether or not the time dimension is explicitly addressed, survey designs can be classified as cross-sectional or longitudinal (Pinsonneault & Kraemer, 1993). Thus, the subject and research questions determine the best study design. A cross-sectional design is used to describe the current state. A cross-sectional design is used to describe the current state. This kind of study is usually used to pinpoint the characteristics of a population at a certain time. According to Pinsonneault and Kraemer (1993), it is safe to extend the sample's findings to the entire population at the time the study was conducted. This study used a cross-sectional research design because data on the constructs were collected at a certain period to determine the impact and link between the concepts.

3.3 Research Method

The objectives of a study typically have an impact on the research approach used. A careful analysis of the study's objectives necessitates the use of a quantitative approach to research. To support or refute competing knowledge propositions when employing a quantitative approach, evidence must be measured and statistically analysed (Creswell, 2013). To enable the results to be generalized, the quantitative data employs a large number of participants rather than acquiring specific information from them (Blessing & Chakrabarti, 2009). Babbie (2010) asserts that a study that emphasizes the gathering of numerical data either generalizes across populations or offers a convincing explanation for a particular phenomena or event. The four study objectives were investigated using simple correlation and regression analysis as well as descriptive statistics like mean and standard deviation.

3.4 Population of the Study

Objects, topics, or members who comply to the specification set are collectively referred to as the population, according to Creswell (2013). Saunders et al. (2009) state that the entire set of cases from which a sample is taken is the target population. It is aimed to explore the perspectives of CEOs and managers regarding logistics outsourcing providers' capabilities, inter-organisational relationship and supply chain performance. Multinational firms are purposely chosen for this study due to the significance of supply chain and the kind of relationships it has to build and incorporated into its operations before success can be realised. Considering the variables of interest in this study, logistics outsourcing providers' capabilities, inter-organisational relationship and supply chain performance, multinational firms are the best respondents for the study.

3.5 Techniques for Sampling and Sample Size

In a study, it would be nearly dreadful to look at the whole study population because of things like changes in the target population's physical characteristics, the projected cost of conducting the study, the time frame, the location, and the degree of measurement reliability needed to achieve generalization. This is so that a deeper comprehension of a theoretical framework can be gained from the facts that the respondents ultimately offer (Bernard, 2002). Performing a decent sampling is one of the tasks that is crucial to obtaining accuracy and reliability. Although selecting an acceptable sample size is an important factor to think about when doing research, there is no set formula (Hair et al., 2014). Two crucial variables served as the foundation for choosing the sample size for this investigation. While generalization continues to be a consideration, the other determining element is the complexity of the study's theoretical model in relation to the statistical analysis required to estimate the study's hypotheses. A significantly "larger" sample size is typically required for extremely complicated models, such as those with a large number of linkages, variables, or causal variables that must be analyzed or regressed, according to Hair et al.'s (2014) research. Again, according to Hair et al. (2014), a sample size of at least 100 is judged adequate in research that rely on inferential statistics since it enables compelling generalization, given that the sample is a subset of the population. In light of this, the study sought to sample at least one hundred (100) workers from international firms.

According to Saunders et al. (2009), sampling techniques are divided into two subgroups: probability sampling and non-probability sampling. Stratified sampling technique, cluster sampling, simple random sampling, and systematic sampling are all examples of probability sampling procedures, according to Saunders et al. (2009). Non-probability sampling techniques include convenient sampling, deliberate sampling, and snowball sampling (Saunders et al., 2009). The study employed convenient and intentional sampling techniques. Creswell (2013) defines purposeful sampling as the intentional and non-random choice of a sample size with

the intention of achieving a certain objective. Researchers who are familiar with the relevant population features use it. This method enables the researcher to carefully choose a sample from the overall population. A purposive sampling strategy gives each participant of the populace a different chance of being chosen for the sample.

Since the researcher is familiar with the target group and is aware of the people who could supply the essential information, he used convenient and intentional sampling. Thus, a straightforward and purposeful sampling technique was used to select a total of 100 individuals. Managers and employees who have the required knowledge, information, and expertise on the topics under consideration make the greatest candidates for the study. The aforementioned individuals were sampled as a result of the study's variables. Experts in their fields, the targeted respondents are the greatest and most suitable sources of accurate and helpful information for the study.

3.6 Types and Sources of Data

Data are facts or numerical information that can be used to draw conclusions. Before information can be presented and analyzed, a process of gathering and sorting data is needed. Data can be thought of as the foundation upon which information is built. Data, used in its broadest sense, refers to existing knowledge or information that has been represented or codified to make it simpler to use or process (Mesly, 2015). Data is gathered, reviewed, and then transformed into information that may be utilized to influence decisions. Data can be gathered from a primary source (the researcher receives the information first) or a secondary source (the scholar does not receive the information first) (Mesly, 2015).

Primary data is the kind of information that is gathered from first-hand experience directly by the researcher through sources like experimentation, observation, surveys or questionnaires, and interviews (Ghauri & Grohaug, 2010). Primary data are expensive and time-consuming to

get, yet they nonetheless prove to be a reliable source of information because they are gathered specifically for the intended application (Ghauri & Gronhaug, 2010).

Data gathered from a source other than the researcher conducting the current study is referred to as secondary data. Secondary data are important because they give us knowledge that helps us comprehend, justify, and resolve our research difficulties (Sekaran, 2003). The ability to save money and time is another advantage of using secondary data. Many academics have consequently suggested that it is a good idea for all study to start with secondary data sources because of the advantages secondary data can provide to a researcher (Ghauri & Gronhaug, 2010).

This study gathered primary data from managers and staff members of international corporations in Ghana using a survey questionnaire. The use of a self-administered structured questionnaire was motivated by the way it is consistent with earlier research on the capacities of logistics providers and supply chain performance (Gandhi et al., 2017; Zhou & Li 2020). Additionally, according to Campana (2010), survey questionnaires are the best way to generalize the results from a smaller sample size to a larger one.

3.7 Data Collection Method

Leary (2005) claimed that any of these four methods—telephone, internet, face-to-face, or mailing system—can be used to administer surveys for a research project. The sampled managers, managers, and employees were given the surveys in-person, namely through delivery and collecting. The study favored in-person interactions since they are consistent with Zhou & Li (2020). According to De Vaus (2002), a questionnaire is any method of gathering data in which each participant is required to answer the exact same set of items in a predetermined order so that the results are unmistakably within the researcher's parameters. The surveys were given to respondents with a sufficient amount of time (14 days) to complete

them. Within the allotted period, the completed surveys were gathered. Respondents were made aware of the experiment prior to the administration of the questionnaires. The researcher hired four field assistants because there were so many respondents. It is important to note that these assistants are credible individuals who present well collected data. Five people in all compiled the data from every participant from chosen supervisors and staff members who were knowledgeable about the topic.

Table 3.7.1 Summary of Measurement Variables

Variables	No. of Items	Source
Logistics Service Provider's Capabilities		
Innovation Capabilities	6	Heide, (1994); Heide and John, (1992)
Customer Response Capabilities	6	Heide, (1994); Heide and John, (1992)
Flexible Operations Capabilities	7	Heide, (1994); Heide and John, (1992)
Collaborative Capabilities	4	Jap, (1999)
Inter-organisational relationship management	5	Lai et al., 2011
Supply Chain Performance		
Reliability Performance	5	Koçoğlu et al., (2011); Won Lee et al., (2007)

Efficiency Performance	4	Koçoğlu et al., (2011); Won Lee et al., (2007)
Flexibility Performance	5	Koçoğlu et al., (2011); Won Lee et al., (2007)

3.8 Data Analysis Method

Both inferential and descriptive (correlation and regression) techniques were used to analyze the solicited data. As a result, the raw data was reduced to a summarized format. The analysis was performed to take into account the study's goals and hypotheses.

The goal of inferential analysis was to determine whether the independent variable had any bearing on the result of the dependent variable. The variables' correlation was tested to see if it was sufficiently strong for a regression study to be performed. The associations between the cause and outcome variables were also examined using regression analysis. Centered on descriptive tables was descriptive analysis. This made it easier to see how frequently the variables under study were used. To support the achievement of the study's stated aims and hypotheses, data analysis techniques including descriptive and inferential were used. Version 23 of the SPSS was used in the study to assist with data analysis. MS Excel and SmartPLS 3 were also used in addition to SPSS. Tables were primarily used in the analysis to present the findings. This aided the researcher in organizing the information into tables, which improved comprehension.

3.9 Validity and Reliability of Constructs

Both the reliability and validity of the study's constructs were a focus of this investigation. In addition to employing the majority of the questionnaires used to gather the primary data, SPSS software was utilized to evaluate reliability and validity tests. The Cronbach's Alpha test was employed to analyze the data's dependability and make sure that it met the requirements for

consistency and quality. The dependability of both dimensions and constructs was tested. The coefficient of Pearson correlation was used to determine the validity of the constructs. Internal validity, or how closely a study's results match reality, is what is concerned with validity, but external validity, or the degree of generalizability, is what is worried (Rönkkö, & Evermann, 2013). The level of validity reflects how precisely data collection methods measure the variables they are meant to evaluate. Two (2) research professionals reviewed the questionnaire in order to achieve this before it was released. To ensure that every item in the survey assessed what it was intended to measure, these experts meticulously went through it.

To ensure clarity and subsequently validity, most of the questionnaire's components and constructs were then replicated with minor language adjustments. To get relevant data for analysis, every attempt was taken to ensure the validity of the study instrument.

3.10 Ethical Considerations

Every aspect of our research is ethical. We talk about the moral standards that govern our research, such as informed consent, privacy, and any conflicts of interest. We protect the wellbeing of our study participants and the validity of our findings by upholding the highest ethical standards (National Institutes of Health, 2018; American Psychological Association, 2017). Two primary ethical difficulties arising from the viewpoint of the scholar were to be tackled for the benefit of this study. When gathering and analyzing data, the problem of biases was handled by using reliability and validity to make sure that the questions asked lessened, if not entirely eliminated, the researcher's influence on respondents. Additionally, the researcher gave guidelines to participants not response to questions that interfere with their privacy in order to address the problem of addressing ethically sensitive topics. Therefore, respondents' involvement in the study was entirely optional.

3.11 Profile of Multinational Companies in Ghana

Multinational companies (MNCs) operating in Ghana contribute significantly to the country's economy and development. They play a significant role in Ghana's economy by contributing to employment, technology transfer, and foreign direct investment. They are involved in various industries, including mining and natural resources, manufacturing, telecommunications, banking and finance, consumer goods, energy, infrastructure development, and services. These industries represent key sectors in Ghana's economy. MNCs play a crucial role in attracting foreign direct investment to Ghana. They bring in capital, technology, expertise, and global networks, contributing to economic growth and job creation in the country.

Multinational companies in Ghana provide employment opportunities to a significant number of people. They offer job prospects across different levels, including skilled, semi-skilled, and unskilled positions. They contribute to both direct and indirect employment through their operations, supply chains, and business activities. They also introduce advanced technologies and management practices to Ghana. Through knowledge sharing and capacity building, they contribute to the transfer of skills and expertise, enhancing the technological capabilities of local industries. Many MNCs in Ghana prioritize local content development by engaging local suppliers, contractors, and service providers. They create opportunities for local businesses to participate in their supply chains, fostering economic linkages and capacity development.

MNCs operating in Ghana often engage in corporate social responsibility (CSR) initiatives. They contribute to social causes, support community development projects, promote education and healthcare, and implement environmental sustainability measures. CSR activities aim to make a positive impact on local communities and foster sustainable development. They also adhere to Ghana's laws and regulations governing their operations. They ensure compliance

with tax obligations, environmental standards, labour regulations, and other legal requirements. MNCs also maintain corporate governance practices to promote transparency and accountability.

MNCs face competition from both local and international companies operating in Ghana. The competitive landscape influences their strategies for market positioning, product innovation, pricing, and marketing to capture and retain market share. They often collaborate with local institutions, including government agencies, universities, research centres, and industry associations. These collaborations foster knowledge exchange, skills development, and research and development partnerships. Also, MNCs contribute to Ghana's economy through tax payments, export earnings, technology transfer, and infrastructure development. They bring economic benefits through investment and market expansion, stimulating economic activities and driving growth.



CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

In this chapter, the study embark on a transformative journey as we analyze the data collected through meticulous research efforts. Here, we unveil the insights hidden within the raw information, and through rigorous analysis, we distill knowledge that addresses our research question. Four different categories make up this chapter: information about respondents' profiles, validity and reliability testing, descriptive statistics on logistics provider's capabilities, inter-organisational relationship management and supply chain performance, testing of hypotheses using regression and Structural Equation Model (SEM) and discussion of results in light of research goals, conceptual framework, and hypotheses.

4.2 Profile Data and Response Analysis

The response rate, demographics of respondents, and a profile of the participating firms are all provided in this section.

4.2.1 Response Rate

The data for this research was solicited from CEOs, general managers, logistics and procurement managers as well as suppliers of multinational corporations regarding logistics providers' capabilities, inter-organisational relationship and SCP. This exercise saw a total of

100 questionnaire delivered to management through a link to a Google form which contained the question items of the study as well as printed documents bearing the questionnaire items. Every organisation was represented by respondents in a top or middle level managerial role. To help them completely partake in the research, the rationale for the survey was discussed. The 20-day exercise of data collection involved five (5) field officers who aided in the retrieval of ninety two (92) questionnaires. This produced a response rate representing 92% of the total questionnaire delivered. The exploration built on the data generated from the field of study is presented below:

4.2.2 Demographic Information of Respondents

Table 4.1 Demographics

		Frequency	Percent
Gender	Male	70	76.1
	Female	22	23.9
Job Title	Manager	18	19.6
	Logistics Manager	27	29.3
	Procurement Manager	32	34.8
	IT personnels	3	3.3
	Supplier	6	6.5
	Other	6	6.5
Years of experience at the current firm	2 – 5 years	24	26.1
	6 – 10 years	45	48.9
	Over 10 years	23	25.0

Table 4.1 displays demographic details of respondents. The table reveals that the study recorded 70 males representing 76.1% of the respondents as compared to the female respondents of 22 representing 23.9%. The outcomes further exposed that 18 of the participants were managers representing 19.6% and 27 respondents were logistics managers representing 29.3%. 32

respondents were procurement managers and that represents 34.8% while 3 respondents were IT personnels and that represents 3.3% of the respondents. Furthermore, 6 respondents were suppliers and 6 respondents were of other qualifications but had significant knowledge of the subject matter. The suppliers represented 6.5% of the respondents and likewise the respondents in the “others” category. Regarding the years of experience at the current firm, 24 respondents representing 26.1% have stayed with the current firm between 2 to 5 years, 45 respondents representing 48.9% have stayed with the current firm 6 to 10 years and 23 respondents representing 25% have stayed with the current firm 10 years and above.

4.2.3 Reliability and Validity Testing

42 items and 8 components were examined in the study. The outcome of the factor analysis aligned with exactly the same 8 components after a few repetitions. Five of the 42 entries were eliminated as a result of slow loadings. Thus, the final model had eight constructs and 37 components, including three concepts for supply chain performance, one for interorganizational relationships, and four for the capabilities of logistics providers. Cronbach's alpha and composite reliability were looked at in order to evaluate the internal consistency as well as the dependability of the separate measurement constructs. Cronbach's alpha and composite reliability of all constructs, as reported in Table 4.2, were much higher than the indicated cutoff point of 0.8, which is regarded as sufficient for verifying a reasonable level of dependability (Fornell and Larcker, 1981; Nunnally, 1984).

The statistical significance of factor loadings and average variance extracted (AVE) were used to evaluate convergent validity (Fornell and Larcker, 1981; Anderson and Gerbing, 1988; Hair et al., 2010). Additionally, Table 4.2 demonstrated that all indicators had statistically significant loadings to their corresponding constructs ranging from 0.7 to 0.9, indicating that the indicators may assess the corresponding constructs and provide preliminary support for convergent validity. Additionally, Table 4.2 showed that the AVE of each construct is greater than the cutoff

value of 0.5, thus demonstrating the convergent validity of the concept (Fornell and Larcker, 1981).

A rigorous technique for evaluating the discriminant validity compares the average variance extracted (AVE) figures for any two components with the squared relationship between these two concepts (Hair et al., 2010). If the AVE values are higher than the square of the correlation, discriminant validity is present, suggesting that the latent constructs that the item measures share with other constructs explain a greater proportion of the variance in the item measures. Table 4.2 demonstrated that for all the constructs, the square root of the AVE is higher than the relationship between any two of them, demonstrating discriminant reliability (Hair et al., 2010).

Table 4.2 Measurement Model Results

Constructs and reflective indicators	Loadings
Innovation Capabilities (CA =0.884; CR = 0.916; AVE = 0.687)	
IC1	0.804
IC2	0.926
IC4	0.861
IC5	0.810
IC6	0.730
Customer Response Capabilities (CA =0.800; CR = 0.862; AVE = 0.555)	
CRC2	0.776
CRC3	0.715
CRC4	0.760
CRC5	0.758
CRC6	0.714
Flexible Operations Capabilities (CA =0.876; CR = 0.906; AVE = 0.618)	
FOC2	0.824
FOC3	0.782

FOC4	0.734
FOC5	0.793
FOC6	0.750
FOC7	0.830
Collaborative Capabilities (CA =0.860; CR = 0.905; AVE = 0.704)	
CC1	0.836
CC2	0.857
CC3	0.827
CC4	0.837
Inter-organisation Relationship (CA =0.843; CR = 0.888; AVE = 0.616)	
IGR1	0.788
IGR2	0.786
IGR3	0.669
IGR4	0.862
IGR5	0.805
Reliability Performance (CA =0.874; CR = 0.914; AVE = 0.727)	
RP1	0.861
RP2	0.798
RP3	0.896
RP4	0.853
Efficiency Performance (CA =0.707; CR = 0.835; AVE = 0.627)	
EP1	0.777
EP3	0.797
EP4	0.802
Flexibility Performance (CA =0.869; CR = 0.905; AVE = 0.657)	
FP1	0.841
FP2	0.831

FP3	0.738
FP4	0.806
FP5	0.833

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	Range	Mean	Std. Deviation
IC1: Our 3PL provider uses innovative methods for moving freight and distributing it.	5	4.26	0.888
IC2: Our 3PL provider updates the business' operational systems on a regular basis.	5	4.28	0.789
IC4: Our 3PL provider uses operational simplicity.	5	4.43	0.760
IC5: Our 3PL provider uses operational standardization	5	4.15	0.937
IC6: 3PL provider uses risk and safety mitigation for freight	5	4.24	0.894
Overall		4.274	0.854

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Table 4.4 on Customer Response Capability

	Range	Mean	Std. Deviation
CRC2: Customized logistics services are provided by our 3PL provider.	5	4.28	0.843
CRC3: The flexibility of our 3PL provider service allows us to satisfy customer needs.	5	4.23	0.840
CRC4: Our 3PL provider can maintain a low rate of freight damage and loss.	5	4.30	0.737
CRC5: Our third-party logistics partner can consistently complete deliveries on time for all clients.	5	4.41	0.758
CRC6: Our 3PL provider has the ability to address issues and grievances.	5	4.29	0.833
Overall		4.304	0.802

The opinions of the participants about the degree to which Customer Response Capability is evident in the services of their logistics providers are summarized in Table 4.4. Respondents also concurred that their 3PL supplier provides customized logistics services with regard to the particular components of Customer Response Capability (mean=4.28; Std=.843). Again, respondents were confident that the service flexibility of their 3PL supplier can satisfy consumers' expectations (mean=4.23; Std=.840). Respondents concurred that their 3PL provider can maintain a low rate of freight damage or loss (mean = 4.30; standard deviation =.737). The respondents also concurred that their 3PL supplier can consistently deliver goods on schedule for all clients (mean: 4.41; standard deviation:.758) and that their 3PL provider can handle issues and complaints (mean: 4.29; standard deviation:.833). The interviewees largely concurred that their logistics suppliers have the ability to respond to customers (mean = 4.304; standard deviation =.802).

Descriptive Data

Table 4.5 on Flexible Operations Capabilities

	Range	Mean	Std. Deviation
FOC2: Our 3PL provider has the flexibility to adapt to changing conditions.	5	4.35	0.733
FOC3: Our 3PL provider can give speedy courier services.	5	4.24	0.906
FOC4: Our 3PL provider offers worldwide shipping services.	5	4.23	0.903
FOC5: Our third-party logistics partner can consistently complete deliveries on time for all clients.	5	4.18	0.901
FOC6: Our third-party logistics provider can increase delivery frequency.	5	4.29	0.896
FOC7: Our 3PL provider offers a wide range of operation times (such as weekend or after-hours pickup and delivery).	5	4.23	0.927
Overall		4.254	0.878

Table 4.5 represents the view of respondents on the extent of flexible operations capabilities by their logistics providers. According to the sampled respondents, their logistics suppliers have flexible operating skills (mean: 4.254; standard deviation: 0.878). Respondents did concur that 3PL providers are able to adapt to changing situations (mean=4.35; standard deviation=.733). Again, the informant acknowledged that their 3PL provider can deliver packages quickly (mean: 4.24; standard deviation:.906). The informants concurred that their 3PL provider offers worldwide delivery coverage (mean: 4.23; standard deviation:.903). Again, respondents were confident that a 3PL supplier could increase delivery frequency (mean = 4.29; standard deviation =.896). Furthermore, the respondents concurred that their 3PL supplier operates around the clock, including on weekends and after hours (mean=4.29; standard deviation =.896). Finally, it was revealed and acknowledged that the 3PL provider is

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able to consistently sustain on-time delivery for all clients (mean = 4.18; standard deviation =.901).

Table 4.6 on Collaborative Capabilities

	Range	Mean	Std. Deviation
CC1: Together, our business and the 3PL supplier take advantage of special market opportunities.	1-5	4.38	0.768
CC2: Together, our organization and the 3PL provider search for profitable business opportunities.	1-5	4.23	0.853
CC3: Together with the 3PL supplier, our business creates fresh concepts.	1-5	4.26	0.875
CC4: Our business and the 3PL supplier frequently exchange confidential information.	1-5	4.33	0.728
Overall		4.299	0.806

Table 4.6 shows how respondents who took part in the study felt about the degree of collaboration offered by their logistics provider's services. The respondents agreed that their 3PL supplier has a lot of collaborative capabilities based on their overall score (mean=4.299; Std=0.806). According to respondents' responses to separate questions, their company and the 3PL supplier collaborate to take advantage of special market opportunities (mean: 4.38; standard deviation:.768). It was also stated that their organization and the 3PL supplier occasionally search for methods to collaborate on business (mean=4.23; Std=.853). Respondents also acknowledged that their business and the 3PL provider collaborate to create novel ideas (mean: 4.26; standard deviation:.875) and admitted that their business and the 3PL provider often exchange confidential information (mean: 4.33; standard deviation:.728).

Descriptive Data

Table 4.7 on Inter-organisational Relationship

	Range	Mean	Std. Deviation
IGR1: We have dealt with our trading partners in an open and honest manner.	1-5	4.45	0.776
IGR2: We, along with our trading partners, uphold the privacy of the information they obtain from us.	1-5	4.27	0.757
IGR3: There is no need to investigate the trade that occurs between us and our trading partners.	1-5	4.21	0.896
IGR4: To connect us with our trading partners, organizations use laid-back systems.	1-5	4.35	0.818
IGR5: When necessary, our trading partners help us out.	1-5	4.29	0.806
Overall		4.313	0.811

Table 4.7 shows respondents' perceptions of the degree of inter-organizational relationships between their company and other firms. According to the sampled respondents, their company had better inter-organizational relationships than other companies (mean = 4.313; standard deviation = 0.811). Informants did concur that their business and trading partners had been upfront and truthful in their dealings (mean=4.45; standard deviation =.776). Once more, the respondents concurred that their business respects the privacy of the information they get from trading partners (mean=4.27; Std=.757). The majority of respondents (mean=4.21; standard deviation =.896) likewise concurred that trading between their business and partners does not

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require scrutiny. Again, the majority of respondents (mean=4.35; standard deviation =.818) agreed that established mechanisms between firms are used to link them with their trading partners. Once more, the respondents concurred that their trading partners help them out when necessary (mean=4.29; Std=.806). Finally, it was revealed and acknowledged that 3PL providers can consistently sustain on-time delivery for all clients (mean = 4.18; standard deviation =.901).



Table 4.8 Descriptive Data on Reliability Performance

	Range	Mean	Std. Deviation
RP1: Our business provides extremely dependable items through its supply chain partners.	1-5	4.41	0.787
RP2 Our business provides customers with highquality items through supply chain partners.	1-5	4.20	0.855
RP3: Together, our company's supply chain partners and we have improved the quality of our products.	1-5	4.34	0.788
RP4: Together with supply chain partners, our business accelerates the fulfillment of customer orders.	1-5	4.38	0.782
Overall		4.332	0.803

According to polled respondents, overall reliability performance has improved, as shown in table 4.8 (mean = 4.332; standard deviation =.803). The sampled respondents found that their company offers products that are highly dependable (mean=4.41; Std=0.787), that their company offers high-quality products to our customers (mean=4.20; Std=.855), and that their company and supply chain partners have assisted one another in raising the quality of their products (mean=4.34; Std=.788). Finally, they stated that their business boosts the rate at which we fulfill client orders when working with supply chain partners (mean = 4.38; standard deviation =.782).

Table 4 9 Descriptive Data on Flexibility Performance

	Range	Mean	Std. Deviation
FP1: Our company efficiently provides a range of goods and services thanks to supply chain partners.	1-5	4.32	0.769
FP2: Our business offers specialized goods and services with a variety of features in conjunction with supply chain partners.	1-5	4.35	0.733
FP3: With the help of supply chain partners, our business successfully satisfies various customer volume requirements.	1-5	4.42	0.802
FP4: In compared to the industry, our company's supply chain partners have quick customer response times.	1-5	4.20	0.880
FP5: Our company adjusts to and accomodates changes in demand along with supply chain partners.	1-5	4.36	0.833
Overall		4.328	0.803

Table 4.9 is a representation of the perception of respondents on the extent of flexibility attained by the firms. Overall, respondents' responses indicated that their company's performance in terms of flexibility has increased (mean=4.328; Std=0.803). They stated that their company efficiently provides a range of goods and services (mean=4.32; Std=.769) in conjunction with supply chain partners. Again, respondents agreed that their company offers customized products and services with various features in conjunction with supply chain partners (mean=4.35; Std=.733). Additionally, respondents believed that their company effectively meets various client volume requirements in conjunction with supply chain partners (mean = 4.42; standard deviation =.802). Once more, respondents stated that their company's low customer response time in comparison to the industry (mean=4.20; Std=.880) is due to supply chain partners. Again, the respondents concurred that their company responds to and accounts for variations in demand in conjunction with supply chain partners (mean=4.36; Std=.833).

Table 4.10 Descriptive Data on Efficiency Performance

	Range	Mean	Std. Deviation
EP1: With supply chain partners, our company lowers the cost of transportation both incoming and outbound.	1-5	4.25	0.820
EP3: Together with supply chain partners, our business satisfies all product delivery deadlines.	1-5	4.29	0.833
EP4: In comparison to industry, our company and its supply chain partners achieve agreed-upon unit costs.	1-5	4.37	0.707
Overall		4.304	0.787

According to table 4.10's analysis of the data, sampled respondents were found to have enhanced company performance efficiency (mean=4.304; Std=0.787). The majority of respondents (mean=4.25; standard deviation=0.820) agreed that their company's supply chain partners lower incoming and outbound transportation costs. Again, respondents concurred that their company meets on-time delivery standards for all products with supply chain partners (mean = 4.29; standard deviation = 0.833). Respondents also concurred that, in comparison to the industry, their company and supply chain partners achieve agreed costs per unit (mean=4.304; standard=.787).

4.4 Correlation Matrix

In order to determine if the variables in the study correlate, the study used the Pearson Correlation. To ascertain whether there are any relationships between all of the variables, a correlation analysis was performed. The following eight variables were connected with one another: Innovation capabilities (IC), customer response capabilities (CRC), flexibilities operations capabilities (FOC), collaborative capabilities (CC), inter-organisational relationship (IGR), reliability performance (RP), efficiency performance (EF), flexibility performance (FP).

Table 4.11 depicts the results of the interrelationship between the variable of interest. As captured in 4.11, all the variables had their correlation coefficients been positive and significant.

Table 4.11 Inter-Constructs Correlations

	IC	CRC	FOC	CC	IGR	RP	EP	FP
IC	1							
CRC	.580**	1						
FOC	.530**	.692**	1					
CC	.311**	.334**	.633**	1				
IGR	.307**	.377**	.626**	.876**	1			
RP	.532**	.464**	.621**	.728**	.684**	1		
EP	.407**	.432**	.526**	.456**	.457**	.522**	1	
FP						0.204	.520**	1
		0.199	0.114	0.103				0.108
								0.057

****.** Correlation is significant at the 0.01 level (2-tailed).

Table 4.12 Hypothesis table

Path	Beta	P value	Results
Logistics Service Provider -- > Supply Chain Performance	0.028	0.184	Not supported
Inter-organisational Relationship -- > Supply Chain Performance	0.068	0.01	Supported
Inter-organisational relationship moderates the relationship between Logistics Service Provider and Supply Chain Performance	0.002	0.815	Not supported

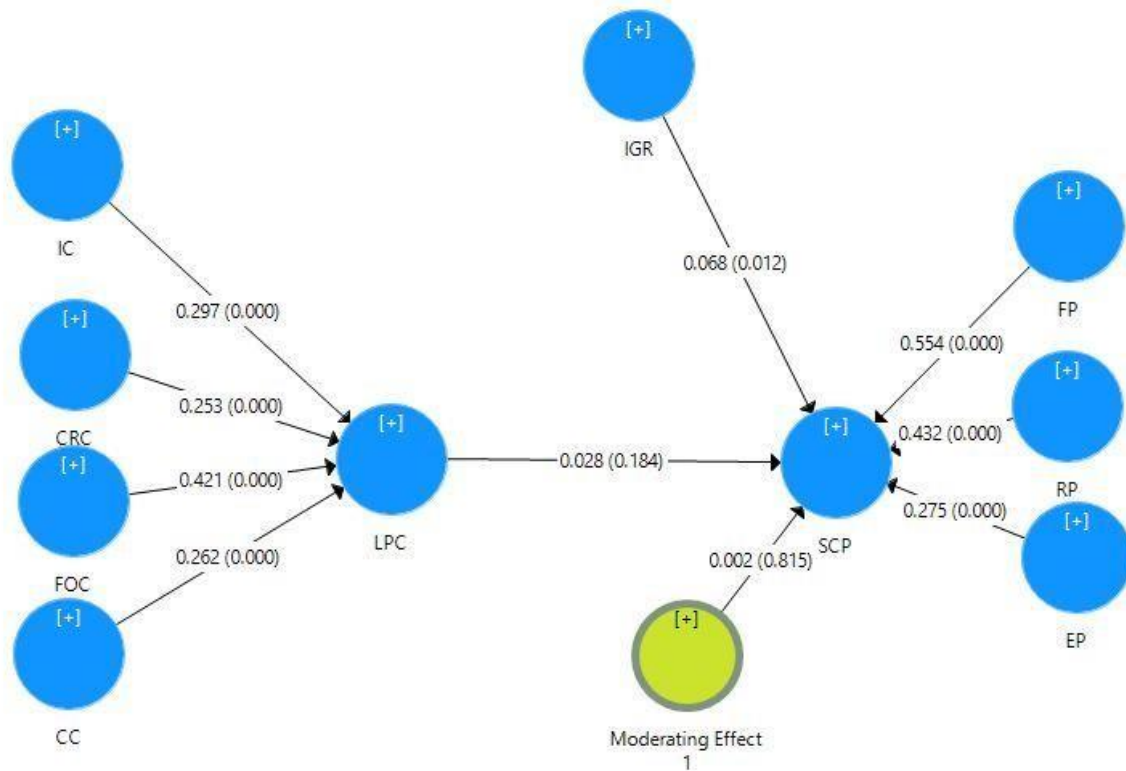


Figure 2.0 Structural Equation Model

4.5 Structural Equation Model Results

Through the use of SmartPLS 3, we created a structural equation model (SEM) to analyze the direct effects and moderating effect. As a result, the SEM was carried out using the three main components of the study, namely supply chain performance, inter-organizational relationship management, and logistics service provider capabilities. Inter-organizational relationship management functioned as a moderating factor between them while supply chain performance and logistics service providers' capabilities remained independent variables and dependent variables, respectively. According to the SEM analysis, only H2 was supported, whereas H1 and H3 were not (Table 4.12).

The three primary factors are supply chain performance, inter-organizational relationships, and logistics service provider, as shown on the hypothesis table (table 4.12). SEM was used to examine each association between the constructs, as shown on figure 2.0. The direct and

moderating effects between the variables were identified via the structural equation model. It was discovered that there is a positive and significant relationship between inter-organizational relationship management and supply chain performance ($\beta=0.068$, $p=0.012$) as well as a positive and insignificant relationship between logistics service providers' capability and supply chain performance ($\beta=0.028$, $p=0.184$). Additionally, inter-organizational relationship management did not mitigate the association between the skills of logistics service providers and supply chain performance, according to SEM results ($\beta=0.002$, $p=0.815$). Therefore, while the second hypothesis was validated, the first and third hypotheses could not be accepted.

4.6 Discussion of Results

This section presents a logical analysis of the research results for each of the hypotheses. As stated, this particular study targeted three distinct aims, and the conclusions of each hypothesis addressed the corresponding objective. The study's primary goal was to determine how the skills of logistics providers affected the efficiency of multinational corporations' supply chains. The second goal was to ascertain the impact of inter-organizational relationship management on the performance of multinational companies' supply chains, and the third goal was to investigate the moderating impact of inter-organizational relationship management on the link between the capabilities of logistics providers and the performance of such chains. 92 respondents who worked for multinational firms in Ghana were contacted via self-delivered and online questionnaires to collect cross-sectional survey data. The study's findings are discussed in the following ways with the aid of a structural equation model (SEM): the capability of logistics service providers and supply chain performance; inter-organizational relationship management and supply chain performance; and the moderating effect of interorganizational relationship management on the relationship between logistics service providers and SCP.

4.6.1 Logistics Service Provider and Supply Chain Performance

The study's primary goal is to determine how the skills of logistics service providers affect the efficiency of global corporations' supply chains. Al Shraaha et al., 2022; Kariko, 2012; Beamon and Kotleba, 2016; Johnson and Leenders, 2015) on the potential influence and effect of logistics service provider skills on the supply chain performance of multinational firms served as the foundation for this study's objective and hypothesis, respectively. Evidence for a beneficial relationship between LSP selection and supply chain performance has been shown by numerous research. Johnson and Leenders (2015) discovered, for instance, that effective LSP collaboration increased order fulfillment rates and decreased lead times, improving supply chain efficiency. The employment of reputable LSPs, according to Beamon and Kotleba (2016), had a favorable impact on supply chain responsiveness and satisfaction with clients. According to these research, the choice of an LSP and the effectiveness of the supply chain are significantly correlated. In contrast to previous research, this study was unable to demonstrate a link between LSP capabilities and supply chain performance. A positive but insignificant relationship between the two variables was found by the SEM. This implies that enhanced supply chain performance is not always guaranteed by LSP capabilities alone.

4.6.2 Inter-Organisational Relationship and Supply Chain Performance

The study's second goal is to investigate how inter-organizational relationship management affects the effectiveness of multinational corporations' supply chains. Asamoah et al., 2021; Moipone et al., 2018; Zhu et al., 2018) submissions of past literature on the potential influence and impact of inter-organisational relationship management on the supply chain performance of international companies served as the basis for the development of the study's aim and hypothesis. The significance of managing inter-organizational relationships in supply chain effectiveness has been emphasized in numerous studies. For instance, Chen and Paulraj (2004) discovered that productive working relationships across supply chain partners had a favorable

effect on a number of performance indicators, including cost savings, responsiveness, and customer satisfaction. Likewise, Zhu et al. (2018) emphasized the beneficial benefits of commitment and trust between supply chain participants on supply chain performance. These studies serve as a basis for analyzing the connection between IRM and supply chain efficiency. Performance of the supply chain and inter-organizational relationship management were found to be significantly positively correlated by the SEM. The results offer solid empirical justification for the link between the effectiveness of the supply chain and inter-organizational relationship management.

4.6.3 The Moderating Effect of Inter-Organisational Relationship Management on the Relationship between Logistics Service Provider and Supply Chain Performance.

The third goal of the study was to ascertain how inter-organizational relationship management affected the link between supply chain performance and logistics service providers. This study's objective and hypothesis were developed using past literature publications (Chen et al. 2019, Liu et al. 2017, and Aziz et al., 2010). The importance of efficient IRM in improving the connection between LSP capabilities and supply chain performance has been emphasized in a number of studies. For instance, Liu et al. (2017) discovered that the beneficial benefits of LSP capabilities on supply chain performance are amplified when firms actively manage their relationships with LSPs. Similar to this, Chen et al. (2019) showed that IRM is essential for maximizing LSP capabilities and obtaining superior supply chain results. These studies imply that IRM may have a mitigating influence on the link between supply chain performance and LSP capabilities. In contrast to previous research, our study was unable to prove that interorganizational relationships significantly influenced the relationship between LSP capabilities and supply chain performance. This indicates that the influence of LSP capabilities on supply chain performance is not greatly amplified by successful IRM techniques.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

A case study of multinational corporations in Ghana was used in the study to investigate the moderating effect of inter-organizational relationship management on the relationship between the capabilities of the logistics provider and supply chain performance. The summary, the findings, the conclusion, and the advice on the study were the main topics of chapter five of this study.

5.2 Summary of Findings

In this study, multinational corporations in Ghana were used as a case study to examine the moderating impact of inter-organizational relationship management on the relationship between the capabilities of the logistics provider and supply chain performance. The following particular aims were investigated in order to address the aforementioned goal. This study aimed to:

- i. To examine the influence of logistics provider's capabilities on supply chain performance of multinational companies.
- ii. To determine the influence of inter-organisational relationship management on supply chain performance of multinational companies.
- iii. To examine the moderating role of inter-organisational relationship management on the relationship between logistics provider's capabilities and supply chain performance of multinational companies.

Using cross-sectional survey data from top and middle managers of international companies that have sufficient knowledge of the capabilities of the logistics service provider as well as the performance of the firm's supply chain, the aforementioned objectives were evaluated. The

following lists the study's key findings.

5.2.1 Logistics Service Provider's Capabilities and Supply Chain Performance

SEM was used to evaluate the influence of logistics service provider capabilities on the supply chain performance of multinational firms in Ghana in order to meet the study's primary goal. According to the results, there is no statistically significant correlation between supply chain performance and the skills of the logistics service provider ($\beta=0.028$, $p=0.184$). The aforementioned finding did not validate the links between supply chain performance and the skills of earlier logistics service providers found through empirical research.

5.2.2 Inter-organisational Relationship Management and Supply Chain Performance

SEM was used to evaluate the effect of inter-organizational relationship management on the supply chain performance of multinational firms in order to meet the study's second goal. According to the findings, inter-organizational relationship management has a direct and statistically significant impact on how well multinational collaboration in Ghana performs along its supply chain ($\beta=0.068$, $p=0.01$). This research backs up previous supply chain performance and inter-organizational relationship management relationships.

5.2.3 Moderating Role of Inter-Organisational Relationship Management on the Relationship between Logistics Provider's Capabilities and Supply Chain Performance of Multinational Companies.

SEM was used to evaluate the moderating impact of inter-organizational relationship management on the relationship between the capabilities of logistics providers and the performance of multinational organizations' supply chains in order to satisfy the third objective of the study. According to the findings, inter-organizational relationship management was unable to modify the association between the capacities of logistics providers and the effectiveness of multinational organizations' supply chains ($\beta=0.002$, $p=0.815$).

5.3 Conclusion

To conclusion the association between LSP capabilities and the success of multinational firms' supply chains was not significantly statistically supported by this study. The results demonstrate the complexity of supply chain management and the importance of taking into account a number of contextual variables when assessing the effects of LSP capabilities.

The study also offers actual data to back up the association between inter-organizational relationship management and successful supply chains. The results highlight the importance of good inter-organizational relationship management techniques for getting better supply chain results. To improve the effectiveness of their supply chains, supply chain managers and practitioners should place a high priority on building and maintaining strong interorganizational relationships.

The moderating influence of inter-organizational relationship management on the relationship between LSP capabilities and supply chain performance was also not sufficiently supported by the study's findings. The results indicate that efficient methods for managing interorganizational relationships do not considerably increase the influence of LSP capabilities on the efficiency of the supply chain. Additional investigation is required to examine the contextual variables and contingencies that could affect this relationship and to find other elements that might help to manage interorganizational relationships in the supply chain effectively. In spite of the moderating impact of IRM on LSP capabilities, practitioners can build methods to optimize supply chain performance by developing a greater understanding of these dynamics.

5.4 Recommendations

In this section of the study, the researcher's recommendations are conveyed by drawing conclusions from the study's findings. The proposals are primarily geared for participants in academics and business.

The results of this study have ramifications for supply chain managers, practitioners, and researchers. When assessing the possible influence of LSP capabilities on their supply chain performance, practitioners should take the larger context and other aspects into account. It emphasizes how crucial it is to support and nurture interorganizational relationship management in order to improve supply chain efficiency. To improve their overall supply chain outcomes, organizations should concentrate on developing trust, communication, and collaboration with their supply chain partners. The contextual variables that impact the association between LSP selection and supply chain performance should be further investigated, according to researchers. The efficiency of LSP capabilities may be influenced by internal supply chain capabilities, coordination processes, and environmental conditions, according to future research.

Future studies could examine the precise processes through which supply chain performance is impacted by policies for managing inter-organizational relationships. Furthering our understanding of this link would involve researching how contextual elements, such as industry traits and cultural influences, moderate the relationship between inter-organizational relationship management and supply chain effectiveness.

To better understand how IRM influences this relationship, future studies might examine other IRM components, such as relational governance systems and collaborative behaviors. To maximize supply chain performance, practitioners should think about a complete strategy to

supply chain management that incorporates both LSP competence building and efficient IRM methods.

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APPENDIX QUESTIONNAIRE SURVEY

This survey was created to gather information about how the COVID-19 has affected the performance of multinational companies in Ghana's supply chains. Your input will be much valued in this regard. Please try your best to complete this quiz. All comments will be treated as confidential and used only for research.

Thank you for your time and cooperation.

SECTION A: DEMOGRAPHIC INFORMATION

Gender

- Male ☐
- Female ☐

Job title

- Manager ☐
- Logistics Manager ☐
- Procurement Manager ☐
- IT personnel ☐
- Supplier ☐
- Other ☐

Years of experience at the current Firm

- Under 2 years ☐
- 2 – 5 years ☐ • 6 – 10 years ☐
- Over 10 years ☐

SECTION B LOGISTICS PROVIDER'S CAPABILITIES (Heide, 1994; Heide and John, 1992; Jap, 1999)

Regarding the capabilities of the logistics provider that are accurate representations of the current state of your company. Please check the boxes next to each statement to show how much you agree or disagree with it. The scales for the items are five-point Likert scales. Strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5).

Innovation Capabilities	1	2	3	4	5
Our 3PL provider uses innovative methods for moving freight and distributing it.					
Our 3PL provider updates the business' operational systems on a regular basis.					
Our 3PL provider uses cutting-edge technology and creative problem-solving techniques.					
Our 3PL provider uses operational simplicity.					
Our 3PL provider uses operational standardization					
Our 3PL provider uses risk and safety mitigation for freight					

Customer Response Capabilities	1	2	3	4	5
There is a customer service management system at our 3PL provider.					
Customized logistics services are provided by our 3PL provider.					
The flexibility of our 3PL provider service allows us to satisfy customer needs.					
Our 3PL provider can maintain a low rate of freight damage and loss.					
Our third-party logistics partner can consistently complete deliveries on time for all clients.					
Our 3PL provider has the ability to address issues and grievances.					

Flexible Operations Capabilities	1	2	3	4	5
Processes have been implemented by our 3PL provider to boost responsiveness to client requirements.					
Our 3PL provider has the flexibility to adapt to changing conditions.					
Our 3PL provider can give speedy courier services.					

Our 3PL provider offers worldwide shipping services.					
Our third-party logistics partner can consistently complete deliveries on time for all clients.					
Our third-party logistics provider can increase delivery frequency.					
Our 3PL provider offers a wide range of operation times (such as weekend or after-hours pickup and delivery).					

Collaborative Capabilities	1	2	3	4	5
Together, our business and the 3PL supplier take advantage of special market opportunities.					
Together, our organization and the 3PL provider search for profitable business opportunities.					
Together with the 3PL supplier, our business creates fresh concepts.					
Our business and the 3PL supplier frequently exchange confidential information.					

INTER - ORGANISATIONAL RELATIONSHIP (Lai et al., 2011)

Regarding the interorganizational relationship that is true to the current state of your company. Please check the boxes next to each statement to show how much you agree or disagree with it. The scales for the items are five-point Likert scales. 1 indicates strong disagreement, 2 disagreement, 3 neutral agreement, 4 agreement, and 5 strong agreement.

Inter-organisational relationship	1	2	3	4	5
We have dealt with our trading partners in an open and honest manner.					
We, along with our trading partners, uphold the privacy of the information they obtain from us.					
There is no need to investigate the trade that occurs between us and our trading partners.					
To connect us with our trading partners, organizations use laid-back systems.					
When necessary, our trading partners help us out.					

SUPPLY CHAIN PERFORMANCE (Koçoğlu et al., 2011; Won Lee et al., 2007; Asamoah et al., 2021)

Please circle the number that best represents your level of agreement or disagreement with the following statements regarding the firm's overall supply chain performance. The scales for the items are five-point Likert scales. Strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5).

Reliability Performance	1	2	3	4	5
Our business provides extremely dependable items through its supply chain partners.					
Our business provides customers with highquality items through supply chain partners.					
Together, our company's supply chain partners and we have improved the quality of our products.					
Together with supply chain partners, our business accelerates the fulfillment of customer orders.					
Our company's inventory turns rise with the help of supply chain partners.					

Efficiency Performance	1	2	3	4	5
With supply chain partners, our company lowers the cost of transportation both incoming and outbound.					
Our company lowers warehouse and inventory holding expenses with help from supply chain partners.					
Together with supply chain partners, our business satisfies all product delivery deadlines.					
In comparison to industry, our company and its supply chain partners achieve agreed-upon unit costs.					

Flexibility Performance	1	2	3	4	5
Our company efficiently provides a range of goods and services thanks to supply chain partners.					
Our business offers specialized goods and services with a variety of features in conjunction with supply chain partners.					
With the help of supply chain partners, our business successfully satisfies various customer volume requirements.					
In compared to the industry, our company's supply chain partners have quick customer response times.					
Our company adjusts to and accomodates changes in demand along with supply chain partners.					