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DEPARTMENT OF SUPPLY CHAIN AND INFORMATION SYSTEMS

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**SUPPLY CHAIN INTEGRATION AND FIRM PERFORMANCE. THE MODERATING
ROLE OF TRUST**

BY

PHILIP KWABENA BAAH

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DECLARATION

I hereby declare that this submission is my own work towards the Master of Science Degree in Logistics and Supply Chain Management and that, to the best of my knowledge, it contains no material previously published by another person or material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

Philip Kwabena Baah

(PG9259021)

Signature

Date

Certified by:

Dr. Dorcas Nuerthey

(Supervisor)

Signature

Date

Certified by:

Prof. David Asamoah

Head of Department

Signature

Date

DEDICATION

This thesis is dedicated to my family: Ethel Semefa Kpeglo, Aseda Amponsah, Adom Boatemaa and Phidel Aseye Amoako Baah.



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I thank the Almighty God for making it possible for the successful completion of this thesis.

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ABSTRACT

Researchers across the globe have expressed the essence of the direct relationship between the performance of firms and their supply chain integration. The study's primary aim was to examine the moderating effects of trust in the relationship between supply chain integration and firm performance. To achieve this objective, the study developed these three specific objectives: the effect of supply chain integration on firm performance, the effect of trust on firm performance, and the moderating role of trust on the relationship between supply chain integration and firm performance. The study adopted a quantitative research approach and sampled 400 Small and Medium-sized Enterprises (SMEs) using convenience sampling, whereas purposive sampling was used to select managers within the SMEs. The data were collected using a questionnaire and analysed using descriptive and inferential statistics. The study result showed that there was a positive statistically significant relationship between supply chain integration and firm performance ($\beta = 0.808$, $t = 26.529$, $p < 0.001$). Again, the result showed that there was a positive statistically significant relationship between trust and firm performance ($\beta = 0.485$, $t = 10.707$, $p < 0.001$). Finally, the result showed a positive significant moderation effect of trust in the relationship between supply chain integration and firm performance ($\beta = 0.055$, $t = 3.149$, $p = 0.002$). The study recommended that managers should frequently engage employees when developing any strategies for the company. This approach makes them (employees) feel a sense of belonging and in return helps the firm gain an advantage in the market.

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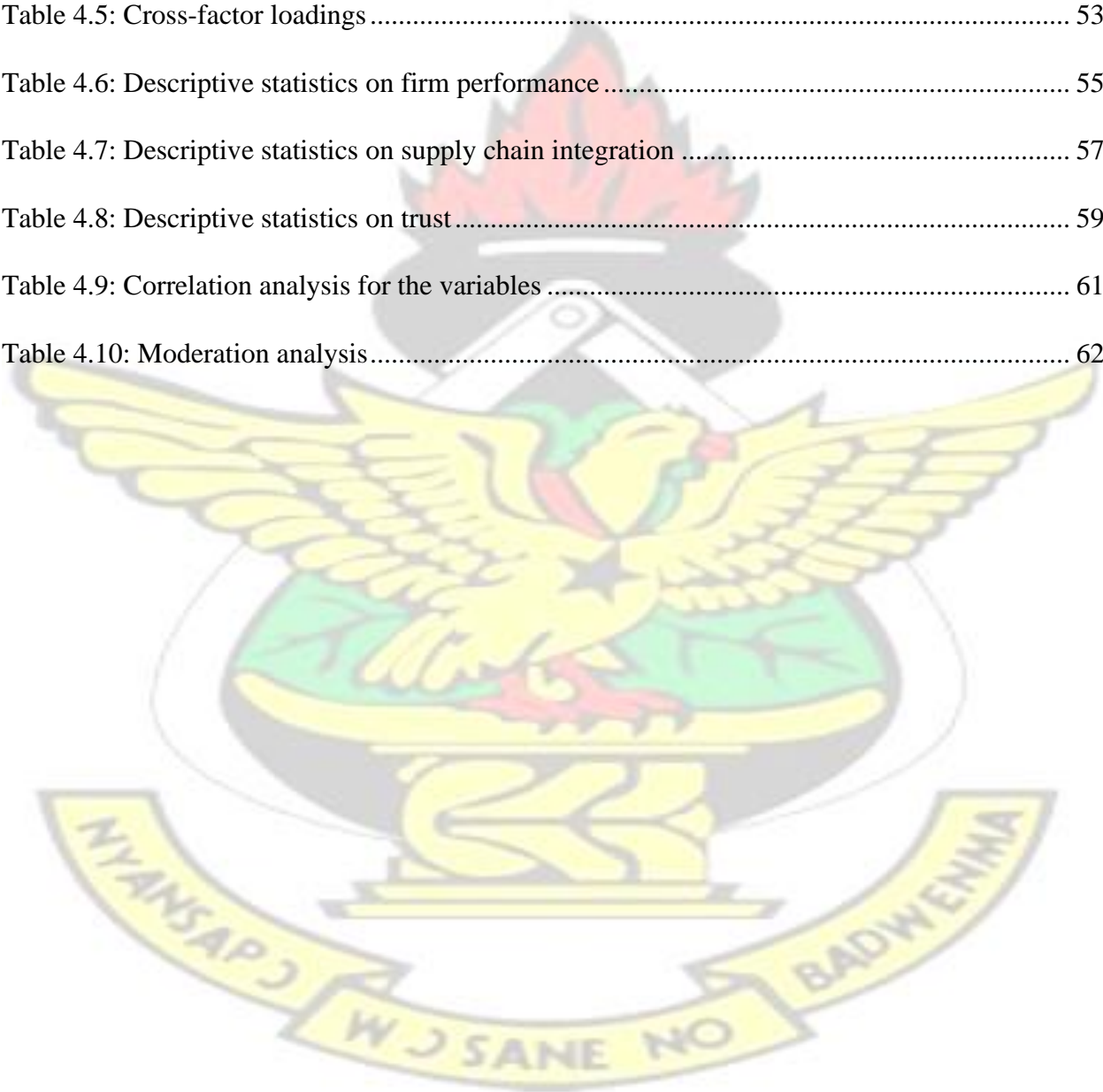
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LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
CA	Cronbach Alpha
CR	Composite Reliability
FMP	Firm Performance
GDP	Gross Domestic Product
IFC	International Finance Corporation
NBSSI	National Board for Small-Scale Industries
SCI	Supply Chain Integration
SEM	Structural Equation Modelling
SMEs	Small and Medium Size Enterprises



CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Researchers across the globe have expressed the essence of the direct relationship between the performance of firms and their supply chain integration. As such, firms have considered the need for collaboration, communication and mutually beneficial supply chain associations to build stability and resilience as well as boost cordial business operations (Nkirote, 2019). Nsiah and Prempeh (2016) define a supply chain as the involvement of parties (manufacturers, suppliers, wholesalers and retailers) in fulfilling a client request, both indirectly and directly.

Supply chain integration according to Kumar et al. (2017) is defined as the level to which all activities in an organisation and the activities of its customers, suppliers and other supply chain members are combined. Thus, supply chain integration means that business organisations can manage risks while offering services that satisfy the demands of customers (Khanuja and Jain, 2018). Supply chain integration is made up of dimensions including information integration, internal integration, supplier integration, financial integration and customer integration (Doe and Offei, 2022). The relevance of supply chain integration is that it enables business organisations to work collectively to streamline distribution and logistics activities to increase long-term performance (Annan et al, 2016).

Nevertheless, the main barriers to integration include information sharing, organisational structure and inventory responsibility (Sabir and Irfan, 2014). Additionally, other supply chain disruptions come in the form of financial market irregularities, unforeseen competition and rapid changes in the demands of customers (Katsaliaki et al., 2021). This means that supply chain integration is a key element in the performance of firms. Firm performance refers to the effectiveness and efficiency of a business to accomplish its financial and market goals (Pakurar et al, 2019). In the same way, Taouab and Issor (2019) note that business performance is useful in determining how well products and services generate high and long-term profits. However, according to Nagehan et al (2017), the influence that supply chain

integration has on firm performance is built on trust between supply chain partners (suppliers, manufacturers and customers). Trust is the ability to believe in the goodwill or reliability of a firm or individual (Kusi, 2020). Also, trust includes honesty, credibility, mutual understanding and respect among the supply chain partners (Tarigan et al, 2020). This seems to suggest that trust is very crucial in supply chain integration, which may affect the performance of firms.

In line with this, studies (Hendijan and Saei, 2020; Uwamahoro, 2018; Doe and Offei, 2022) have been conducted concerning supply chain integration and firm performance. Hendijan and Saei (2020) examined the moderating role of demand uncertainty on the relationship between supply chain integration and firm performance in Iran.

Findings from the study indicated that demand uncertainty positively moderates supply chain integration and firm performance. In Rwanda, Uwamahoro (2018) examined the effects of supply chain integration on performance. Results from the study indicate that customer, internal and supplier integration have a positive impact on a firm's performance. Also, Doe and Offei (2022) assessed the impact of supply chain integration on the performance of firms in Ghana. The study found that there is a weak positive relationship between supply chain integration and firm performance.

The studies provided valuable information about the study topic although Hendijan and Saei's (2020) study focused on examining the moderating role of demand uncertainty which is quite different from this study topic which is examining the moderating role of trust. Additionally, the majority of the studies were conducted in countries outside the Ghanaian environment because socio-cultural differences that exist between separate countries, make it difficult to be applied in Ghana. Therefore, this current study examines the moderating role of trust in the relationship between supply chain integration and firm performance.

1.2 Problem Statement

In the current, ever-evolving and highly competitive landscape of the business world, supply chain integration has become a critical strategy for firms to enhance their performance and

competitiveness. This, however, challenges firms today to develop their business capabilities and competencies through supply chain collaboration while meeting customers' demands (Mose, 2015). Annan et al. (2016) assert that supply chain integration enables players in the supply chain process to control activities in the business effectively and efficiently. This will lead to the smooth movement of goods, services, and information, while also meeting customer expectations with affordable pricing and speedy service (Mutwiri et al., 2019). However, the effectiveness of supply chain integration in driving firm performance may not be uniform across all organisations (Ansah and Akipelu, 2021). One significant factor that could influence this relationship is trust. Trust is a fundamental element in supply chain relationships, as it affects information sharing, collaboration, and overall integration efforts among supply chain partners (Vieira et al., 2013). Accordingly, various studies (Subburaj et al., 2020; Mideva and Moronge, 2019; Kusi, 2020) have been conducted to assess the effect of supply chain integration on firm performance.

Thus, Subburaj et al. (2020) examined the effects of supply chain integration on firm performance in India. Although this study provides valuable information on supply chain integration and firm performance, the study was carried out outside Ghana, and thus may have unique business environments and cultural factors. Nonetheless, this study will present information on supply chain integration and firm performance in the Ghanaian environment to present a varied viewpoint.

Additionally, Mideva and Moronge (2019) investigated the influence of supply chain integration on the performance of manufacturing firms. The study was conducted in Kenya and made use of the quantitative approach through questionnaires for data collection, but the study did not elaborate on the essence of integrating supply chain elements to increase business performance. Nevertheless, this study will touch on the supply chain dimensions such as customer, supplier, financial, and information integration to achieve performance.

In Ghana, Kusi (2020) assessed the mediating role of trust in the relationship between supply chain integration and operational performance. The study focused on how trust mediates the relationship between supply chain integration and operational performance neglecting to assess the moderating role of trust in the relationship between supply chain integration and the firm performance financial aspect of the business. This means that none of the studies

specifically examined the moderating role of trust. Therefore, it is imperative to investigate and comprehend the moderating role of trust in the context of supply chain integration and firm performance, in order to provide practical insights for businesses aiming to optimise their supply chain strategies and ultimately enhance their performance, looking at both financial and operational aspects. Hence, to address these gaps, the study will assess the moderating effects of trust in the relationship between supply chain integration and firm performance.

1.3 Research Objectives

The main objective of the study is to examine the moderating effects of trust in the relationship between supply chain integration and firm performance. Also, the specific objectives of the study include:

- i. To examine the effect of supply chain integration on firm performance.
- ii. To examine the effect of trust on firm performance.
- iii. To examine the moderating effect of trust on the relationship between supply chain integration and firm performance.

1.4 Research Questions

- i. What is the effect of supply chain integration on firm performance?
- ii. What is the effect of trust on firm performance?
- iii. What is the moderating effect of trust on the relationship between supply chain integration and firm performance?

1.5 Justification of the study

The study will be beneficial to organisations that seek to utilise trust in responding to and collaborating with other partners in the supply chain network. By understanding the moderating effects of trust, organisations can develop strategies to enhance trust levels with their supply chain partners. This, in turn, can lead to improved collaboration, faster response times, and more effective problem-solving, ultimately improving the overall supply chain efficiency. Additionally, the study will be useful to the manufacturing sector regarding the influence of supply chain integration on the performance of the firm. Furthermore, the study will be of great essence to supply chain managers in understanding the need for developing

trust to enhance firm performance. Thus, understanding the interplay between trust, supply chain integration, and firm performance can help manufacturing companies gain a competitive edge. Those that excel in fostering trust within their supply chain networks can operate more efficiently and cost-effectively, leading to a stronger market position. Moreover, manufacturers can use the findings from this study to formulate strategies that strengthen their supply chain partnerships.

Also, this study adds to the body of knowledge in supply chain management, offering insights into the moderating role of trust in supply chain integration. Researchers can use this study as a launching point for the development of new models, frameworks, and methodologies for evaluating and enhancing trust within supply chain networks. Likewise, students pursuing degrees in business, supply chain management, or related fields can benefit from the study's findings, gaining a deeper understanding of the practical implications of trust in the context of supply chain operations.

1.6 Research methodology

The research strategy adopted was a quantitative approach as well as a descriptive research design. The study population was made up of SMEs in the Greater Accra Metropolis. A sample of 400 owners of SMEs were selected using both convenience and purposive sampling methods. The data used for the study was primary data. The data was collected using questionnaires. The data collected was analysed using inferential statistics such as regression and correlation.

1.7 Scope of the study

The study covered firms in the manufacturing sector of Ghana to achieve the study's aims and objectives. This decision was made taking into consideration the need to assess whether trust plays a moderating role in the relationship between supply chain integration and firm performance. Additionally, the study was delimited to a descriptive research design and quantitative approach through questionnaires for collecting data. Also, data analysis will be performed using descriptive and inferential statistics.

1.8 Limitation of the study

The study experienced some limitations which included selection of the sample for the study. The study location is large thus making selection tedious. In addressing this challenge, the study adopted both convenience and purposive sampling methods. This reduced the burden of sampling. Another challenge encountered was obtaining approval from the managers of the SMEs. Some of the managers were not forthcoming thus the researcher had to engage them more than twice to get their approval. This delayed data collection for some days.

1.9 Organisation of the study

There are five chapters in this study. Chapter one serves as a general introduction to the concepts of supply chain integration, firm performance and trust. It contains the background of the study, problem statement, research objectives, research questions, research hypotheses, significance, scope and organisation of the study.

Chapter two presents existing literature to expand on the concepts of supply chain integration, firm performance and trust. The theoretical review, empirical review, conceptual framework and summary are also covered in this chapter.

The third chapter discusses the research methods to be utilised to address the study. This covers the research design, research approach, population of the study, sample size, sampling technique, data collection instrument, data collection procedure, data analysis and ethical consideration.

Also, the findings, data analysis and discussions on the data obtained are presented in the fourth chapter. Finally, the research's key findings, conclusion and recommendations are summarised in chapter five. It summarises the distinct findings under each objective and gives recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two presents a review of the literature on the current study topic. The chapter helps establish the relationship between the variables in the study concerning similar works conducted. The chapter, therefore, consists of the conceptual review, theoretical review, empirical review, conceptual framework and hypothesis development.

2.2 Conceptual review

This section contains a comprehensive explanation of major terms identified in the research. These include the concept of supply chain integration, firm performance and trust.

2.2.1 The Concept of Supply chain integration

The business environment requires organisations to integrate their supply chains to meet contemporary challenges. Integration simply means different units working collectively as one entity (Nkirote, 2019). Supply chain integration is defined as the level at which a manufacturer strategically cooperates with partners in the supply chain process and collectively handles inter and intra-organisation processes (Annan et al, 2016). According to Mozafari and Tafazzoli (2012), supply chain integration is a planned tool that seeks to reduce operating costs and thus, improve values for the stakeholders by connecting all participating players throughout the system, from suppliers to customers. The purpose of supply chain integration is to attain a systematic and effectual flow of services and products, decisions, information and money. This is to produce the utmost value to customers at high speed and low cost (Sabir and Irfan, 2014).

Georgie et al (2014) state that supply chain integration encourages businesses to reconfigure their abilities and assets externally and internally to strengthen the overall supply chain and improve the long-term performance of the firm. Additionally, Hong and Nahm (2015) added that supply chain integration is characterised by cross-organisation operation processes with suitable levels of partnerships, information sharing and operational coordination. According to Kusi (2020), integration among partners in a supply chain is important in building trust so that systems can function effectively. Thus, more cooperative systems in integration require

a closer and more mutually encouraging relationship between customers, the firm and suppliers. Supply chain integration involves many dimensions and these are customer integration, supplier integration, internal integration, information integration, external integration and financial integration (Doe and Offei, 2022).

Information integration entails joint communication, supporting technology and shared information transfer between firms in the supply chain process (Mutwiri et al., 2019). Internal integration refers to the ability to deliberately align and correlate internal functions and processes to accomplish the utmost performance of a firm (Ebrahimi, 2015). Wado (2018) explains that customer integration involves diverse practices and activities including identifying customer expectations and meeting their needs, having direct contact with customers, managing customer complaints, integrated problem-solving actions, and establishing long-lasting relationships with customers. The benefit of customer integration to firms is to improve market share and customer loyalty.

According to Amoako-Gyampah et al. (2019), supplier integration is characterised by stimulating quality improvements, shared technologies, sharing of information, long-term contracts, trust, integrated processes, assisting suppliers in increasing production processes, enhancing supplier's general capabilities and shared gains from development efforts.

External integration is defined as the ability of two or more firms to establish shared relations to control their interactions when working together (Singh and Sohani, 2011).

2.2.2 The Concept of Firm performance

Every firm exists to attain a specific goal. Performance prepares the basis for a firm to evaluate how well it is progressing concerning predetermined objectives, decide on future actions with the purpose of how to institute improvement of performance and identify areas of weakness and strength (Felizardo et al., 2017). According to Taouab and Issor (2019), firm performance refers to several activities that help in establishing business goals and monitoring the progress towards the target set. This helps create adjustments to achieve objectives more effectively and efficiently. Firm performance is a comprehensive assessment of how effectively and efficiently a business organisation operates and accomplishes its goals. This multifaceted

concept encompasses a range of factors that gauge a company's success, including its financial outcomes, operational proficiency, strategic achievements, and competitive stance (Agyapong and Attram, 2019). Different stakeholders, such as investors, shareholders, creditors, employees, and customers, may have different criteria for evaluating firm performance based on their interests and objectives. However, some of the key indicators and dimensions of firm performance are marketing performance, operational performance, financial performance and strategic performance (Naknok, 2022).

Market performance assesses how well a firm is positioned relative to its competitors in the market. This assessment typically considers various crucial factors such as its market share, levels of customer satisfaction, brand recognition, and the strength of customer loyalty (Darmon et al., 2013). Operational performance evaluates the effectiveness with which a company conducts its everyday operations, encompassing metrics like production effectiveness, the management of its supply chain, inventory turnover, and efforts to minimise waste or defects (Gitau, 2016). Financial performance includes metrics such as return on equity (ROE), profit margin, revenue, earnings per share (EPS), return on investment (ROI) and cash flow. Financial performance is often a primary focus as it reflects the firm's ability to generate profits and manage its finances effectively (Tudose et al., 2022). Strategic performance on the other hand, involves assessing whether the company's strategic decisions are aligning with market trends and competitive dynamics (Farida and Setiawan, 2022).

Additionally, achieving optimal firm performance is a multifaceted endeavour, and one crucial avenue towards this goal lies in the adept management and collaboration within the supply chain, involving both upstream and downstream partners.

Furthermore, Nsiah and Prempeh (2016) assert that effective and efficient firm performance could be accomplished through the good practice of supply chain together with fostering strong relationships with partners in the supply chain process. Within the context of supply chain management, several forms of integration play a pivotal role in shaping and bolstering a firm's performance. These forms of integration include customer integration, external

integration, supplier integration, information integration and internal integration. Each of these integration types contributes distinctively to the overall performance of the firm and collectively serves as a potent driver of success (Uwamahoro, 2018). Customer integration involves collaborating closely with customers to understand their preferences, needs and expectations. By ensuring that products, services, and processes are in sync with customer needs, companies can boost customer satisfaction, generate demand, and cultivate loyalty. This, in turn, leads to heightened sales and revenue, a crucial element of a firm's performance (Afshan and Motwani, 2018). External integration extends beyond the customer to include other stakeholders such as distributors, and partners in the broader industry ecosystem. Collaborating effectively with these external entities can lead to improved market reach, reduced costs, and increased market share, all of which positively impact a firm's performance (Ali et al, 2023).

Again, ensuring a strong, collaborative relationship with suppliers can lead to a more streamlined and cost-effective supply chain. Timely and reliable access to raw materials and components, as well as improved supply chain transparency, can reduce production costs and enhance product quality, directly influencing a firm's competitiveness and profitability (Amoako-Gyampah et al., 2019). Similarly, the seamless flow of information throughout the supply chain is crucial for informed decision-making and efficient operations. Information integration allows for real-time visibility into inventory levels, demand patterns, and production schedules, enabling firms to respond swiftly to market changes and minimise disruptions. This agility contributes to improved operational efficiency and customer satisfaction (Som et al., 2019). Also, within the firm itself, different departments and functions must work collaboratively to align their objectives and processes with the overarching supply chain strategy. When departments such as production, marketing, and finance are aligned, it leads to better coordination and resource allocation. Effective internal integration ensures that all aspects of the organisation are synchronised, leading to reduced internal friction, faster decision-making, and optimised resource allocation, ultimately contributing to enhanced firm performance (Zhang et al., 2018).

In summary, a powerful means by which firms can achieve heightened levels of performance is the effective practice of supply chain management, coupled with the various forms of integration. It not only drives cost savings but also enhances customer satisfaction, increases agility, fosters innovation and ultimately enables firms to thrive in today's dynamic and competitive business environment. In essence, effective supply chain integration serves as a cornerstone for achieving and sustaining optimal firm performance.

2.2.3 The Concept of Trust

Trust has recently received attention from business practitioners and academics, whether interpersonal trust, organisational trust, or trust in transactional or business interactions. Although several research works exist, the definition of trust is elusive. Few constructs have had many diverse definitions, which has led to a lot of confusion.

Take, for instance, an earlier definition by Moorman et al. (1993), which described it as a person's readiness to depend on another person in whom they have faith. While such a definition indicates confidence in a person's behaviour, the definition by Bibb and Kourdi (2004) looks at positive intent and forgiveness. It means the ability to reconnect with another person or life goals despite any ill actions or behaviours, which signifies trust. Schilke and Cook (2013) offer a more contemporary definition of trust as the preparedness or openness to be vulnerable to another person's behaviour.

While these studies (Moorman et al., 1993; Bibb and Kourdi, 2004; Schilke and Cook, 2013) look at trust from the perspective of confidence, believing the best of people (positive intent and forgiveness) and taking risks (being ready to be vulnerable) respectively, they all agree on the same idea: reliability and dependability.

Thus, since trust appears to be a multidimensional construct, the common meaning is about demonstrating reliability and dependability through commitment and consistency. In other words, people develop trust when the other parties or persons are consistent between their actions and promises, as well as their inner values.

Di et al., (2020) also explained that there are five (5) faces of trust and these are reliability, benevolence, willingness to risk, openness, honesty and competence.

a. Reliability

Reliability is described as the extent to which one can count on another to come through with a need (Barki et al, 2015). According to Schilke and Cook (2013), reliability combines benevolence with a sense of predictability where predictability alone is not sufficient because a person can be consistently malevolent. In terms of reliability, what is required from an individual or a group of persons may be tangibles such as raw material from a supplier or intangibles such as a listening ear. Mitchell et al (2016) explained that most interactions do not occur simultaneously but rather unfold over time thus the role of reliability in relationships. For instance, there is a lag between when a person makes a commitment and when the recipient knows that the commitment has been fulfilled. However, what assurance can a promise bring if it were not for uncertainty in future times. Therefore, the degree to which one believes an outcome will be forthcoming and positive reflects the extent of trust. In other words, although there will be uncertainties, the role of reliability indicates a level of trust.

b. Benevolence

According to Johnston et al (2015), the sense of benevolence is the most common face of trust as it is the confidence that a person's well-being or something in the care of another will be protected by a trusted person or group of persons. With the sense of benevolence, one can count on the goodwill of another to act in his or her best interest. In terms of relationships, future deeds or action may not be specified, however, there will be a mutual attitude of good will. This is where trust plays a role since it is the assurance that a person will not exploit another's vulnerability or take advantage of another when an opportunity is available (Di et al., 2020). In the case of the sense of benevolence, trust involves the acceptance of vulnerability to another person's possible but not expected ill will (Johnston et al, 2015).

c. Openness

Openness is described as the extent to which relevant information is not withheld (PytlikZillig et al., 2016). According to Di et al (2020) openness is a process where an individual makes him or herself vulnerable by sharing any form of information with others. This openness is an indication of a kind of reciprocal trust where there is confidence that information will not be exploited as well as recipient having the same feeling of confidence in return (Di et al., 2020). Schilke and Cook (2013) also assert that people who are guarded in the information they are willing to share provoke a sense of suspicion making others wonder what is being hidden and why. Based on this Barki et al (2015) asserts that distrust breeds distrust as such people who are unwilling to extend trust by being open usually live isolated lives.

d. Honesty

Honestly speaks of authenticity, character and integrity thus it is defined in relation to trust as the expectancy that a promise, work written or verbal statement of a person or group of persons can be relied on (PytlikZillig et al., 2016). Mitchell et al (2016) explained that a statement can be regarded as truthful if it conforms with what really happened from the person's perspective as well as when commitments made about future actions are kept. This is further explained by Barki et al (2015) who states that in the area of honesty, a correspondence between a person's statement and deeds reveals integrity. Similarly, an acceptance of responsibility for an action and avoidance of distorting the truth to shift blame to another indicates authenticity.

e. Competence

Competence is being able through one's abilities and skills act on an intention (Di et al., 2020). In other words, there will be times when good intentions may not be enough. Thus, one can only be trusted when they can be effective. Mitchell et al (2016) explained that when one is dependent on another and some level of skills and abilities is involved to fulfil an expectation, then the person may not be trusted even if he or she means well. The lack of trust is then associated with the lack of skill or ability which is translated as competence. For instance, a patient of a young surgeon may feel the doctor wishes to heal him or her, but the poor

performance record of the doctor will lead to a lack of trust in the doctor. This scenario reveals a situation that speaks about trust being related to competence.

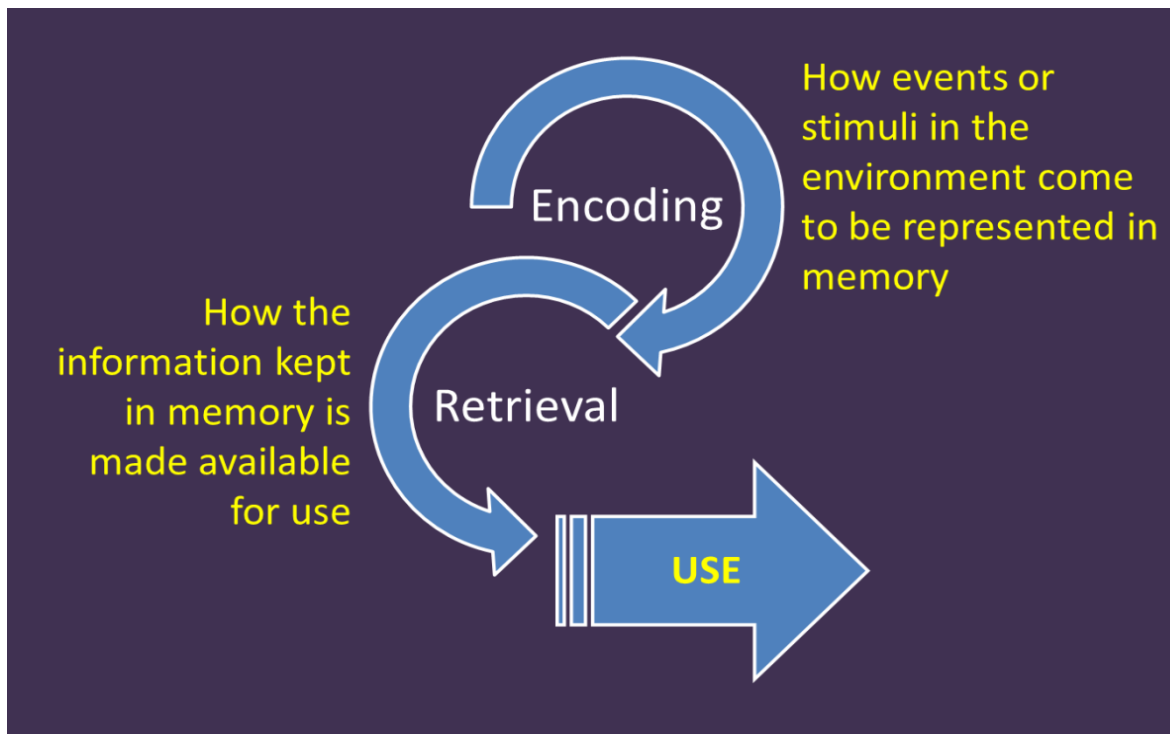
2.3 Theoretical review

This segment illustrates the relevance of network theory and transaction cost theory to the discussion on how trust moderates the connection between supply chain integration and firm performance.

2.3.1 Network Theory

Gordon Bower introduced the network theory to explain the mood-congruency effect (Bower, 1981). The mood-congruency effect describes the consistency between a person's emotional state and their experiences or views of larger contexts, events or situations (Dong et al., 2014). It means that when an individual is happy, he or she will better remember happy situations or materials than sad situations. Thus, one of the salient aspects of network theory is the importance of a mood state. It (mood state) serves as a cue for recalling information and making associations with coincident events (Dong et al., 2014).

In other words, emotions serve as a point of contact to retrieve associated events. Network theory is a conceptual framework that has gained substantial importance in understanding the dynamics of various complex systems, including supply chains. It provides a way to analyse and model relationships among interconnected entities, emphasising the significance of connections and interactions within a network (Borgatti and Halgin, 2011). Figure 2.1 gives a visual presentation of the theory.



Source: Bower (1981). Mood and memory.

FIGURE 2.1: AN INFOGRAPHIC OF OUR MEMORY AND ENCODING COGNITIVE PROCESSES.

The theory plays a crucial role in comprehending the relationship between supply chain integration and firm performance. Supply chain integration pertains to the degree to which different components within a supply chain, including suppliers, producers, distributors, and retailers, cooperate and exchange information in order to optimise processes and improve overall effectiveness (Awad and Nassar, 2020). Conversely, firm performance pertains to a company's capacity to realise its strategic aims and targets, which may encompass metrics like profitability, customer satisfaction, and market share (Herciu, 2017).

Network Theory underscores the concept that supply chains are intricate networks of interrelated elements, rather than standalone entities. Within this network framework, businesses serve as nodes, and the links connecting them symbolise diverse interactions like communication, transactions, and resource exchange (Onday, 2016). These interactions give rise to interdependencies, which can exert substantial influences on a company's performance.

Again, network theory can be understood through several aspects such as node and edge analysis, connectivity, resilience, resource sharing and innovation (Mari et al., 2015). Mari et al. (2015) further noted that network theory offers the opportunity to pinpoint critical players and relationships that have an impact on integration and performance within a supply chain by identifying key entities (nodes) and interactions (edges).

In terms of connectivity, network theory enables companies to visualise and assess the interconnectedness and associations within their supply chains. It aids in pinpointing crucial collaborators, identifying constraints, and uncovering opportunities for enhancing integration (Wellenbrock, 2013). Furthermore, network theory can assess a supply chain's resilience by analysing its structure. Understanding how disruptions propagate through the network can lead to better risk management and contingency planning (Kim et al, 2015).

Again, network theory emphasises the possibility of sharing resources among partners within a supply chain, which has the potential to result in reduced costs, increased operational efficiency and elevated performance for the involved firms (Koçoğlu et al., 2011). Also, collaborative networks foster innovation by enabling the exchange of ideas and knowledge among partners.

This innovation can lead to product improvements and increased competitiveness (Malacina and Teplov, 2022). When examining the relationship between supply chain integration and firm performance, network theory offers insights into how different levels of integration influence a firm's position within the supply chain network. It suggests that firms with higher levels of integration tend to occupy more central positions, enabling them to access valuable resources, information, and opportunities more effectively (Sharma et al., 2022). However, trust plays a crucial moderating role in the relationship between supply chain integration and firm performance. Trust refers to the belief that supply chain partners will act in a predictable, reliable, and mutually beneficial way (Uca et al, 2017). Trust is essential because it influences the willingness of firms to share sensitive information, collaborate closely, and invest in long-term relationships (Uca et al, 2017).

In a highly integrated supply chain, trust acts as a lubricant that facilitates smoother interactions. When trust is high, firms are more likely to share valuable data, engage in joint

decision-making, and coordinate their activities effectively. This, in turn, leads to improved supply chain performance, reduced lead times, and increased customer satisfaction (Baah et al., 2021). Conversely, in the absence of trust, supply chain integration efforts may falter. Firms may hesitate to share critical information, fearing it could be misused or result in unfair advantages for one party. This lack of trust can hinder effective collaboration, lead to misunderstandings, and ultimately harm overall performance (Xia et al., 2023).

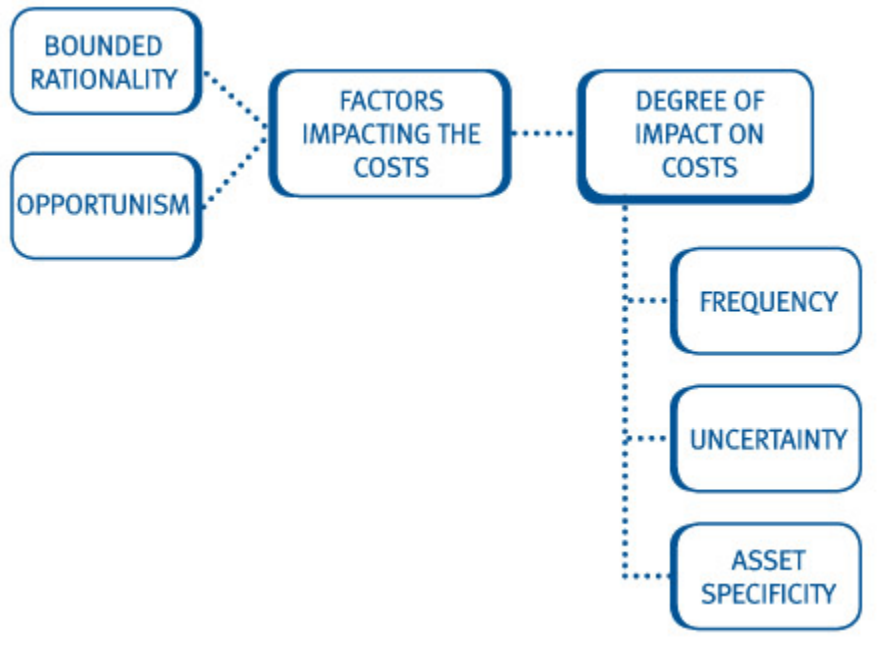
Hence, from the perspective of the role of trust in the relationship between supply chain integration and firm performance, the network theory can be relevant. It is because supply chain integration is a continuous process optimised only when employees, customers and suppliers work together to improve relationships and are aware of all activities in the supply chain. Employees, customers and suppliers can work together and improve their relationships only when there is trust. In the context of network theory, this trust comes about when, say, a customer can recall specific situations, where an employee shows empathy and wants help, or when a company recalls a supplier's history of making upfront investments in their operations.

2.3.2 Transaction cost theory

Transaction Cost Theory was developed by economist Oliver E. Williamson (Sent and Kroese, 2022). The theory states that costs come about as a result of transactions made through market systems, notably those related to finding business or trading partners, as well as creating and enforcing contracts (Cuypers et al., 2021). In short, the theory means to conduct transactions is a costly endeavour and some examples are negotiating contracts, monitoring performance and resolving disputes. Transaction cost theory distinguishes between two types of transactions namely, market transaction and hierarchy (firm) transaction. Market transaction occurs when a buyer and a seller interact in an open market through price and contracts (Cuypers et al., 2021). These transactions are guided by a price mechanism. Hierarchy transactions on the other hand occur within an organisation where decision-making authority is centralised. Hierarchy transactions are guided by managerial directions.

Transaction cost theory also acknowledges uncertainty and bounded rationality (Carlson et al., 2019). Here, the theory indicates that economic agents often face uncertainty and also have bounded rationality which means they have limited information and cognitive abilities

to make utmost decisions. This can lead to suboptimal choice, which affects transaction cost. The theory also suggests that firms and markets represent different governance mechanisms to minimise transaction costs (Carlson et al., 2019). Firms for instance internalise transactions to reduce uncertainty and transaction costs. Thus, firms use hierarchical structures to coordinate and control activities. Figure 2.2 shows a virtual presentation of the transaction cost theory.



Source: Cuypers, et al., (2021). Transaction cost theory: Past progress, current challenges, and suggestions for the future

FIGURE 2.2: TRANSACTION COST THEORY

Transaction cost theory has various applications across different fields and industries. One of the practical applications of transaction cost theory is the "make-or-buy" decision, where organisations evaluate whether to produce goods or services internally (make) or outsource them from the market (buy) (Hennart et al., 2022). Transaction cost considerations, such as asset specificity and uncertainty, influence this decision. Firms can use transaction cost theory to determine the level of vertical integration that makes the most economic sense. They

evaluate whether to own and operate all stages of production or rely on specialised suppliers and distributors.

Supply chain integration refers to the extent to which different components of a supply chain, including suppliers, manufacturers, and distributors, work closely together and share information, processes, and resources (Annan et al., 2016). Higher levels of supply chain integration typically led to smoother and more efficient operations. Firm performance on the other hand, can be measured in various ways, including financial indicators (e.g., profitability, return on investment), operational efficiency, and customer satisfaction (Naknok, 2022). As such, improved supply chain integration can lead to better firm performance by reducing costs, improving product quality, and enhancing customer service.

Also, when organisations enter into contracts with other parties, they use transaction cost theory to design contracts that specify roles, responsibilities, and performance expectations (Rindfleisch, 2019). These contracts are aimed at reducing the likelihood of disputes and opportunistic behaviour. In supply chain management, companies use transaction cost theory to optimise their supply chains (Shahab et al., 2021). They assess the transaction costs associated with various suppliers and distribution channels to minimise costs and disruptions.

The various forms of applications of the theory illustrates how transaction cost theory is a versatile framework that can help organisations and policymakers make decisions that minimise transaction costs, improve efficiency, and optimise resource allocation in various contexts. It is particularly useful in situations where there are uncertainties, information asymmetries, and the potential for opportunistic behaviour among parties involved in transactions.

Transaction cost theory, while influential in explaining economic transactions and organisational decisions, has faced several criticisms and limitations from scholars and researchers over the years. Critics argue that transaction cost theory relies heavily on the assumption of rational self-interest, where individuals and organisations act solely to maximise their utility or economic gains (Shahab et al., 2021). This assumption may oversimplify human behaviour and neglect other important factors, such as ethics, social norms, and altruism. Moreover, while trust is acknowledged as a factor in transaction cost

theory, some critics argue that it is often treated as a residual or unexplained variable (Rindfleisch, 2019). Trust is a complex and multidimensional concept that is challenging to measure and incorporate fully into the theory.

Trust is a critical factor that complements transaction cost theory (Rindfleisch, 2019). While transaction cost theory helps explain the challenges and costs associated with economic transactions, trust can act as a mechanism for mitigating these costs and facilitating more efficient, cooperative, and mutually beneficial transactions. The concept of trust, therefore, becomes useful in this theory. In other words, firms or organisations can reduce transaction costs such as contracts or disputes through trust. The ability to negotiate contracts or resolve disputes is often conditioned by the level of trust inherent in the organisation or between the parties involved.

Thus, from the perspective of the role of trust in the relationship between supply chain integration and firm performance, the transaction cost theory can be relevant. As mentioned earlier, supply chain integration is effective when all parties, including employees, clients and suppliers cooperate to strengthen relations and are informed of all supply chain activities. In the context of the transaction cost theory, it means that because of the good relationship between companies and their suppliers, they are capable of ignoring any bureaucracies in the supply chain that can lead to conflicts and unnecessary administrative expenses. Thus, this informs the high level of trust that exists in their relationship. In other words, high levels of trust can help mitigate transaction costs and enhance the positive impact of supply chain integration on firm performance, while low levels of trust may exacerbate transaction costs and potentially hinder performance.

2.4 Empirical review

This section of chapter two presents a review of literature from various authors which relates to the current study topic. Here, the review is conducted purposely from data obtained from demonstration, experimentation and observation.

2.4.1 Supply Chain Integration and Firm Performance

Supply chain integration is a planned tool that seeks to reduce operating costs and improve values for the stakeholders by connecting all participating players throughout the system. The

concept of supply chain integration is initiated purposely to attain a systematic and effective flow of services and products, decisions, information and money. There is no doubt that supply chain integration has a positive connection with firms' performance and this has been proven by most existing studies (Kumar et al, 2017; Uwamahoro, 2018; Ansah et al, 2017; Asnordin et al, 2021; Ahmed et al, 2021) conducted on supply chain integration.

Kumar et al (2017) explored the influence of supply chain integration within the context of the UK's food sector. The study, titled "Impact of Supply Chain Integration on Performance in the UK's Food Sector", primarily aimed to understand the ramifications of supply chain integration on the performance metrics of firms in this specific sector. To achieve this, the study employed a mixed-methods approach, harmoniously blending quantitative and qualitative research techniques. The methodological repertoire comprised a rigorous review of pertinent literature coupled with primary data collection. The salient findings from the research indicated that supply chain integration substantially reduces the overarching logistics costs, thereby bolstering profitability margins.

Furthermore, it was observed that firms with integrated supply chains exhibited enhanced agility in responding to external environmental changes. However, the study's primary focus on the food sector might render its insights less applicable to diverse industries, presenting a limitation. Consequently, Kumar et al (2017) suggest that future research should broaden its horizons, encompassing a myriad of sectors to offer a more panoramic view of supply chain integration's implications.

Again, in the study which focused on the effects of Supply Chain Integration on Manufacturing Firms in Rwanda, Uwamahoro (2018) delved deep into the manufacturing landscape of Rwanda to discern the impact of supply chain integration on firm performance. Positioned against the backdrop of Rwanda's manufacturing sector, the research was driven by an intent to unearth the relationship between various facets of supply chain integration (internal, customer, and supplier integration) and their ensuing influence on the overall performance of firms. To gather empirical data, Uwamahoro (2018) adopted a cross-sectional approach, employing structured questionnaires that garnered responses from 258 employees.

This rich dataset was subsequently analysed through Pearson's correlation and Structural Equation Modelling (SEM). The insights drawn highlighted a positive correlation between supply chain integration and both the operational and overall performance of firms. Nevertheless, one limitation could be the geographic and sector-specific focus, which might constrain the generalisability of the findings. Uwamahoro recommends that subsequent studies might benefit from a broader geographic scope and perhaps an exploration of other industrial sectors, providing a more diversified perspective on the subject.

Also, Ansah et al (2021) conducted a study on the role of competitive advantage in supply chain integration. The study was anchored in the bustling business environment of Ghana, where data was meticulously gathered from 120 firms. The primary objective was to discern whether achieving a notable level of supply chain integration can truly bolster performance metrics across the board. To this end, the research adopted a quantitative methodology, leveraging questionnaires as the primary data collection instrument. The amassed data underwent rigorous analysis, employing regression models, factor analysis, and descriptive statistics.

The revelations from the study were profound: a well-executed supply chain integration significantly enhanced performance across all facets of the surveyed firms. However, a potential limitation of the study lies in its singular geographic focus on Ghana, which might influence the universality of its findings. To further this line of inquiry, Ansah et al. (2021) suggest that future researchers explore different geographical terrains and perhaps delve deeper into the nuanced aspects of how competitive advantages are cultivated through supply chain dynamics.

Finally, Asnordin et al (2021) examined the impact of supply chain integration on supply chain performance in manufacturing firms in Malaysia. Set against the vibrant backdrop of Malaysia's manufacturing sector, the study aimed to elucidate the degree to which supply chain integration could elevate the performance of a firm's supply chain operations. To underpin their investigation, the study embarked on a comprehensive review of existing literature that pertained directly to their topic of interest. The primary findings from the research were illuminating. The study discerned that the incorporation of supply chain integration mechanisms within firms not only enhanced the efficacy of their supply chain

operations but also had a cascading positive effect on the broader performance metrics of manufacturing companies. However, as with many studies of this nature, its primary focus on Malaysian manufacturing firms might pose a limitation in terms of its broader applicability. In light of this, Asnordin et al (2021) propose that future explorations in this area should not only transcend geographic boundaries but also dive into various industrial sectors to cultivate a richer, more holistic understanding of supply chain integration dynamics.

Furthermore, Ahmed et al. (2021) assessed how firm performance in the manufacturing sector of Pakistan is influenced by supply chain integration, encompassing internal, supplier, and customer integration. The study utilised a cross-sectional design and adopted a quantitative approach, gathering data from 267 managers in the manufacturing sector through questionnaires. The collected questionnaire data underwent analysis using regression and correlation analysis methods. The research revealed that financial performance benefited positively from internal and supplier integration, whereas competitive performance was significantly influenced by customer integration. This simply means that there is a positive effect of supply chain integration on firm performance.

In China, Liu and Chiu (2021) examined the impact of supply chain integration on firm performance. Information from 264 employees within the supply chain industry was gathered through a questionnaire survey. The data analysis employed statistical tools, namely Partial Least Square Structural Equation Modelling (PLS-SEM), and utilised SMARTPLS version 3.0. The study revealed that firm performance is positively impacted by supply chain integration. Likewise, Huo et al (2014) conducted a study on the effect of supply chain integration on firm performance in China. Data from 604 Chinese manufacturers were gathered through survey methodology. Again, the moderating effects were examined using hierarchical linear regression analysis. The findings indicated that the integration of supply chains positively influences the performance of the firm.

Similarly, Hendijani and Saei (2020) looked at the effect of supply chain integration on firm performance in Iran. A total of 84 firms were included in the study for data collection using a questionnaire survey. Moreover, the collected data was analysed using regression analysis. The study showed that both internal and external integration of supply chains positively contributes to the operational and financial performance of firms.

Finally, Masa'deh et al (2022) investigated the effect of supply chain integration on firm performance in Jordan. The quantitative approach via questionnaire surveys was used to collect data from 317 respondents in the food and beverage industry. Data analysis was carried out using regression analysis. The study showed a direct and substantial impact of supply chain integration on operational performance.

Study	Focus	Methodology	Findings	Limitations
Kumar et al. (2017)	Impact of supply chain integration in the UK's food sector	Mixed methods: literature review and primary data collection	Integration reduces logistics costs and improves profitability; enhanced agility in responding to environmental changes	Focused on the food sector; needs broader industry analysis
Uwamahoro (2018)	Effects of supply chain integration on manufacturing firms in Rwanda	Cross-sectional study with structured questionnaires, Pearson's correlation, and SEM	Positive correlation between supply chain integration and operational and overall firm performance	Geographically limited to Rwanda
Ansah et al. (2021)	Competitive advantage in supply chain integration in Ghana	Quantitative approach with questionnaires, regression models, factor analysis, and descriptive statistics	Well-executed supply chain integration enhances firm performance across all facets	Singular geographic focus on Ghana
Asnordin et al. (2021)	Impact of supply chain integration on supply chain performance in Malaysia	Literature review	Supply chain integration enhanced the efficacy of supply chain operations and overall manufacturing firm performance	Limited to Malaysian manufacturing firms

Ahmed et al. (2021)	Impact of supply chain integration on firm performance in Pakistan's manufacturing sector	Cross-sectional design; Quantitative approach	Positive effect of supply chain integration on financial and competitive performance in the manufacturing sector of Pakistan	Limited generalisability due to the specific focus on the manufacturing sector of Pakistan.
Liu and Chiu (2021)	Impact of supply chain integration on firm performance in China's supply chain industry	Questionnaire survey; PLS-SEM	Positive impact of supply chain integration on firm performance in China's supply chain industry	Reliance on self-reported data and potential bias in responses from survey participants .
Huo et al. (2014)	Effect of supply chain integration on firm performance in Chinese manufacturing sector	Survey methodology; Hierarchical regression	Positive influence of supply chain integration on the performance of Chinese manufacturers	Potential self-reporting bias, limited scope in exploring specific industries within the manufacturing sector

Hendijani and Saei (2020)	Effect of supply chain integration on firm performance in Iran	Questionnaire survey; regression analysis	Positive contribution of both internal and external supply chain integration to operational and financial performance in Iranian firms	Limited sample size, potential cultural biases, and industry-specific findings
Masadeh et al. (2022)	Impact of supply chain integration on firm performance in Jordan's food and beverage industry	Questionnaire surveys; Regression analysis	Direct and substantial impact of supply chain integration on operational performance in Jordan's food and beverage industry	Limited generalisability to other industries, potential response bias in survey data

2.4.2 Trust and firm performance

Every organisation exists to efficiently work toward achieving higher organisational goals with high performance through the ongoing practice of trust. It shows that trust is a crucial component or prerequisite for any business. A substantial body of research indicates that changes in trust have a particularly significant impact on the performance of firms, directly and indirectly. Also, the effect of trust on firm performance can be either positive or negative.

Regarding the positive outcomes, Brown et al. (2014) demonstrated that in the study on employee trust and work performance in England. The study, titled "Employee Trust and Work Performance in England", aimed to provide a theoretical framework elucidating the potential mechanics underpinning this relationship. Utilising data from the 2004 and 2011 Workplace and Employee Relations Survey (WERS), the research illuminated a positive correlation between employee trust and multiple facets of firm performance, including labour productivity, financial performance, and product and service quality. The insights suggest that

trust fosters collaboration, making employees more productive, which culminates in superior financial performance and product quality.

However, the study's limitation might lie in its specific focus on England. Future research could expand this exploration across various cultural and geographical contexts to validate the universality of these findings.

Also, Jiang and Chen (2016) research, conducted within the Chinese corporate landscape, revolved around the notion of organisational trust and its impact on aspects like learning and creativity. The study titled "Organisational Trust and its Effect on Learning and Creativity in China", was underpinned by data gathered from both supervisors and employees via questionnaires.

The findings were telling: trust within an organisation significantly bolstered learning and creativity. This implies that in an environment imbued with trust, employees often feel empowered, leading to a consistent acquisition of new knowledge and ideas. However, the study's inherent cultural and regional specificity (China) might limit its broader applicability. Consequently, Jiang and Chen advocate for more geographically diverse studies to further enrich our understanding.

In the case of the study by Lay et al. (2020), which asserts the backdrop of the Fave Hotel in Indonesia, Lay et al. (2020) delved into how trust can influence firm performance. The research demonstrated that trust could spur members within an organisation to go beyond their formal roles, thereby contributing to the firm's success. By conducting a survey, the study found that trust precipitated positive outcomes for performance, particularly by enhancing organisational citizenship behaviour. However, a potential limitation stems from the study's exclusive focus on one hotel in Indonesia. Lay et al (2020) recommend that subsequent studies could encompass a broader range of organisations to ascertain the widespread applicability of their findings.

Furthermore, Xu et al. (2019) conducted a study on the relationship between trust and firm performance. Data was collected through a review of literature and analysis performed. The study identified a positive correlation between trust and firm performance, indicating that the presence of trust has the potential to boost overall firm performance.

Again, Rahayuningsih (2019) conducted a study on the positive impact of organisational trust. A systematic literature review approach was used in gathering information and further analysed. The findings indicated that the positive effect of organisational trust includes effective communication, turnover tendency and innovative behaviours which contribute to the enhancement of overall firm performance.

Similarly, Karhapaa et al (2022) assessed the effect of trust on performance of private and public organisations in Finland. This was a qualitative case study in which data was collected from respondents and analysed using the abductive analysis technique. According to the results of the study, the study found a favourable correlation between trust in management and performance outcomes, such as job performance.

In the case of the negative outcomes of trust on firm performance,

Botwe et al (2016) demonstrated that in their study on the drivers of trust and how they affect firm performance. Thus, the study's exploration sought to discern the drivers of trust and their resultant impact on performance. By adopting a descriptive research design, paired with both quantitative and qualitative methodologies, the study found that dwindling levels of trust directly corresponded to subpar firm performance. Specifically, this manifested in the form of reduced employee participation in decision-making processes. The primary constraint of the study might be its methodology, which might not capture the entire spectrum of trust dynamics. Botwe et al (2014) underscore the need for future research to delve deeper into the multifaceted dynamics of trust, possibly incorporating more diverse methodologies and broader participant demographics.

Overall, while these studies (Brown et al, 2014; Jiang and Chen, 2016; Lay et al, 2020; Botwe et al., 2016; Xu et al, 2019; Rahayuningsih, 2019; Karhapaa et al., 2022) establish that there exists a relationship between trust and firm performance, their findings show that the effect of trust on firm performance can be either positive or negative. The positive outcomes include increased labour productivity, improved financial performance and improved product and service quality, learning and creativity, and improved organisational citizenship behaviours and the negative outcomes can include a low level of engagement or participation and poor

decision-making processes (Brown et al, 2014; Jiang and Chen, 2016; Lay et al, 2020; Botwe et al, 2016).

Study	Focus	Methodology	Findings	Limitations
Brown et al. (2014)	Employee trust and work performance in England	Data from the 2004 and 2011 Workplace and Employee Relations Survey	Positive correlation between employee trust and firm performance, including productivity, financial performance, and product quality	Limited to England; needs more cultural and geographical contexts
Jiang and Chen (2016)	Organisational trust and its impact on learning and creativity in China	Questionnaires from supervisors and employees	Trust within an organisation significantly bolstered learning and creativity	Cultural and regional specificity to China
Lay et al. (2020)	Trust's influence on firm performance at the Fave Hotel in Indonesia	Survey methodology	Trust enhanced organisational citizenship behaviour, contributing to firm performance	Focus on one hotel; needs broader organisational study
Botwe et al. (2016)	Drivers of trust and their effect on firm performance	Descriptive research with quantitative and qualitative methods	Decreasing trust levels linked to poor firm performance, seen in reduced employee participation in decision-making	Methodology may not fully capture trust dynamics
Xu et al. (2019)	Relationship between trust and firm performance	Review of literature and analysis	Positive correlation between trust and firm performance, suggesting trust has the potential to enhance overall firm performance	Limited to a review of existing literature, may not capture real-time or specific

				industry nuances
Rahayuningsih (2019)	Positive impact of organisational trust	Systematic literature review	Organisational trust positively impacts effective communication, turnover tendency and innovative behaviours contributing to firm performance.	Relies on existing literature, potential bias in the selection of studies included in the review
Karhapaa et al. (2022)	Effect of trust on performance in private and public organisations	Qualitative case study using abductive analysis	Favourable correlation found between trust in management and performance outcomes, such as job performance	Limited to specific context (Finland), qualitative nature may limit generalisability, potential subjectivity in abductive analysis

2.4.3 Trust in the relationship between supply chain integration and firm performance

The role of trust has been identified as a crucial factor in the relationship between supply chain integration and firm performance. It is, therefore, not surprising that it has been in the interest of many studies (Zhang et al., 2016; Capaldo and Giannoccaro, 2015; De Almeida et al., 2016; Uca et al., 2017; Sutanto and Japutra, 2021; Panahifar et al., 2018; Setiawan et al., 2022; Gwaltu and Mrisho, 2023). In the study by Zhang et al. (2016) on supplier integration and firm performance, they examined the moderating effects of internal integration and trust among manufacturing firms in Vietnam. Using structural equation modelling and collecting data from 261 manufacturing firms, the study found that trust had insignificant but positive and negative outcomes on the relationship between supply chain integration and the performance of the manufacturing firms. It means that if there is a high level of trust between

the manufacturing firms and their suppliers, they can improve performance through product designs, reduce lead time and cost and increase sales. On the other hand, if there is no trust, performance is not likely to improve and this will be reflected in their (manufacturing firms) product designs, lead time, cost and sales.

While the study by Zhang et al. (2016) showed that trust had an insignificant effect on the relationship between supply chain integration and firm performance, the study by Sutanto and Japutra (2021) showed that trust had a significant effect on supply chain integration and performance. It meant that there was good tentative evidence that trust played a crucial role in the causal relationship between supply chain integration and firm performance. Sutanto and Japutra (2021) demonstrated this in their empirical study of the supply chain activities at Indomaret outlets in Indonesia, using the SPSS program and multiple linear regression. The study found that through trust, supply chain integration improved the performance of the outlets, as demonstrated by their positive relationships with their suppliers.

In the case of the study by Panahifar et al. (2018), they examined the critical role of information sharing and trust in the relationship between supply chain collaboration and firm performance in Iran. Using a structural equation modelling through partial least squares, the study assessed 189 firms and found that through information sharing and trust, there were improvements in their (189 firms) level supply chain collaboration. Supply chain collaboration underpins the idea of supply chain integration because they both achieve the common goal of creating awareness among participants regarding activities in all aspects of the supply chain, which can only be achieved when they come together and work as a team (Moharana et al., 2015). Thus, it was, therefore, not surprising that the study found improvements in the sales of the firms and their overall performance.

In addition, De Almeida et al. (2016) investigated the significance of trust and collaboration among companies as a means to alleviate the bullwhip effect in supply chain management. The study employed a qualitative research approach via interviews to collect data from companies in Latin America, Germany and North America. Data analysis was carried out thematically. The study revealed that the integration of knowledge and processes in a supply chain is significantly impacted by trust and collaboration. This influence plays a key role in mitigating the bullwhip effect and enhancing overall business performance.

Furthermore, Uca et al. (2017) conducted a study on the influence of trust within the supply chain on a company's performance via collaborative engagement and gaining a competitive edge. Data from businesses operating in Turkey was gathered through the use of questionnaires. The statistical techniques employed for data analysis encompassed confirmatory factor analysis, AMOS version 23, and structural equation modelling. The study found that trust within the supply chain has a favourable impact on supply chain collaboration, consequently enhancing firm performance. The research suggests that trust could play a moderating role in the connection between supply chain collaboration and firm performance, underscoring its significance as a pivotal factor in the success of supply chain collaboration. It is therefore apparent that trust has the potential to act as a moderating factor in the link between dependence and supply chain integration, resulting in enhanced collaboration performance and operational effectiveness. Furthermore, it exerts a positive influence on supply chain collaboration and plays a substantial moderating role in the connection between supplier integration and firm performance.

Again, Capaldo and Giannoccaro (2015) examined how trust affects performance in the supply chain using the moderating role of interdependence. Information for the study was obtained through a review of literature for data collection and analysis. The findings showed that the distinct pattern of interdependence inherent in the supply chain significantly moderates the link between trust and performance within the supply chain.

In Tanzania, Gwaltu and Mrisho (2023) assessed the mediating role of process innovation in the relationship between trust and supply chain performance. Survey data was gathered from 262 senior executives representing 128 companies engaged in the export of agricultural products. Again, inferential statistics were employed to evaluate the connection between the variables. The research findings revealed that trust exhibits a positive and beneficial correlation with supply chain performance, and it was also observed that process innovation plays a mediating role in the association between trust and supply chain performance. Since trust has previously been established as a significant factor in enhancing supply chain performance, it can be said that trust moderates the relationship between supply chain integration and firm performance.

Finally, Setiawan et al (2022) explored how the trust in suppliers influences a company's performance by examining the mediating roles of information sharing and collaboration. In the study, a sample of Eighty-Five (85) manufacturing companies was surveyed. Data was collected through a questionnaire utilising a five-point Likert scale. Again, the hypotheses were analysed using smartPLS software. The study revealed that a positive correlation exists between trust in the supplier and both information sharing and collaboration. Consequently, these factors contribute positively to firm performance.

Overall, the studies (Capaldo and Giannoccaro, 2015; Zhang et al., 2016; De Almeida et al., 2016; Uca et al., 2017; Panahifar et al., 2018; Sutanto and Japutra, 2021; Setiawan et al., 2022; Gwaltu and Mrisho, 2023) demonstrated the moderating effect of trust on the relationship between supply chain integration and firm performance. The findings of these studies (Zhang et al., 2016; Sutanto and Japutra, 2021; Panahifar et al., 2018) revealed that trust played a crucial role in how supply chain integration improved firm performance through quality product designs, reducing lead time and cost, increasing sales and improving relations between firms and suppliers.

Table 2.3: Summary of key findings

Study	Focus	Methodology	Findings	Limitations
Zhang et al. (2016)	Supplier integration and firm performance	Structural equation modelling with 261 manufacturing firms in Vietnam	Trust had an insignificant effect on the relationship between supply chain integration and firm performance, but had positive and negative outcomes	Limited generalizability, focus on manufacturing firms in Vietnam.
Sutanto and Japutra (2021)	Supply chain integration and performance at	SPSS with multiple linear regression	Trust had a significant positive effect on supply chain integration and	Limited to Indomaret outlets in Indonesia, may not be

	Indomaret outlets		improved performance at the outlets	universally applicable
Panahifar et al. (2018)	Role of information sharing and trust in supply chain collaboration	Structural equation modelling through partial least squares with 189 firms in Iran	Information sharing and trust improved supply chain collaboration, which in turn enhanced firm performance	Limited to Iranian firms, may not represent global supply chain dynamics.
De Almeida et al. (2016)	Investigate trust and collaboration in alleviating the bullwhip effect in supply chain management	Qualitative research approach via interviews with companies in Latin America, Germany, and North America	Trust and collaboration significantly impact knowledge and process integration, mitigating the bullwhip effect, and enhancing business performance	Limited generalizability due to focus on specific regions; qualitative nature may lack statistical robustness
Uca et al. (2017)	Explore the influence of trust within the supply chain on company performance through collaborative engagement	Data collected through questionnaires from businesses in Turkey; Employed statistical techniques including confirmatory factor analysis and structural equation modelling	Trust within the supply chain positively impacts collaboration, enhancing firm performance; Suggests a moderating role of trust in the link between collaboration and performance	Limited to Turkish businesses, potential response bias in self-reported data
Capaldo and Giannocaro (2015)	Examine how trust affects performance in the supply chain with the moderating role of	Literature review for data collection and analysis	Interdependence in the supply chain moderates the link between trust and performance	Reliance on existing literature may limit novelty; generalizability depends on the scope of the

	interdependence			literature reviewed
Gwaltu and Mrisho (2023)	Assess the mediating role of process innovation in the relationship between trust and supply chain performance in Tanzania	Survey data from 262 senior executives in 128 companies exporting agricultural products; Inferential statistics used	Trust positively correlates with supply chain performance; Process innovation mediates the association between trust and performance	Limited to Tanzania, potential bias in self-reported survey data
Setiawan et al. (2022)	Explore how trust in suppliers influences a company's performance, examining the mediating roles of information sharing and collaboration	Survey of 85 manufacturing companies; Data collected through questionnaires; smartPLS software used for analysis	Positive correlation between trust in suppliers and information sharing, collaboration, contributing to firm performance	Limited to manufacturing companies, potential response bias in self-reported data

2.5 Conceptual framework

The conceptual framework of the study presents a map work of the relationship between the variables that form the study topic. The conceptual framework presents an idea of understanding obtained from the study topic.

Independent Variable

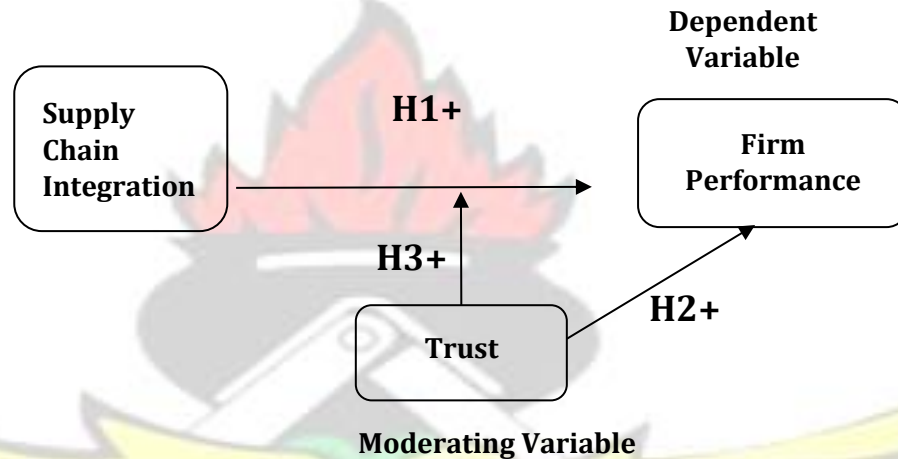


FIGURE 2.3: A CONCEPTUAL FRAMEWORK TO ASSESS THE MODERATING ROLE OF TRUST IN THE RELATIONSHIP BETWEEN SUPPLY CHAIN INTEGRATION AND FIRM PERFORMANCE

Figure 2.3 presents the relationship between trust, supply chain integration and firm performance. Here, supply chain integration forms the independent variable, trust forms that moderating variable and firm performance also forms the dependent variable. Supply chain integration is characterised by cross-organisation operation processes with suitable levels of partnerships, information sharing and operational coordination. Kusi (2020) indicated that Supply chain integration encourages businesses to reconfigure their abilities and assets externally and internally to strengthen the overall supply chain and improve the long-term performance of the firm. Thus, supply chain integration positively relates to a firm's performance. Among partners, integration in a supply chain is important to build trust so that systems can function effectively (Hong and Nahm, 2015).

Existing studies (Zhang et al., 2016; Sutanto and Japutra, 2021; Panahifar et al., 2018) have shown that trust moderated the relationship between supply chain integration and firm performance. It means that if there is a high level of trust between the manufacturing firms and their suppliers, they can improve performance through product designs, reduce lead time, cost and increase sales. On the other hand, if there is no trust, performance is not likely to improve and this will reflect in factors such as product designs, lead time, cost and sales. According to the transaction cost theory, supply chain integration is effective when all parties, including employees, clients and suppliers cooperate to strengthen relations and are informed of all supply chain activities.

Hypothesis:

***Hypothesis 1 (H1):** There is a positive and significant effect of supply chain integration on firm performance.*

Supply chain integration involves aligning key business processes and functions within and across companies to enhance efficiency and competitiveness and accordingly various researchers have examined the relationship between supply chain integration and firm performance. For instance, Kumar et al. (2017) study in the UK found that supply chain integration reduces logistics costs and improves profitability; enhanced agility in responding to environmental changes. This suggests that a positive and significant effect on firm performance could stem from reduced costs and streamlined operations. This, in turn, enhances customer satisfaction and overall financial performance. Additionally, the positive relationship between supply chain integration and firm performance can be linked to network theory. Network theory suggests that the relationships and interactions among various entities within a network can influence the overall performance of the network (Borgatti & Halgin, 2011). In the context of supply chains, a well-integrated network implies smooth communication, efficient coordination, and rapid information flow. This, in turn, can enhance the overall performance of the firms involved (Onday, 2016).

Thus, when supply chain entities are integrated, they form a network where information, resources, and capabilities can be shared seamlessly. This integration allows for better coordination, reduced lead times, and improved responsiveness to market demands (Koçoğlu

et al., 2011). Again, network theory posits that a well-connected and integrated network is more resilient and adaptable to changes (Sharma et al., 2022). In the context of supply chain integration, this resilience can translate into improved firm performance.

Hypothesis 2 (H2): *There is a positive and significant effect of trust on firm performance.*

Trust plays a crucial role in business relationships as it leads to stronger, longer-lasting relationships with customers, suppliers, and other stakeholders. In other words, a trusting relationship with suppliers might result in more favourable terms, timely deliveries, and access to innovation (Baah et al., 2021). A positive and significant effect of trust on firm performance suggests that trust facilitates smoother interactions, cooperation, and mutually beneficial outcomes. Internally, trust among employees can lead to improved collaboration, knowledge sharing, and innovation.

When individuals trust each other, they are more likely to take risks, share information, and work towards common goals. This can have a direct impact on a firm's performance by fostering a positive and productive work environment. Consequently, a substantial body of research indicates that changes in trust have a particularly significant impact on the performance of firms. For example, in a study conducted by Brown et al. (2014), the study found a positive correlation between employee trust and firm performance, including productivity, financial performance, and product quality. Again, this positive relationship can be linked to network theory.

Network theory provides a framework for understanding how trust, as a relational element within a network, can positively influence various aspects of firm performance, including information flow, adaptability, resource mobilisation, collaboration and the development of long-term relationships. High levels of trust create a conducive environment for effective network interactions, contributing to the overall success of the participating firms (Wellenbrock, 2013).

Hypothesis 3 (H3): *There is a moderating effect of trust in the relationship between supply chain integration and firm performance.*

This hypothesis suggests that trust can influence how supply chain integration affects firm performance. A moderating effect implies that the strength or direction of the relationship between supply chain integration and firm performance depends on the level of trust present. For example, in a highly trusting environment, the positive effects of supply chain integration may be amplified. Trust could facilitate more open communication, cooperation, and information sharing, enhancing the benefits derived from integration (Jiang and Chen, 2016).

On the contrary, in a low-trust environment, the positive effects of supply chain integration may be hindered. Lack of trust can lead to resistance, reluctance to share critical information, and a reluctance to fully engage in integrated processes (Susanto and Othman, 2021). Therefore, the relationship between supply chain integration and firm performance may be weaker or less favourable in the absence of trust.



CHAPTER THREE

RESEARCH METHODOLOGY AND PROFILE OF STUDY AREA

3.1 Introduction

Chapter three presented the research methodology that was used to conduct the study. The research methodology covered the research strategy, research design, population of the study, sampling technique and sample size, types and sources of data, data collection method, data analysis, data validity and reliability, and ethical considerations.

3.2 Research Strategy

The gradual process that controls how research should be conducted is referred to as the research strategy (Malhotra, 2017). There are three common research strategies namely quantitative, qualitative and mixed methods (Sarwono, 2022). The qualitative research strategy is more about exploring and understanding complex phenomena and thus, gathers non-numerical data through observations, interviews or content analysis (Tenny et al., 2022). Quantitative approach on the other hand is all about measurable data and numbers (Apuke, 2017). Mixed methods approach uses a mix of quantitative and qualitative data collection and analysis (Almaiki, 2016) In conducting this study, the research strategy employed was a quantitative approach, chosen to effectively address the study's objectives. The quantitative approach is defined as the collection and analysis of numerical data through the use of particular statistical processes to answer questions like what, who, when, how much, and how (Apuke, 2017). The quantitative approach is advantageous due to its ability to reduce the bias of the researcher during data collection and analysis (Eyisi, 2016). Thus, the quantitative approach was useful for this study due to the decreased research bias facilitated by statistical processes.

3.3 Research design

Research design is defined as the architectural blueprint for a study, mapping out the plan and structure for conducting research. It serves as the comprehensive framework and strategy that guides researchers in gathering, analysing, and interpreting data (Khanday and Khanam, 2019). Some common kinds of research designs are correlational, cohort, experimental, cross-sectional, longitudinal, exploratory, case study and descriptive research design, each suited to

answer specific questions (Pawar, 2020). This study adopted the descriptive research design. The descriptive research design involves a form of research that seeks to gather information to systematically describe a situation of a population (Ansari et al., 2022). A descriptive research design enables the researcher to just describe what has happened and does not require the researcher to control variables to form causal relationships (Patel and Patel, 2019). Hence, the descriptive design was useful to this study in describing the relationships between the variables and the phenomenon under study.

3.4 Population of the study

The population refers to entities, individuals and organisations that one intends to understand and to whom the findings of the research can be generalised (Casteel and Bridier, 2021). The population of the study covered Small and Medium-sized Enterprises in the Greater Accra Region. The International Finance Corporation (IFC) in a 2017 report estimated that generally, there are approximately 300,000 SMEs in the Greater Accra Region. Nevertheless, the number may have altered in the subsequent years. Universally, it seems that there are a remarkable number of SMEs in the Greater Accra Metropolis, but it is difficult to ascertain an exact number because of the absence of current and accurate data.

3.5 Sampling technique and sample size

Sampling involves the use of techniques to select a subset of people to estimate the characteristics of a population (Singh and Masuku, 2014). Thus, this section provides the methods that were used to obtain the sample for the study. These methods include sampling techniques and sample size calculation.

3.5.1 Sample size calculation

Sample size refers to a division of a population who are selected to represent the entire group of members that is of interest to the study (Oribhabor and Anyanwu, 2019). The common ways for calculating sample sizes are done through manual approaches and statistical software (Singh and Masuku, 2014). The sample size was calculated using Yamane's formula.

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

Source: Yamane (1967)

$$n = \frac{300,000}{1 + 300,000 (0.05)^2}$$

$$n = \frac{300,000}{750}$$

$$n = 400$$

Hence, approximately 400 SMEs were used as the sample for the study.

3.5.2 Sampling technique

Sampling technique refers to the methods used to select a subset of individuals or data points from a larger population (Van Haute, 2011). There are two techniques used in sampling and they include probability and non-probability sampling. According to Jamil (2018), probability sampling is a process in which the population of interest are not selected at a researcher's discretion but through definite means which allow every person to partake in the sample. Some of the probability sampling methods are systematic, cluster, simple random and stratified sampling. Nonetheless, the non-probability sampling method refers to the process in which the chance of selecting individuals to partake in a study is unknown. Some examples of non-probability sampling methods are snowball sampling, convenience sampling, purposive sampling and quota sampling (Ayhan, 2011).

This study utilised the non-probability method through the convenience and purposive sampling technique to select respondents. Convenience sampling is a technique of choosing individuals to partake in a study based on convenience while purposive sampling refers to a non-probability sampling approach that is used to decide which individual should be included in a study based on certain characteristics that are relevant to a study (Thomas, 2022).

Purposive sampling is useful due to its convenience in obtaining a sample that can provide adequate information on a phenomenon (Taherdoost, 2016). Hence, convenience sampling was used to select SMEs in the three sectors namely agriculture, manufacturing and services sectors. Additionally, purposive sampling was used to select a manager from the manufacturing, agriculture and services sectors. These managers are selected because they know about the study topic.

3.6 Types and sources of data

Types of data usually refer to different classes or categorisations of information. Understanding the types of data is crucial in determining the appropriate methods for analysis and interpretation (Heiss, 2017). There are two common types of data namely primary and secondary data (Ajayi, 2023). According to Lowry (2015), the primary source of data entails information gathered and processed by the researcher directly from respondents. The methods covered by the primary source of data are surveys, observations, focus group discussions and interviews.

On the other hand, the secondary source of data is data already collected and either published or unpublished. The methods under the secondary source of data are websites, publications, books, internal records, journals and articles (Martins et al., 2018). Concerning the objectives of the research, the primary source of data was used. The reason for using the primary source of data was that it has not yet been published and thus, can be seen as genuine.

3.7 Data Collection Method

The method of collecting data involves systematically and orderly gathering information from diverse sources. This includes choosing the right tools, techniques, and procedures to gather pertinent data for analysis, research, or decision-making purposes (Kabir, 2016). Data collection methods can be classified into two primary groups: primary data collection methods and secondary data collection methods (Taherdoost, 2021). The most common types of primary data collection include interviews, observation, questionnaires, case studies, focus groups, survey and experimental methods (Taherdoost, 2021). However, secondary data collection methods include books, published electronic sources, books, general websites, magazines/newspapers, government records, published printed sources, journals or periodicals, general websites among others (Taherdoost, 2021). This study utilised primary data collection method via a questionnaire to collect data from respondents. A questionnaire is defined as a set of items that are interpreted in the same way by respondents and are presented in a document for each respondent to respond accurately (Artino et al., 2014). A questionnaire is useful due to the standardised format that enables internally consistent data for analysis (Roopa and Rani, 2012).

The questionnaire was segmented into five sections (Section A, B, C & D). Section A covered questions concerning the demographic profile of respondents. Section B covered questions concerning the effect of supply chain integration on firm performance. Also, Section C included questions concerning the effect of trust on firm performance. Lastly, Section D covered questions concerning the moderating effect of trust on the relationship between supply chain integration and firm performance.

Furthermore, permission was sought from the SME under study. Letters were sent to the management of the SMEs to seek permission to conduct the study on their premises. Following approval, the managers of the SMEs were informed of the purpose of the study and its benefits. The selected managers for the sample were then requested to provide their consent to participate in the study. Questionnaires were provided for employees to complete within the company premises. Data collection for this study covered 21 days.

3.8 Data Analysis Method

The questionnaires collected were checked for completeness. Questionnaires that were suitably filled in were coded and keyed into the Statistical Package for Social Sciences version 26. The demographic profile of respondents was analysed using descriptive statistics such as percentages and mean. Also, the effect of supply chain integration on firm performance was analysed using inferential statistics such as correlation and regression. The effect of trust on firm performance was analysed using regression analysis. The moderating effect of trust on the relationship between supply chain integration and firm performance was analysed using inferential statistics such as correlation and regression. The results were presented in tables and charts.

3.9 Validity and Reliability Test

Data validity is described as the level at which a concept is correctly evaluated in a quantitative study (Taherdoost, 2016). The common types of validity are content validity, face validity, criterion validity and construct validity. Content validity is the extent to which a study instrument precisely measures all aspects of a construct while face validity is the degree to which a measure seems to be suitable to a specified construct (Chiang, 2015). Criterion validity is the level at which a study instrument is linked to other instruments that evaluate the same variables while construct validity refers to the degree to which a tool or study

instrument evaluates the intended construct (Taherdoost, 2016). Content validity was used in this study to scrutinise the accuracy and authenticity of the questionnaire.

Additionally, reliability concerns the level at which the constructs of the questionnaire provide consistent and stable results (Kubai, 2019). This means that reliability is about repeatability. Testing for reliability is mostly done using the Cronbach Alpha coefficient (Kubai, 2019). Hence, this study's stableness and dependability were computed and confirmed through the Cronbach alpha coefficient. The Cronbach alpha is a popular test used when it comes to using Likert scales and allows a steadfast way of checking consistency in study questions. An appropriate reliability score is 0.70 and above.

3.10 Ethical Consideration

The study made use of ethical considerations such as informed consent, confidentiality and anonymity. Informed consent involves informing individuals about all the factors concerning the research which are essential for an individual to make a decision and allowing individuals to confirm their willingness to participate in a specific study (Nijhawan et al., 2013). Thus, participants were informed about all relevant factors concerning the study to decide on whether to join the study. Also, confidentiality refers to the protection of raw data and publishing only results that have been aggregated to prevent the tracing of individuals (Badampudi et al., 2022). Therefore, the data provided was stored in a secure location to prevent access to raw data. Also, anonymity involves concealing a participant's identity to protect him/her from harm (Surmiak, 2018). Hence, pseudonyms were used to protect the identity of respondents.

3.12 Profile of SME in Ghana

The small and medium sized businesses in Ghana are mostly in the private sector. The private sector is considered the engine of growth of Ghana's economy. According to Adjabeng and Osei (2022), the private sector is mostly made up of the micro, small and medium sized enterprises. The SMEs sector is estimated to make up 70% of all industrial establishments in the country. Consequently, Adjabeng and Osei, (2022) explained that Ghana's private sector is dominated by enterprises in the informal sector. This is further explained by the data that approximately 90% of companies in the private sector employ less than 20 people. This makes the private sector the main employer in Ghana.

In Ghana, SMEs are found in all economic activities such as fishing, manufacturing, agriculture, ICT, general infrastructure, energy, waste management and tourism (Adjabeng and Osei, 2022). According to Kusi et al., (2015), SMEs contribute about 85% of manufacturing employment and 92% of businesses. The Small and Medium-Sized Enterprises are the backbone of Ghana's economy as they represent 85% of businesses. These businesses are mostly within the private sector and contribute about 70% of Ghana's Gross Domestic Product (GDP) (Kusi et al., 2015). In other words, the private sector houses most of the SMEs in Ghana.



CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

Chapter four presents the analysis and discussion of results obtained from the respondents which are per the research objectives. The research objectives are the effect of supply chain integration on firm performance, the effect of trust on firm performance, and moderating role of trust on the relationship between supply chain integration and firm performance among SMEs.

4.2 Demographics of the Respondents and Background of Firms

The respondents' demographic profiles were included in this section and the key data taken from them includes gender, age, educational background, number of years the firm has been in operations, number of employees in the firm, types of ownership and firm's annual revenue.

TABLE 4.1: DEMOGRAPHIC OF THE RESPONDENTS AND BACKGROUND OF FIRMS

Variable	Response	Frequency (400)	Percentage (%)
Gender	Male	192	48.0
	Female	208	52.0
Age	24–29 years	88	22.0
	30–35 years	144	36.0
	36–40 years	88	22.0
	41 years and above	80	20.0

Educational Background	Secondary	8	2.0
	Bachelor's Degree	200	50.0
	Master's Degree	192	48.0
Number of years the firm has been in operation	Less than 1 year	8	2.0
	1-5 years	136	34.0
	6-10 years	80	20.0
	11-15 years	64	16.0
	16-20 years	40	10.0
	21 years & above	72	18.0
The number of employees in the firm	Less than 6 employees	32	8.0
	6-9 employees	40	10.0
	10-29 employees	136	34.0
	30-50 employees	112	28.0
	More than 50 employees	80	20.0

Type of Ownership	Fully locally owned	240	60.0
	Fully foreign-owned	128	32.0
	Jointly Ghanaian & foreign-owned	32	8.0
Firm's annual revenue (in Ghana Cedis)?	Less than 500,000	56	14.0
	500,000 – 1,000,000	128	32.0
	Above 1,000,000	216	54.0

Source: Field study (2023)

4.2.1 Gender

A total of 400 valid responses were received, and Table 4.1 reveals that 208 (52.0%) were female and 192 (48.0%) were male. This information suggests that more women than men agreed to take part in the study, and given the ratio of men to women, it is possible to confirm that there was no bias stemming from self-selection in the responses.

4.2.2 Age

Out of 400 valid responses, 144 respondents representing 36.0 per cent were between 30 to 35 years, 88 respondents representing 22.0 per cent were between 24 to 29 years, 88 individuals representing 22.0 per cent were also between 36 to 40 years, and 80 individuals representing 20.0 per cent were 41 years and above. Although the majority of the responders were between the ages of 30 and 35, no meaningful analysis has been done to claim that this factored into the outcomes. Since there is a good representation of each age group, the responses are thought to be evenly spread out. The data also justifies that minors were not included in the study due to ethical concerns.

4.2.3 Educational background

Out of 400 valid responses, 200 respondents representing 50.0 per cent had bachelor's degree, 192 individuals representing 48.0 per cent had a Master's Degree, and 8 individuals representing 2.0 per cent had a Secondary Certificate. The data showed that the respondents were all educated and can respond to the questions asked in the questionnaire.

4.2.4 Number of years the firm has been in operations

Out of 400 valid responses, 136 respondents representing 34.0 per cent stated that the firm had been in operation for 1-5 years, 80 individuals representing 20.0 per cent stated 6-10 years, 72 respondents representing 18.0 per cent stated 21 years and above, 40 respondents representing 10.0 per cent stated 16-20 years, and 64 respondents representing 16.0 per cent stated 11-15 years. There are no firms with more than 30 years of history. There are multiple kinds of experience in the industry among the subject firm studies, and the main data reveals that the bulk of the firm has less than twenty-five years of industry experience.

4.2.5 Number of employees in the firm

Out of 400 valid responses, 136 respondents representing 34.0 per cent stated that were 10-29 employees in the firm, 112 individuals representing 28.0 per cent stated 30 -50 employees, 80 respondents representing 20.0 per cent stated more than 50 employees, 40 respondents representing 10.0 per cent stated that 6 -9 employees and 32 respondents representing 8.0 per cent stated that less than 6 employees. The majority of the firm had 10-29 employees and this may be attributed to the nature of services provided among the SMEs in the industry. The data also shows that the majority of the participant firms were not very large firms.

4.2.6 Types of ownership

Out of 400 valid responses, 240 respondents representing 60.0 per cent were fully locally owned, 128 respondents representing 32.0 were fully foreign-owned, and 32 respondents representing 8.0 per cent were jointly Ghanaian and foreign-owned firms.

4.2.7 Firm's annual revenue

Finally, out of 400 valid responses, 216 respondents representing 54.0 per cent stated that the firm earned above GHS1,000,000, 128 respondents representing 32.0 per cent stated

GHS 500,000 - 100,000, and 56 respondents representing 14.0 per cent stated less than GHS 500,000.

4.3 Reliability and Validity Test

The validity analysis is carried out to evaluate the degree of precision with which the variables are measured, and reliability analysis is performed to assess the consistency of the variables (Mohajan, 2017). The reliability of the constructs was evaluated using the Cronbach alpha coefficient and the composite reliability.

For the indicator supply chain performance, 4 out of the 12 indicators had factor loadings less than 0.7 so were deleted. For the variables firm performance and trust, all the indicators had factor loadings greater than 0.7 as indicated by the figure in appendix B, Table 2.

TABLE 4.2: CRONBACH ALPHA, COMPOSITE RELIABILITY AND AVERAGE VARIANCE EXTRACTED

Construct	Number of items	Cronbach Alpha	Composite reliability	AVE
Firm Performance	8	0.965	0.970	0.801
Supply chain integration	8	0.915	0.931	0.629
Trust	8	0.947	0.956	0.730

Source: Field study (2023)

Cronbach Alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE) scores are provided in Table 4.2 above. Beginning with CA, supply chain integration, company performance, and trust all received scores of 0.965, 0.915, and 0.947. For CR, the firm's performance had a score of 0.970, supply chain integration had 0.931 and trust score of 0.956. For all the values, a score of 0.7 is acceptable, hence the variables are reliable. For AVE, the firm's performance had a score of 0.801, supply chain integration had a score of

0.629, and trust had a score of 0.730. However, with AVE, the minimum acceptance value is 0.5, hence there is convergence in the variables' validity.

4.4 Fornell-Larcker Criteria

The Fornell-Larcker criterion is used to assess the discriminant validity of a set of constructs in a structural equation model (Hamid et al, 2017). Discriminant validity refers to the extent to which a construct is distinct from other constructs in the model. The Fornell-Larcker criterion compares the square root of the average variance extracted (AVE) of each construct with the correlations between the constructs.

TABLE 4.3: FORNELL-LARCKER CRITERIA

Construct	Firm Performance	Supply Chain_ Integration	Trust
Firm Performance	0.895	0.764	0.765
Supply Chain_ Integration	0.764	0.793	0.757
Trust	0.765	0.757	0.855

Source: Field study (2023)

Table 4.3 shows the Fornell-Larcker criteria, which are used to assess the discriminant validity of the constructs in a measurement model. The diagonal values in the table represent the square root of the average variance extracted (AVE) for each construct. The off-diagonal values represent the correlations between the constructs.

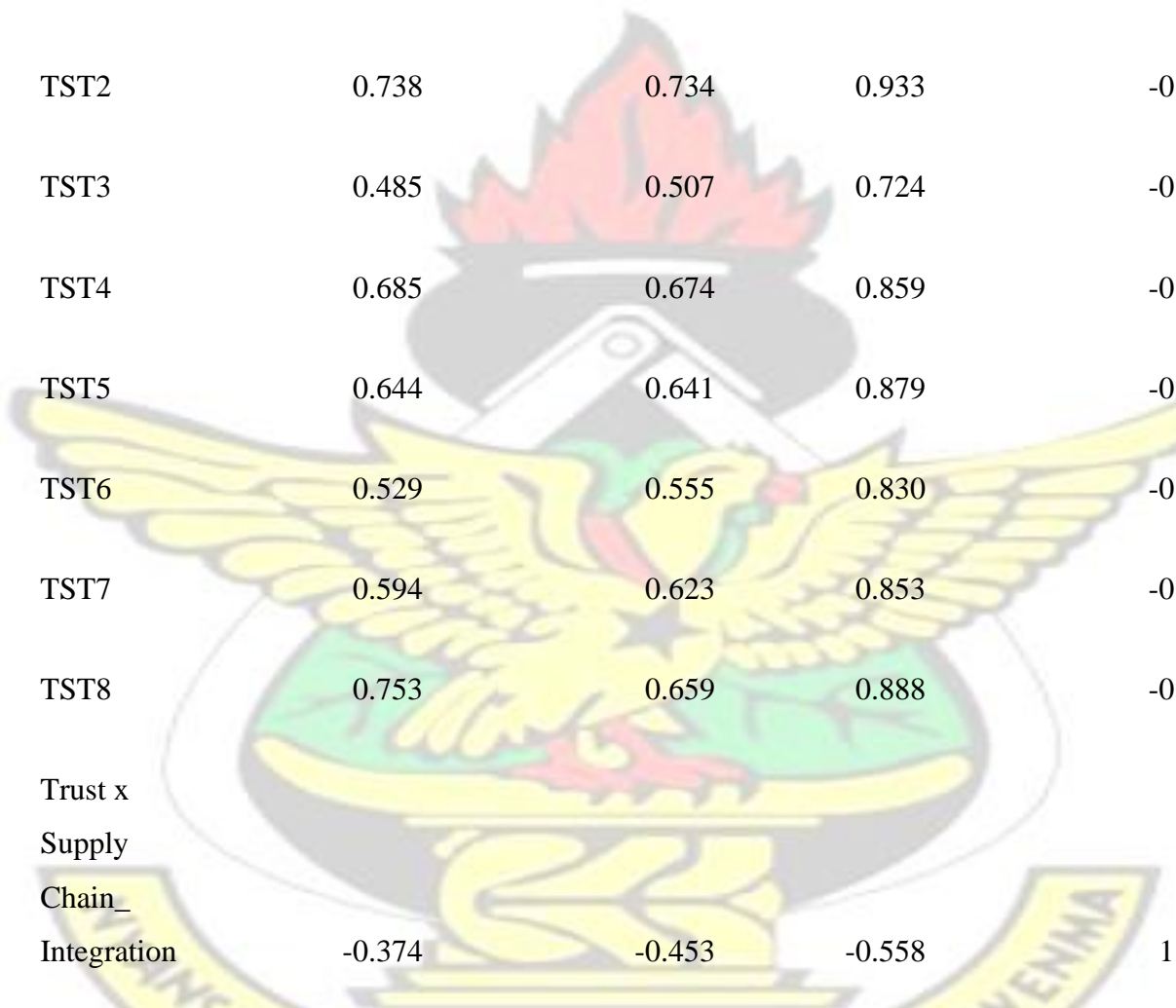
According to the Fornell-Larcker criteria, the AVE values for each construct should be higher than its correlations with other constructs. In this table, we can see that the AVE values for all three constructs (Firm Performance, Supply Chain Integration, and Trust) are higher than their correlations with other constructs. Therefore, the Fornell-Larcker criteria are met, indicating that the measurement model has good discriminant validity.

For example, the AVE for Firm Performance is 0.895, which is higher than its correlation with Supply Chain Integration (0.764) and Trust (0.765). Similarly, the AVE for Supply Chain Integration is 0.793, which is higher than its correlation with Firm Performance (0.764) and

Trust (0.757). The AVE for Trust is 0.855, which is higher than its correlation with Firm Performance (0.765) and Supply Chain Integration (0.757).

TABLE 4.4: CROSS-FACTOR LOADINGS

	Firm Performance	Supply Chain_ Integration	Trust	Trust x Supply Chain_ Integration
FMP1	0.898	0.718	0.724	-0.427
FMP2	0.900	0.708	0.652	-0.341
FMP3	0.898	0.656	0.695	-0.225
FMP4	0.881	0.675	0.676	-0.360
FMP5	0.887	0.631	0.612	-0.248
FMP6	0.877	0.679	0.629	-0.250
FMP7	0.894	0.647	0.708	-0.412
FMP8	0.926	0.749	0.768	-0.392
SCI10	0.720	0.833	0.668	-0.368
SCI11	0.617	0.840	0.684	-0.457
SCI4	0.615	0.755	0.586	-0.186
SCI5	0.626	0.754	0.570	-0.319
SCI6	0.482	0.763	0.603	-0.384



SCI7	0.547	0.753	0.501	-0.355
SCI8	0.680	0.837	0.626	-0.396
SCI9	0.518	0.802	0.533	-0.409
TST1	0.737	0.734	0.860	-0.599
TST2	0.738	0.734	0.933	-0.587
TST3	0.485	0.507	0.724	-0.323
TST4	0.685	0.674	0.859	-0.491
TST5	0.644	0.641	0.879	-0.442
TST6	0.529	0.555	0.830	-0.401
TST7	0.594	0.623	0.853	-0.348
TST8	0.753	0.659	0.888	-0.548
Trust x Supply Chain_ Integration	-0.374	-0.453	-0.558	1.000

Source: Field Study (2022).

Table 4.4 shows the cross-loadings of four constructs: Firm Performance (FMP), Supply Chain Integration (SCI), Trust, and Trust and Supply Chain Integration. The table shows the correlation coefficients between each item and its respective construct, as well as the correlation coefficients between each item and other constructs.

For Firm Performance, all eight items (FMP1-FMP8) have high correlation coefficients with the construct, ranging from 0.877 to 0.926. For Supply Chain Integration, all items except SCI6 have correlation coefficients above 0.7, ranging from 0.617 to 0.840. Trust also has high correlation coefficients with its items, ranging from 0.501 to 0.933.

The cross-loadings between Trust x Supply Chain Integration and the other constructs are negative, indicating that this construct is negatively related to Firm Performance, Supply Chain Integration, and Trust. The correlation coefficient between Trust x Supply Chain Integration and Trust is the highest (-0.558), followed by the correlation coefficient between Trust x Supply Chain Integration and Supply Chain Integration (-0.453), and the correlation coefficient between Trust x Supply Chain Integration and Firm Performance (-0.374).

Overall, the high correlation coefficients between the items and their respective constructs suggest good construct validity, while the negative cross-loadings between Trust x Supply Chain Integration and the other constructs suggest discriminant validity between this construct and the others.

4.5 Descriptive statistics

Descriptive statistics are presented to present the score of the latent variable used in measuring the three main constructs of the study. The Likert scale of 1-7 measures the extent of agreement so the score is matched against the Likert scale to explain the extent to which the indicators of the variables occur in the selected SMEs.

4.5.1 Firm performance

A total of eight (8) valid and reliable variables were utilised to assess the performance of SMEs' operations after the reliability and validity tests were completed.

TABLE 4.5: DESCRIPTIVE STATISTICS ON FIRM PERFORMANCE

Latent variables	Min	Max	Mean	Std. Dev.
My firm has achieved increased market share within the last five years	1.00	7.00	5.16	1.48

My company has improved its return on investments within the last five years	1.00	7.00	5.38	1.41
My company has increased its return on assets within the last five years	2.00	7.00	5.12	1.26
My firm has improved its overall competitive position	2.00	7.00	5.26	1.31
My firm has achieved increased sales within the last five years	2.00	7.00	5.46	1.29
Customer satisfaction has improved in my company within the last five years	3.00	7.00	5.44	1.17
Product and service quality has improved within the last five years	1.00	7.00	5.38	1.28
My firm has improved its brand image and reputation within the last five years	2.00	7.00	5.54	1.27
Composite Mean	2.13	7.00	5.34	1.17

Source: Field study (2023)

As shown in Table 4.5, the results indicated that “My firm has achieved increased market share within the last five years” is fairly achieved among SMEs having a mean score of 5.16. This implies that there is a fair likelihood that SMEs obtained an increase in market share in

various industries. The item “My company has increased its return on assets within the last five years” is fairly achieved among SMEs, having a mean score of 5.12. This means that there is a fair likelihood that SMEs obtained an in return on an asset in various sectors. The items "My firm has improved its overall competition" and "Product and service quality has improved within the last five years" are fairly achieved among SMEs, having a mean score of 5.26 and 5.38 respectively. This implies that product and service quality has improved within the last five years and the firms have also improved their overall competition.

The items "My company has improved its return on investments within the last five years", "My firm has achieved increased sales within the last five years" and "Customer satisfaction has improved in my company within the last five years" are fairly achieved among the SMEs, having a mean score of 5.38, 5.46, and 5.44 respectively. This suggests that there is a good possibility that SMEs have increased revenue, improved return on investment and improved customer satisfaction within the past five years. The item "My firm has improved its brand image and reputation within the last five years, has a mean score of 5.54. This implies that there is a fair likelihood that SMEs' brands and reputations have improved within the last five years. Eventually, the construct of "firm performance" received a composite mean score of 5.34 after combining these seven variables. This score implies that the performance of SMEs has fairly improved.

4.5.2 Supply chain integration

A total of eight (8) valid and reliable indicators were utilised to assess the practice of supply chain integration after the reliability and validity tests were completed.

TABLE 4.6: DESCRIPTIVE STATISTICS ON SUPPLY CHAIN INTEGRATION

Latent variables	Min	Max	Mean	Std. Dev
My company involves suppliers in problem-solving	1.00	7.00	4.88	1.84
Suppliers are provided with any information that can aid them	3.00	7.00	5.52	1.22

My firm and our main suppliers exchange performance feedback	1.00	7.00	5.10	1.52
My firm and main suppliers keep each other informed about changes and events	1.00	7.00	5.34	1.42
Employees in the purchasing and production divisions often share necessary information	1.00	7.00	5.24	1.44
Purchasing and production workers often attain goals collectively	2.00	7.00	5.26	1.33
Employees in the purchasing and production divisions usually share plans	1.00	7.00	5.00	1.58
My firm considers suppliers when developing a firm strategy	1.00	7.00	5.14	1.55
The long-term strategy of my firm requires a healthy relationship with our main suppliers	2.00	7.00	5.52	1.32
My firm involves suppliers in business planning	1.00	7.00	4.90	1.55
Composite Mean	1.58	7.00	5.19	1.12

Source: Field study (2023)

As shown in Table 4.6, the results indicated that the items "My company involves suppliers in problem-solving", and "My firm involves suppliers in business planning" are less practised among SMEs in various industries, having a mean score of 4.88, and 4.90 respectively. This implies that involving suppliers' product design and development, in problem-solving, involving supplies in business planning, as well as consulting suppliers in production planning and inventory management is not a commonly practised phenomenon in SMEs. The items "Employees in the purchasing and production divisions usually share plans", "My firm

considers suppliers when developing a firm strategy", and "My firm and our main suppliers exchange performance feedback" is fairly practised among SMEs, having a mean score of 5.00, 5.14, and 5.10 respectively. This means that there is a fair likelihood that the employees in the purchasing and production division share plans, and suppliers are considered in developing firm strategy, firm exchange performance feedback with suppliers in SMEs.

The items "Employees in the purchasing and production division often share necessary information", and "Purchasing and production workers often attain goals collectively", are fairly practised among SMEs, and this is shown by the respective mean scores of 5.24, and 5.26. This further means that there is a fair likelihood that employees in the purchasing and production division often share necessary information and that the purchasing and production workers attain goals collectively and are practised among SMEs.

The items "Suppliers are provided with any information that can aid them", "My firm and main suppliers keep each other informed about changes and events", and "The long-term strategy of my firm requires a healthy relationship with our main suppliers" are fairly practised among the SMEs, and this is shown by their respective mean scores of 5.52, 5.34, and 5.52 respectively. This implies that there is a fair likelihood that suppliers are provided with any information that can aid them, the firm and main suppliers keep each other informed about changes and events, and the long-term strategy of the firm requires a healthy relationship with the main suppliers is practised in SMEs. Finally, putting these ten (10) variables together, the construct, supply chain integration had a composite mean score of 5.19. This score implies that, on average, supply chain integration is practised in SMEs in various industries.

4.5.3 Trust

A total of eight (8) valid and reliable variables were utilised to assess the level of trust after the reliability and validity tests were completed.

TABLE 4.7: DESCRIPTIVE STATISTICS ON TRUST

Latent variables	Minimum	Maximum	Mean	Std. Deviation
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Employees in the company get along well with each other	2.00	7.00	5.84	1.19
Workers in the company have a good working relationship	2.00	7.00	5.76	1.09
Employees in the organisation have little conflict with colleagues	1.00	7.00	5.12	1.52
Employees are reliable in the company	2.00	7.00	5.52	1.19
Workers within the company disclose information on time and accurately	2.00	7.00	5.36	1.25
Workers seek and accept the counsel of other employees	2.00	7.00	5.46	1.21
Employees give responsibility to other workers within the company	2.00	7.00	5.44	1.06
Workers within the company deliver on their promise to complete a task	1.00	7.00	5.56	1.25
Composite Mean	1.88	7.00	5.51	1.04

Source: Field study (2023)

As shown in Table 4.7, the results indicated that the item "Employees in the organisation have little conflict with colleagues", and "Workers within the company disclose information on time and accurately" fairly occurs among SMEs, and this was shown by their respective mean score 5.12 and 5.36. This means that there is no conflict among workers, and workers also disclose information on time and accurately within the company. The items "Employees are reliable in the company", "Workers seek and accept the counsel of other employees" and

"Employees give responsibility to other workers within the company" fairly occur among the SMEs, and this has been shown by the mean score of 5.52, 5.46, and 5.44 respectively.

The items "Employees in the company get along well with each other", "Workers in the company have a good working relationship", and "Workers within the company deliver on their promise to complete a task" fairly occur among the SMEs in the various sectors, being shown by their respective mean score of 5.84, 5.76, and 5.56. This implies that employees have a good working relationship, deliver on their promises to complete a task, and get along with their colleagues. With a composite mean score of 5.51, it concludes that there is a fair level of trust among employees in the firms (SMEs).

4.6 Correlation

TABLE 4.8: CORRELATION ANALYSIS FOR THE VARIABLES

	1	2	3	4	5	6	7
1. Years' operating	1						
2. Number of employees	.277**	1					
3. Type of Ownership	-.148**	-.131**	1				
4. firm Revenue	.252**	.324**	-.639**	1			
5. FMP	-.180**	0.033	.121*	.154**	1		
6. TST	-.164**	-0.022	.257**	0.061	.751**	1	
7. SCI	-.101*	0.006	.128*	0.051	.790**	.757**	1

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

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Field study (2023)

Table 4.8 shows the correlation result obtained for supply chain integration, trust, and firm performance. Based on the analysis, the correlation coefficient ($r=0.790$) implies that there is a positive significant relationship between supply chain integration and firm performance. Furthermore, there is a positive significant relationship between trust and firm performance, and this is shown by the correlation coefficient ($r=0.757$). Finally, there is also a positive significant relationship between supply chain integration and trust, and this is shown by the correlation coefficient ($r=0.751$). From the interpretation, the relationship between the independent variables is below 0.8 which implies that the correlation meets the rule of multicollinearity strength. Also, in the absence of multicollinearity strength and the correlation analysis is high, it will affect the interpretation of the two variables.

4.7 Moderation analysis

This is a moderation analysis that examines the moderating effect of trust on the relationship between supply chain integration and firm performance.

TABLE 4.9: MODERATION ANALYSIS

	β	SD	T statistics	P values
Supply Chain_ Integration -> Firm Performance	0.808	0.030	26.529	0.000
Supply Chain_ Integration -> Trust	0.757	0.026	29.402	0.000
Trust -> Firm Performance	0.485	0.045	10.707	0.000
Trust x Supply Chain_ Integration -> Firm Performance	0.055	0.017	3.149	0.002

As shown in Table 4.9, both supply chain integration and trust are significantly and positively related to firm performance ($\beta = 0.808$, $t=26.529$, $p < 0.001$ and $\beta = 0.757$, $t= 29.402$, $p <$

0.001, respectively). The direct effect of trust on firm performance is also significant ($\beta = 0.485$, $t = 10.707$, $p < 0.001$).

Furthermore, the interaction between trust and supply chain integration is also significant and positively related to firm performance ($\beta = 0.055$, $t = 3.149$, $p = 0.002$). This suggests that the positive relationship between supply chain integration and firm performance is stronger when there is high trust between supply chain partners.

In terms of statistical significance, all coefficients have p-values less than 0.05, indicating that they are statistically significant. The t-statistics for all coefficients are also high, suggesting that the results are robust. Overall, these results suggest that trust plays an important role in enhancing the positive relationship between supply chain integration and firm performance.

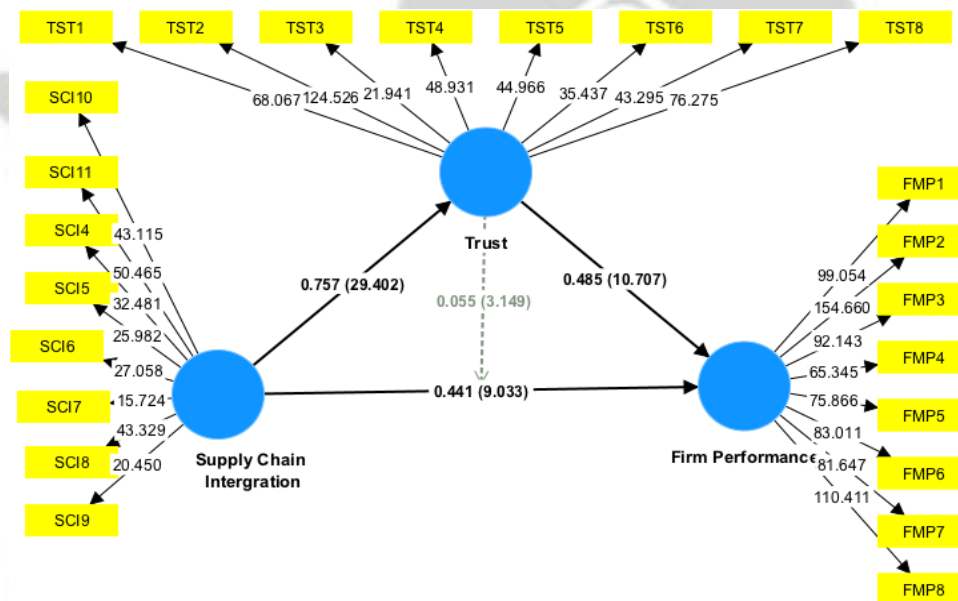


FIGURE 4.4: SEM RESULT

4.8 DISCUSSIONS

This section of the chapter presents the discussion of the interpreted findings. The discussion was done per the research objectives and supported by theories and related studies in Chapter two.

4.8.1 The effect of supply chain integration on firm performance

The results show that there is a positive statistically significant relationship between supply chain integration and firm performance ($\beta = 0.808$, $t = 26.529$, $p < 0.001$). The positive relationship established was obtained from respondents' responses in which the majority agreed that the firm considered suppliers when developing strategy, exchanged performance feedback with suppliers, employees in the purchasing and production division shared necessary information as well as worked together to attain collective goals. According to Mohajan (2019), the attempt to share information or knowledge among employees helps them (employees) connect and become stronger as professionals to perform better in the firm.

Aside from that, sharing information ensures the continuity of projects and drives learning within an organizational culture which in turn affects the firm performance positively (Mohajan, 2019). Again, Sillanpaa and Sillanpaa (2015) stated that including suppliers in the development of a strategy helps the firm to optimise its procurement efforts and improve its overall supply chain performance. Their inclusion in the strategy, according to Carr and Pearson (2002), allows the firm to select the right suppliers for their operations. This reduces the cost associated with selecting several suppliers and improves the efficiency of the firm. The result of this study is consistent with the findings of Asnordin et al (2021). The study confirmed that supply chain integration helped improve the efficiency of supply chain performance and the overall impact on the performance of firms.

4.8.2 The effect of trust on firm performance

The results show that there is a positive statistically significant relationship between trust and firm performance ($\beta = 0.485$, $t = 10.707$, $p < 0.001$). The positive relationship established was obtained from respondents' responses in which the majority agreed that employees get along with each other, are reliable, share information on time and accurately, seek and accept the counsel of other employees, give responsibility to other workers, and deliver on their promises

to complete tasks. According to Serrat and Serrat (2017), both physical teams and remote employees need trust and any employee who does not have trust will be less driven and effective.

Employees at high-trust organisations report a 74 per cent reduction in stress, a 50 per cent increase in productivity, and a 40 per cent reduction in burnout. According to See and Ismail (2021), employees that are trusted are more likely to complete their work, advise their colleagues, share reliable information as well as assist each other to complete their tasks. This sort of culture increases employee engagement, which frequently results in better work and outcomes for the firm (See and Ismail, 2021). The result of this study is consistent with the findings of Brown et al (2014).

The study confirmed that there was a positive relationship between employee trust and firm performance as demonstrated by improved financial performance, increased labour productivity, and improved service and product quality. The result of this study corroborated the network theory which connotes that mood state can serve as a cue for potential customers, employees or suppliers to recall information and make associations with coincident events to improve such events.

4.8.2 The moderating effect of trust on the relationship between supply chain integration and firm performance

The result shows a positive significant moderation effect of trust in the relationship between supply chain integration and firm performance ($\beta = 0.055$, $t = 3.149$, $p = 0.002$). This suggests that the positive relationship between supply chain integration and firm performance is stronger when there is high trust between supply chain partners. Moreover, the positive moderation established was obtained from respondents' responses in which the majority agreed that the firm achieved an increase in market share, return on assets, sales, and customer satisfaction, improved its return on investment, products and service, as well as brand image and reputation within five years.

Market share, according to Khantimirov (2017), is the portion of a given firm's sector's sales. It refers to the portion of a company's overall industry income derived from selling items and

providing services (Khantimirov, 2017). An organisation's ability to expand its profit is implied when it raises its share of the market.

Return on assets can be described as a metric used in measuring the profits of a company compared to its total assets (Purnamasari, 2015). Purnamasari (2015) stated that the return on assets is often achieved when companies improve the efficiency of current assets. Return on investment is often referred to as the profit or return a company receives from its investment (Schueler et al, 2017). When it refers to something specific and quantifiable to pinpoint the benefits and financial returns of the investment, the return on investment becomes helpful to a firm's objectives (Schueler et al, 2017).

Also, one can use the return on investment to assess past corporate strategies and guide future ones. However, Panahifar et al (2018) stated that these outcomes are achievable based on the trust among employees and from potential customers. The result of this study is consistent with the findings of Japutra (2021). The study confirmed that trust had a significant effect on supply chain integration and performance. In other words, there was good tentative evidence that trust played a crucial role in the causal relationship between supply chain integration and firm performance. The result of this study corroborated with the transaction cost theory which connotes that supply chain integration is effective when all parties, including employees, clients and suppliers cooperate to strengthen relations and are informed of all supply chain activities. In the context of the transaction cost theory, it means that because of the good relationship between companies and their suppliers, they are capable of ignoring any bureaucracies in the supply chain that can lead to conflicts and unnecessary administrative expenses.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section of the chapter presents the summary, conclusion and recommendation for the study. The summary, conclusion and recommendations are discussed per the research objectives: the effect of supply chain integration on firm performance, the effect of trust on firm performance, and the moderating role of trust on the relationship between supply chain integration and firm performance.

5.2 Overview of the study

The study's primary aim was to examine the moderating effects of trust in the relationship between supply chain integration and firm performance. The study adopted a quantitative research approach and sampled 400 Small and Medium-sized Enterprises (SMEs) using convenience sampling, whereas purposive sampling was used to select managers within the SMEs. The data were collected using a questionnaire and analysed using descriptive and inferential statistics.

5.3 Key findings

The following findings were obtained:

5.3.1 The effect of supply chain integration on firm performance

The results show that there is a positive statistically significant relationship between supply chain integration and firm performance ($\beta = 0.808$, $t = 26.529$, $p < 0.001$). This implies that a unit increase in supply chain integration increases the performance of the firm by 0.808. The positive relationship established was obtained from respondents' responses in which the majority agreed that the firm considered suppliers when developing strategy, exchanged performance feedback with suppliers, employees in the purchasing and production division shared necessary information as well as worked together to attain collective goals.

5.3.2 The effect of trust on firm performance

The results show that there is a positive statistically significant relationship between trust and firm performance ($\beta = 0.485$, $t = 10.707$, $p < 0.001$). This implies that a unit increase in trust increases the firm's performance by 0.485. The positive relationship established was obtained from respondents' responses in which the majority agreed that employees get along with each other, are reliable, share information on time and accurately, seek and accept the counsel of other employees, give responsibility to other workers, and deliver on their promises to complete tasks.

5.3.3 The moderating role of trust on the relationship between supply chain integration and firm performance.

The result shows a positive significant moderating effect of trust in the relationship between supply chain integration and firm performance ($\beta = 0.055$, $t = 3.149$, $p = 0.002$). This suggests that the positive relationship between supply chain integration and firm performance is stronger when there is high trust between supply chain partners. The positive moderation established was obtained from respondents' responses in which the majority agreed that the firm achieved an increase in market share, return on assets, sales, customer satisfaction, improved its return on investment, products and service, as well as brand image and reputation within five years.

5.4 Conclusion

The study's primary aim was to examine the moderating effects of trust in the relationship between supply chain integration and firm performance. To achieve this objective, the study developed these three specific objectives: the effect of supply chain integration on firm performance, the effect of trust on firm performance, and the moderating role of trust on the relationship between supply chain integration and firm performance. Based on the findings, the following conclusions were obtained;

5.4.1 The effect of supply chain integration on firm performance

There was a positive statistically significant relationship between supply chain integration and firm performance. The attempt of the firm to consider suppliers when developing strategy

exchanged performance feedback with suppliers, employees in the purchasing and production division shared necessary information as well as working together to attain collective goals had a positive influence on the firm performance.

5.4.2 The effect of trust on firm performance

Also, there was a positive statistically significant relationship between trust and firm performance. Employees got along with each other, were reliable, shared information on time and accurately, sought and accepted the counsel of other employees, gave responsibility to other workers, delivered on their promises to complete tasks and had a positive influence on the firm performance.

5.4.3 The moderating role of trust on the relationship between supply chain integration and firm performance.

Finally, the trust did moderate the relationship between supply chain integration and firm performance. This was shown in the firm's ability to achieve an increase in market share, return on assets, sales, and customer satisfaction improved its return on investment, products and service, as well as brand image and reputation within five years.

5.5 Recommendations

The following recommendation was outlined based on the results or findings of the study:

- i. The study result revealed that supply chain integration had a positive impact on firm performance. It is therefore suggested that SMEs should intensively engage or involve suppliers in solving issues and plans of the company. Giving the suppliers a platform to participate in the decision-making process enlightens the firm on the actual needs and demands of customers in the market.
- ii. The study results revealed that trust had a positive impact on firm performance. It is therefore recommended that SMEs should always be open and transparent about their products and services, as well as accountable for their actions to gain more trust from potential customers and employees. Also, the study recommends that managers should frequently engage employees when developing any strategies for the company. This

approach makes them (employees) feel a sense of belonging and in return helps the firm gain an advantage in the market.

- iii. The study results revealed that trust moderates the relationship between supply chain integration and firm performance. It is recommended that managers in SMEs establish an effective communication channel that can be used to disseminate relevant information about products, services, and daily tasks in the firm. In doing that, stakeholders will be abreast and adhere to the organisational culture, procedure and strategy of the firm. This approach will go a long way to affect the performance of the firm.

5.6 Recommendation for Future Studies

- i. The study was primarily focused on assessing the moderating role of trust in the relationship between supply chain integration and firm performance among SMEs. Hence, the study can be replicated in the future using an organisation from the public sector to establish if similar results can be achieved.
- ii. The study also recommends that future studies should consider a qualitative approach in data collection and analysis. Using a qualitative approach will allow researchers to understand human experiences, feelings, opinions and attitudes and not just put numbers to everyday realities.
- iii. Furthermore, the study recommends that future studies should consider conducting a comparative study in other regions. Conducting a comparative study will improve the understanding of the topic across different regions thus providing information for strategic decisions.
- iv. Finally, the study recommends that future studies should consider focusing on one sector at a time rather than including different sectors. This is because the various sectors have unique characteristics. Thus, focusing on one sector at a time will make generalisation more accurate than looking at all sectors at the same time.

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SURVEY QUESTIONNAIRE

My name is Philip, a postgraduate student at the Kwame Nkrumah University of Science and Technology, Kumasi, Department of Supply Chain and Information Systems. This survey instrument has been designed to enable me to carry out research on the topic: **“Supply chain integration and firm performance. The moderating role of trust”**. Any information provided will be used for academic purposes ONLY. There are no risks associated with your participation, and your responses will remain confidential and anonymous.

SECTION A: RESPONDENT’S BIOGRAPHY AND COMPANY PROFILE

When completing this questionnaire, please tick [✓] in the applicable box or provide an answer as applicable.

1. Gender: ☐ Male ☐ Female
2. Age: ☐ 23 years and below ☐ 24–29 years ☐ 30–35 years
☐ 36–40 years ☐ 41 years and above
3. Educational Background:
☐ No formal education ☐ Basic/Primary ☐ Secondary
☐ Bachelor’s Degree ☐ Master’s Degree ☐ Ph.D./Doctorate
4. Please, indicate the department you belong to (e.g., Procurement, Marketing, HRM, Management, etc.)

5. Please, indicate your area of expertise (e.g., logistics and supply chain management, procurement management, operations management, etc.)

6. Please indicate your position in the firm (e.g. Supply Chain Manager, Operations Manager, etc).

7. Number of years the firm has been in operation:

- ☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years
☐ 11-15 years ☐ 16-20 years ☐ 21 years & above

8. The number of employees in the firm:

- ☐ Less than 6 employees ☐ 6-9 employees ☐ 10-29 employees
☐ 30-50 employees ☐ More than 50 employees

9. Type of ownership:

- ☐ Fully locally owned ☐ Fully foreign-owned ☐ Jointly Ghanaian & foreign-owned

10. Please, indicate the industry to your firm belongs (e.g., food processing industry, agro-processing, etc.)

11. Firm's annual revenue (in Ghana Cedis)?

- ☐ Less than 500,000 ☐ 500,000 – 1,000,000 ☐ Above 1,000,000

SECTION B: SUPPLY CHAIN INTEGRATION

(Source: Zhang, M., Lettice, F., Chan, H. K. and Nguyen, H. T. 2018).

Indicate the extent to which you agree or disagree with each statement by checking the appropriate number from 1 to 7, using the following scale:

<div style="display: flex; justify-content: space-around;"> 1 = Strongly Disagree 2 = Disagree 3 = Somewhat Disagree </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> 4 = Indifferent/Not Sure 5 = Somewhat Agree 6 = Agree </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> 7 = Strongly Agree </div>								
Item	Statement	1	2	3	4	5	6	7
Supply chain integration (SCI)								
SCI1	My firm involves suppliers in product design and development							
SCI2	My company involves suppliers in problem-solving							
SCI3	Suppliers are consulted in production planning and inventory management							
SCI4	Suppliers are provided with any information that can aid them							

SCI5	My firm and our main suppliers' exchange performance feedback							
SCI6	My firm and main suppliers keep each other informed about changes and events							
SCI7	Employees in the purchasing and production divisions often share necessary information							
SCI8	Purchasing and production workers often attain goals collectively							
SCI9	Employees in the purchasing and production divisions usually share plans							
SCI10	My firm considers suppliers when developing a firm strategy							
SCI11	The long-term strategy of my firm requires a healthy relationship with our main suppliers							
SCI12	My firm involves suppliers in business planning							

SECTION C: FIRM PERFORMANCE (FMP) (Source: Beheshti, H. M., Oghazi, P., Mostaghel, R. and Hultman, M. 2014)

Indicate the extent to which you agree or disagree with each statement by checking the appropriate number from 1 to 7 using the following scale:

<p><i>1 = Strongly Disagree 2 = Disagree 3 = Somewhat Disagree</i></p> <p><i>4 = Indifferent/Not Sure 5 = Somewhat Agree 6 = Agree 7 = Strongly Agree</i></p>								
Item	Statement	1	2	3	4	5	6	7
FMP1	My firm has achieved increased market share within the last five years							
FMP2	My company has improved its return on investments within the last five years							
FMP3	My company has increased its return on assets within the last five years							
FMP4	My firm has improved its overall competitive position							
FMP5	My firm has achieved increased sales within the last five years							
FMP6	Customer satisfaction has improved in my company within the last five years							
FMP7	Product and service quality has improved within the last five years							
FMP8	My firm has improved its brand image and reputation within the last five years							

SECTION D: TRUST (TST) (Source: Botwe, P. B., Amoah-Binfoh, K. and Masih, E. 2016).

Indicate the extent to which you agree or disagree with each statement by checking the appropriate number from 1 to 7 using the following scale:

<p><i>1 = Strongly Disagree 2 = Disagree 3 = Somewhat Disagree</i></p> <p><i>4 = Indifferent/Not Sure 5 = Somewhat Agree 6 = Agree 7 = Strongly Agree</i></p>								
Item	Statement	1	2	3	4	5	6	7
TST1	Employees in the company get along well with each other							
TST2	Workers in the company have a good working relationship							
TST3	Employees in the organisation have little conflict with colleagues							
TST4	Employees are reliable in the company							
TST5	Workers within the company disclose information on time and accurately							
TST6	Workers seek and accept the counsel of other employees							
TST7	Employees give responsibility to other workers within the company							
TST8	Workers within the company deliver on their promise to complete a task							

Thank you for participating in the survey.

References for the Construct Measures:

Supply chain integration:

Zhang, M., Lettice, F., Chan, H. K. and Nguyen, H. T. (2018). Supplier integration and firm performance: the moderating effects of internal integration and trust. *Production Planning and Control* 29 (10), 802 - 813. <https://doi.org/10.1080/09537287.2018.1474394>

Firm Performance:

Beheshti, H. M., Oghazi, P., Mostaghel, R. and Hultman, M. (2014). Supply chain integration and firm performance: an empirical study of Swedish manufacturing firms. *Competitiveness Review* 24 (1), 20 - 31. DOI 10.1108/CR-06-2013-0060

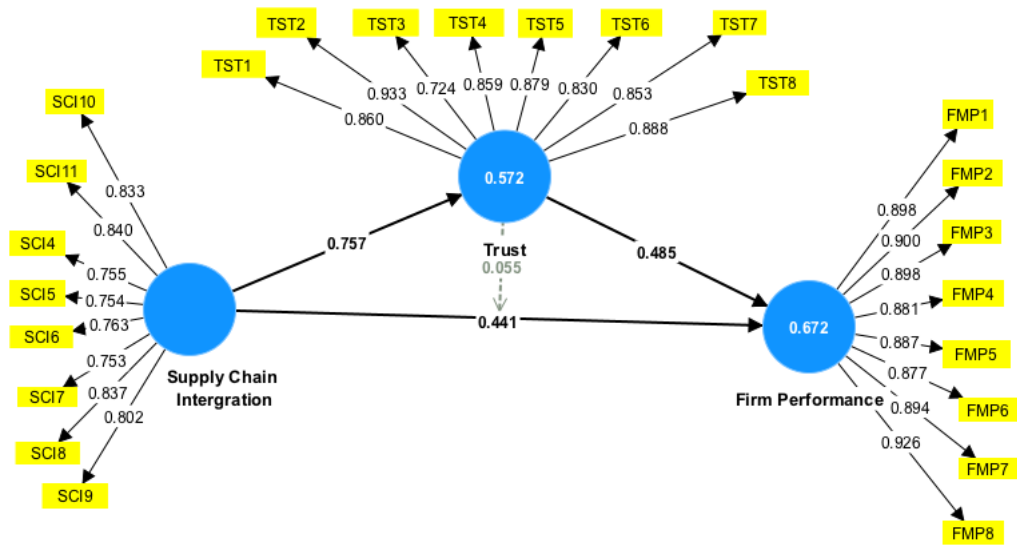
Trust:

Botwe, P. B., Amoah-Binfoh, K. and Masih, E. (2016). Concept of trust and its effect on performance in an organisation. *International Journal of Business & Management* 4 (2), 123 - 128. <https://www.researchgate.net/publication/303895293>

SAMPLE TABLE

Population	Small and Medium Enterprises in Ghana
Sample Size	400 SMEs
Sampling Technique(s)	Purposive and Convenience Sampling Techniques
Unit of Analysis	Firm Level
Respondent types	Top and Middle-Level Managers in Logistics, Supply Chain and Operations.
Response per firm	1 response from one firm

APPENDIX A



Factor loadings

