

**ASSESSING THE EFFECT OF SUPPLY CHAIN MANAGEMENT PRACTICES ON
THE OPERATIONAL PERFORMANCE OF GHANA RUBBER ESTATES
LIMITED: THE MEDIATING ROLE OF KNOWLEDGE SHARING.**

KNUST

BY

GODWIN EDEM ADJAKLO

A Thesis Submitted to the Institute of Distance Learning, Kwame Nkrumah University of
Science And Technology, in partial fulfilment of the requirement for the degree

MASTERS OF SCIENCE IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

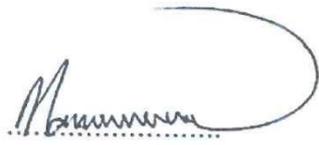
Institute of Distance Learning, KNUST

NOVEMBER, 2023.

DECLARATION

I, GODWIN EDEM ADJAKLO, hereby declare that this submission is my own work towards the Master of Science in Logistics and Supply Chain Management and that to the best of my knowledge, it contains no material previously published by any other person nor material which has been accepted for the award of any degree of the University, except where due acknowledgement has been made in the text.

Godwin Edem Adjaklo 
Student's Name Signature
(PG 9249221) Date
22/02/2023

Certified By: 
Dr. Mawuko Dza Signature
(Supervisor) Date
20/02/2023

Certified By:
Prof David Asamoah
(Head of Department) Signature Date



DEDICATION

I dedicate this work to Eugenia Akorfa Adjaklo, and to the late Mercy Akosua Akortia

KNUST



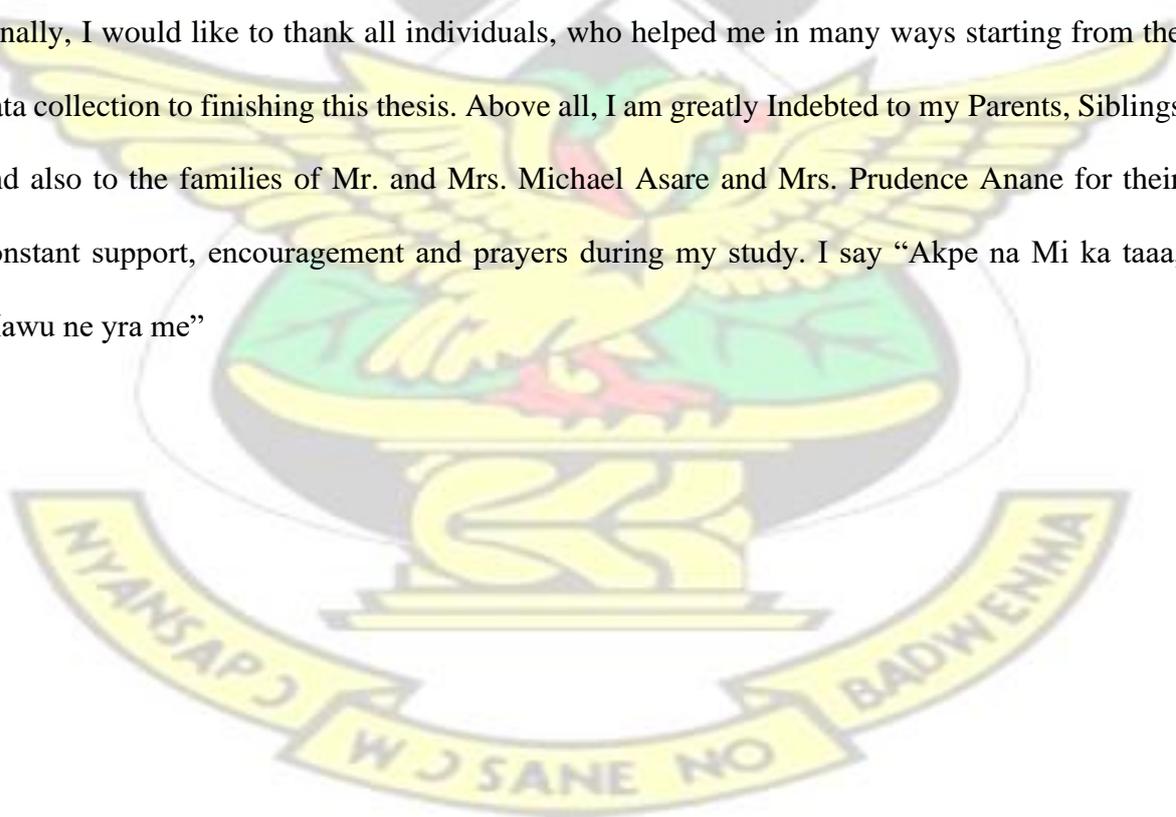
ACKNOWLEDGMENT

First and foremost, I pay my whole hearted gratitude to God Almighty for granting me the strength, wisdom and knowledge to be able to put this thesis together, for without His grace, mercies and protection I wouldn't have been able to do this work successfully.

After that, I would like to extend my heartfelt gratitude to my thesis supervisor Dr. Mawuko Dza, for his constructive criticism, guidance and countless fruitful discussions that always brings me back on track, recharge and stimulate my enthusiasm for pressing on further. Undoubtedly, his innovative comments greatly improved the content of this thesis.

Next, I would like to thank Mr. Eric Torsu of GREL for his tremendous effort he played in assisting me to collect and analyse my data. Also I would like to thank Dr. John Frimpong Manso for his inputs in my work as my second internal supervisor

Finally, I would like to thank all individuals, who helped me in many ways starting from the data collection to finishing this thesis. Above all, I am greatly Indebted to my Parents, Siblings and also to the families of Mr. and Mrs. Michael Asare and Mrs. Prudence Anane for their constant support, encouragement and prayers during my study. I say “Akpe na Mi ka taaa, Mawu ne yra me”



ABSTRACT

For the majority of businesses that wish to continue operating and acquire a competitive edge in today's global market, effective and efficient supply chain management has emerged as a serious topic of discussion and worry. Since rivalry is now within supply chains rather than between firms, it has emerged as a potentially fruitful method of achieving competitive advantage through improving organizational and operational performances. Seven dimensions of SCM practice (strategic supplier partnership, customer relationship, level of information sharing, logistics, internal lean practices, Responsiveness, Outsourcing) are conceptualized, developed, and tested in this study. It also examines the links between SCM practices and operational performance. Data for the study were gathered from 52 GREL employees. The relationships proposed in the framework were tested using Pearson correlation, the causal relations were analyzed using regression analysis and the chi-square test of independence of which the strength was further investigated with the Phi's and Crammer's Values respectively. From the result of the analysis, it is concluded that SCM practices largely influences operational performance. Consequently, the mediation test revealed that knowledge sharing is not a mediator of Supply chain management practices and organizational operational performance, thus the direct effect of knowledge sharing on supply chain management practices and operational performance is insignificant and hence has a non-mediation effect. Therefore, in order to achieve advancement in their supply chain management practices in the long-run through enhancing operational performance, it is better for the organization to give due emphasis to the constructs of SCM practices (logistics and responsiveness) and the measures of operational performance.

TABLE OF CONTENT

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGMENT	iv
ABSTRACT	v
TABLE OF CONTENT	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ABBREVIATIONS	xii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the study	1
1.2 Problem Statement	4
1.3 Objectives of the Study	6
1.3.1 Specific Objectives	7
1.4 Research Questions	7
1.5 Study Significance	7
1.6 Scope of the Study	9
1.7 Summary of Research Methodology	10
1.8 Limitations of the Study.....	11
1.9 Organization of the Thesis	12
CHAPTER TWO	13
LITERATURE REVIEW	13
2.0 Introduction.....	13
2.1 Conceptual Review	13
2.1.1 Concept of Supply Chain Management	13
2.1.2 Relationship between Logistics and Supply Chain.....	15
2.1.3 Drivers of Supply Chain	16
2.1.4 Supply Chain Management Processes	17
2.1.5 Supply Chain Management Practices	18
2.1.5.1 Supply Relationship Management	18

2.1.5.2 Customer Relationship Management	19
2.1.5.3 Information Sharing	20
2.1.5.4 Logistics	20
2.1.5.5 Outsourcing	21
2.1.5.6 Strategic Supplier Partnership.....	21
2.1.5.7 Lean Practices	22
2.1.5.8 Responsiveness	23
2.2 Knowledge Sharing.....	23
2.3 Organizational Performance	25
2.4 Operational Performance	26
2.4.1 Performance and Supply Chain Management.....	27
2.4.2 Relationship between SCM Practices, Knowledge Sharing and Operational Performance	29
2.4.3 Effect of Supply Chain Management on Organizational Operational Performance.....	30
2.5 Theoretical Review	33
2.5.1 Relational View (RV) and Resource Based View (RBV) Theory.....	33
2.6 Empirical Review.....	34
2.7 Conceptual Framework.....	37
2.7.1 Knowledge Sharing and Supply Chain Management Practices.....	38
2.7.2 Knowledge Sharing and Organizational Operational Performance.....	39
2.7.3 Supply Chain Management Practices and Organizational Operational Performance	40
2.8 Chapter Summary	40
CHAPTER THREE	41
RESEARCH METHODOLOGY	41
3.1 Introduction.....	41
3.2 Research Design.....	41
3.3 Population of the study	41
3.4 Sampling Technique	42
3.4.1 Sample Size.....	42
3.5 Data Collection Method.....	43
3.6 Data Analysis	46
3.7 Validity and Reliability.....	46
3.8 History of Ghana Rubber Estates Limited	47

3.8.1 Vision.....	47
3.8.2 Mission Statement.....	48
3.9 Ethical Consideration.....	48
3.10 Chapter Summary	49
CHAPTER FOUR.....	50
DATA PRESENTATION, ANALYSIS AND DISCUSSION	50
4.1 Introduction.....	50
4.2 Biographic Information.....	50
4.3. Validity and Reliability.....	51
4.3.1 Assessing Reliability.....	51
4.3.2 Validity Analysis	53
4.4 Knowledge-sharing, SCM techniques, and operational performance inferential statistics	53
4.4.1 Correlation Analysis	53
4.4.1.1 Correlation Analysis of Knowledge Sharing Construct and Operational Performance	54
4.4.1.2 Correlation Analysis between knowledge sharing constructs and SCM Practices.....	55
4.5 Standard Framework for Ensuring Organizational Operational Performance.....	56
4.5.1 Standard Framework- Regular Training and Knowledge Sharing	56
4.5.2 Standard Framework - Discovery and Removal of Barriers to Success.....	56
4.5.3 Standard Framework -Streamlining Communication with Customers.....	57
4.5.4 Standard Framework- Workplace Culture.....	57
4.5.5 Standard Framework-Access to Information.....	57
4.5.6 Standard Framework- Setting High Standards	57
4.5.7 Standard Framework- Better Order Fulfilment.....	58
4.5.8 Standard Framework-Employees Are Involved in Improving Production.....	58
4.5.9 Standard Framework-Top Management Committed to Ensuring Quality Operational Performance	58
4.6 Supply Chain Management Practices at GREL.....	59
4.6.1 Customer Relationship Management.....	59
4.6.2 Strategic Supplier Partnership.....	60
4.6.3 Information Sharing.....	60
4.6.4 Lean Practices	60
4.6.5 OUTSOURCING.....	61

4.6.6 Logistics.....	62
4.6.7 Responsiveness	62
4.7 Main objective of Ghana Rubber Estate Limited’s Supply Chain Practices	63
4.8 Effects of GREL Supply Chain Management Practices on Operational Performance.....	63
4.8.1 Effects of GREL SCMPs on the aforementioned Operational Performance Metrics.....	63
4.8.2 The Overall Effects of SCM Practices on Operational Performance.	67
4.8.2.1 Operational Performance and Customer Relation Management	68
4.8.2.2 Strategic Supplier Partnership and Operational Performance	69
4.8.2.3 Information Sharing and Operational Performance	70
4.8.2.4 Lean Practices and Operational Performance	71
4.8.2.5 Outsourcing and Operational Performance.....	72
4.8.2.6 Logistics and Operational Performance.....	73
4.8.2.7 Responsiveness and Operational Performance	74
4.9 Regression between SCMPs and Operational Performance	74
4.10 Mediating effect of Knowledge Sharing link between Supply Chain Management Practices and Operational Performance	75
4.10.1 Test for Knowledge Sharing's Mediating Effect.....	75
4.11 Chapter Summary	76
CHAPTER FIVE	78
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS	78
5.0 INTRODUCTION	78
5.1 SUMMARY OF KEY FINDINGS	78
5.2 CONCLUSION.....	80
5.3 Recommendations.....	81
5.4 Suggestion for Further Research.....	82
REFERENCES.....	83
APPENDIX.....	95

LIST OF TABLES

Table 3.1 Operationalization Table.....	43
Table 4.1; Biographic Information	50
Table 4.2: Reliability Analysis	52
Table 4.3 Correlation Matrix of Knowledge Sharing and Operational Performance	54
Table 4.6 Customer Relation and Operational Performance	68
Table 4.7 Strategic Supplier Relation and Operational Performance	69
Table 4.9 Lean Practices and Operational Performance	71
Table 4.10 Outsourcing and Operational Performance.....	72
Table 4.11 Logistics and Operational Performance.....	73
Table 4.12; Responsiveness and Operational Performance.....	74
Table 4.13 Summary of regression model of SCMP's and Operational performance	75
Table 4.14 Summary analysis of result of test for mediating effect	76



LIST OF FIGURES

Figure 2.1 Research Framework:37

KNUST



LIST OF ABBREVIATIONS

SCM- Supply Chain Management

SCMPS- Supply Chain Management Practices

KS - Knowledge Sharing

OP - Operational Performance

RBV - Resource Based View

RV - Relational View



CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Industries across the globe today, find effective and efficient supply chain management as the new way to adopt, to be able to reduce cost, be competitive, and expand their potential market share and profitability. The historical concept of supply chain management evolved from six major movements, thus, the Era of creation, integration globalization, and specialization and to the final stage known as SCM 2.0 according to (Singh and Pusa, 2013). Supply chain basically has to do with the network of organizations coming together to satisfy the needs of the individual (Cheopra and Meindl.2013

In recent times, researchers have argued that, the competition its self is not between companies' but rather between the supply chain of the companies', thus the supply chain of company "A" against the supply chain of company "B" (Christopher s. 16, 38). Today in this part of the world, the competition is between supply chains of companies. To stay competitive, it has become necessary for organizations to understand the practices of supply chain management, this will help them improve their performance in today's world (Cachon, & Fisher, 2000).

Early attempts at supply chain management empirical research focused primarily on developing tools for SCM procedures are measured, (Carroll, et al, 2011). Some academic researchers are currently interested in studying the connection between SCM practices and organizational operational performance. To operationalize organizational performance using financial and market criteria, several metrics including market share, return on investment, profit margin from sales, etc. have been employed. They also zoomed into the connection between theses variables under study.

Due to operationalization of organizations', performance on both a subjective and an objective level (Chileshe, M. and Phiri, J. (2022), this research, among others, have produced different results. The research's showed that organizational performance that is driven by the supply chain can be categories into three (Chau, 1997). Firstly, resource performances result in value addition through achieving efficiency. Furthermore, the capacity of the company to provide top-notch customer service is an example of how output performance adds value. Last but not the least, flexibility performance mimics value addition as the capacity of the organization to react. As a results, SCM has become a prerequisite for maintaining competitiveness in the global market and increasing profitability. (Carroll, Johansen, and Mouritsen, 2011).

A fundamental approach to improving on the operational performance of an organization is to adopt good practices of the SCM process. Recently, a lot of concentrations has been centred on SCM practices as a means for businesses to improve performance and gain a competitive edge in markets (Collin, 2003). There is fierce competition for businesses worldwide. Customers now expect businesses to provide more product line, cheaper, better products, quicker response times, and higher service levels. Lately, top management has come to understand that a company's ability and capacity are no longer the determining factors in how successful it will be eventually; instead, a company's success will be determined by how capable and efficient its supply chain is. Companies are starting to understand that making their entire supply chain competitive is just as important as increasing organizational efficiency on a single level (Braunscheidel, 2005).

Reducing uncertainty throughout the supply chain, maintaining proper inventory levels, minimizing delays, reducing rush activities, and providing excellent customer service are all objectives of an effective and efficient SCM system. Expanding supply chain practices aims at increasing firm interconnectedness and interdependence, profitability, customer response, and ability to deliver value to customers. This is because of growing consumer demands for

goods and services that are of greater quality, more affordable rates, quicker delivery, and a wider selection (Braunscheidel, 2005).

The current state of business competition is not quality based as it existed in the 80's, due to changes in the nature of competition over time (Fawcett et al. 2007), however against supply chains of organizations. The ability of organizations to connect their operations with their supply chain partners, which include suppliers, distributors, wholesalers, retailers, and end consumers, is what determines how successful they will be in today's commercial rivalry, which resides outside of a company (Petrovic-Lazarevic et al. 2007).

The ability to develop an effective and efficient link with clients, suppliers, and other strategic partners is a crucial performance criterion based on supply chain management procedures (Farley 1997). In order to obtain a competitive edge, SCM practices concentrate on how companies manage the capabilities, procedures, and technology of their suppliers (Farley 1997). The connection between an organization's manufacturing, logistics, materials, distribution, and transportation functions provides the foundation for SCM practice, according to Lee and Billington (1992). Businesses have been forced to invest in and refocus significant resources on supply chain practices as a result. In turn, this has led to the development of a supply chain practice within an organization into a strategic objective that guides senior management decision-making (Simchi-Levi et al. 2000). Mensah, Diyuoh, and Oppong (2014) claim that every supply chain management strategy aims to reduce costs while maintaining high levels of customer service. The customer-focused nature of this process also includes incorporating business planning and balancing supply and demand throughout the full value chain system. The ideal SCM approach connects suppliers and consumers in a single, continuous business process that spans the full supply chain from the initial source to the end consumer (Cooper, Lambert, and Pagh, 1997).

For all knowledge management strategists, knowledge sharing is essential to success. Reuse and regeneration of knowledge are made possible at the individual and organizational levels by effective knowledge sharing practices. Knowledge sharing is "the process of transferring knowledge from a person to another in an organization," according to Park and Im (2003). Members build up shared knowledge through this process.

In recent years, there has been a lot of focus on the importance of fostering a culture of knowledge sharing within an organization and implementing knowledge-friendly strategies. To ensure that knowledge management is successful, companies today are working hard to incorporate knowledge sharing practices into their daily operations. This they have seen to be very vital and are inculcating it into their workforce. Many businesses have now launched initiatives to integrate knowledge sharing into their everyday work. They believe that using a knowledge management platform will enable them to freely and profitably transfer experience and knowledge across boundaries. (ICEP 2010). This study incorporates knowledge sharing as a mediating variable to examine how supply chain management practices influences organizational operational performance.

1.2 Problem Statement

Organizations today, are required by competition in the majority of modern markets to work jointly with their partners to be able to achieve their business objectives (Koh et al., 2006). In order to provide the best customer value at the lowest cost possible, they have realized that their supply chains must integrate intra- and inter-organizational activities, processes, and functions (Barratt and Barratt, 2011).

According to Papa Kiriakopoulos and Pramatarı (2010), SCM is thought of as a multidisciplinary field that has been investigated from a number of perspectives. The multidimensional concept of SCM practices includes both the upstream and downstream ends

of the chain. Two different viewpoints on the idea of SCM have been taken into consideration include supply management and buying. These perspectives emphasize the importance of purchasing and materials management as a core strategic business process as opposed to a specialized but limited supporting function (Narasimhan et al. 2004).

Employing the best SCM Practices are deemed crucial in maintaining or staying in business. Low-performing companies must maintain their competitiveness in the global market (Okongwu et al., 2015). As SCM advances, its dual purposes will be better understood due to the nature of SCMPs. both the supply chain's overall performance and the performance of a specific firm. The effective adoption and development of the best SCM practices could help achieve this. (Kim, 2006). The majority of businesses, with the exception of a few, are still unsure of the best practices to implement due to a lack of understanding regarding what constitutes comprehensive SCM practices (Li et al., 2005; 2006). The best supply chain management strategies can improve performance (Tan, 2002).

Organizations today face formidable challenges in order to achieve competitive advantage, sustainable growth, higher organizational performance and efficiency in organizational operations, innovation and creativity, and these goals in the complex, uncertain, competitive, and rapidly changing global business environment. Knowledge is now a tool for competitive advantages. Because we are living in an era of knowledge and information. Because it contributes more and more to competitive advantages and organizational performance, knowledge has come to be seen as a valuable resource for organizations alongside other economic resources (Imran et al., 2021)

According to Dalmarco, Maehler, Trevisan, and Schiavini (2017), during this phase of competitive advantage, every business is involved in economic transformation based on information from the new era of knowledge creation. There is a rise in competition because of

globalization, and an organization's ability to survive in this environment of ferocious competition depends on how well its management controls this knowledge. Although many businesses are engaged in knowledge management, it is not always evident how these mechanisms effect organizational performance or how knowledge exchange and management procedures impact knowledge management performance. Does this mean knowledge sharing is not of a significant role? Must knowledge sharing not be seen as a performance booster tool for an organization? By evaluating the potential mediating role of KS, the study aims to answer this question. Researchers such as (Anantatmula, 2007; Anantatmula and Kanungo, 2010) came to the conclusion that knowledge is a commodity, a crucial economic resource, and a key organizational asset. Knowledge is regarded as a crucial factor in the success of organizations and has been linked not only to organizational advancement. Effective knowledge management is a key factor in how well the services industry performs (B. Obeidat, et al 2016)

Even so, little research has been able to demonstrate how SCM techniques impact organizational performance, especially in Sub-Saharan Africa, where Ghana is located. This is despite the increased interest in SCM practices (Adebayo, 2012; Annan and Otchere, 2013). This study intended to close this gap in the literature by analysing SCM techniques within the context of the manufacturing sector in Ghana. In order to ascertain the influence of SCM practices on these organizations' performance, this study will look into the degree to which manufacturing companies in Ghana use them.

1.3 Objectives of the Study

The overall goal of this study is to examine the connection between SCM practices and organizational operational performance, utilizing Ghana's manufacturing sectors as a point of comparison. In this study, knowledge exchange serves as a mediator.

1.3.1 Specific Objectives

The focus of this study was on the aforementioned precise objectives.

- i. to find the standard framework for guaranteeing organizational operational performance at GREL
- ii. to investigate SCM Practices GREL carry out.
- iii. to discover the effect of GREL SCM Practices on its operational performance
- iv. to evaluate the potential mediating impact of KS on the relationship between SCM Practices and OP.

1.4 Research Questions

- i. What is the standard frame work for guaranteeing organizational operational performance at Ghana Rubber Estates Limited (GREL)?
- ii. What are the SCM practices at GREL?
- iii. What are the effects of GREL SCM practices on its operational performance?
- iv. What effect does information sharing have on the link between operational success and supply chain management practices?

1.5 Study Significance

There have been many studies on knowledge management, SCM practices around the world that have been published in the literature, but little has been done in Ghana, especially in the manufacturing sector, in terms of developing theoretical frameworks, creating theory, developing Knowledge Management models, or actually using knowledge. Despite the increased significance of knowledge management in the manufacturing sector, few studies have examined the link between knowledge sharing as a mediating factor in supply chain management strategies and organizational operational performance. This study will add to knowledge by examining how knowledge sharing plays a mediating role in understanding the

stated process, in addition to how supply chain management practices affect organizational operational performance (Imran et al, 2021).

Due to the relevance of knowledge management in improving organizational performance as well as the vital role that manufacturing plays in a nation's economic development.

By employing KS process as a mediating variable in this work, this research aims to examine the relationships between the knowledge management environment (Explicit knowledge and Tacit Knowledge), knowledge sharing processes (Internal Knowledge Sharing and External Knowledge Sharing), and knowledge management effectiveness (Innovativeness, Efficiency and Adaptability) (Imran et al, 2021).

The academic community as well as practitioners, policymakers, and decision-makers will all benefit greatly from this research. In order to motivate managers to use the techniques to improve effective and efficient SCM and organizational operational performance, the study aims to identify specific patterns of SCM practices. Additionally, to GREL, it would uncover more trustworthy, important scientific data about the difficulties SCM practices the company face and also the need to adopt good SCM practices and also inculcate knowledge sharing in their daily operations. It would help the company's management become aware of the aspects of SCM practices that workers value and those SCM practices that are not accommodating. In several important operational areas and pressing financial matters, this would offer empirical support for management's strategic decisions. Since it will serve as a guide the study will not only focus on good SCM practices but also see the need to encourage knowledge sharing practices into the organizational culture to improve its productivity and operational performance. Hewlett-Packard's industry leader rightly said: "If HP knew what HP knows, we would be three times more profitable."—Lew Platt, former CEO of HP (International

Conference on Ethics and Professionalism 2010 (ICEP 2010)). This clearly shows the significant of knowledge sharing in an organization

This study could be a helpful resource for policymakers as they create effective and efficient SCM processes for businesses in Ghana. The board of directors of companies would also gain invaluable knowledge about the elements that have a negative impact on SCM practices as well as the critical role that knowledge sharing plays in enhancing organizational operational performance. Such data will be important in developing improved SCM strategies to increase supply chain surplus and satisfy customer needs.

Since every company's primary goal is to maximize profit and satisfy customer needs, the findings will aid business organizations in understanding the need to adopt good supply chain management practices in order to maximize their supply chain surplus. As a result, the study's conclusions will be important for future research involving business entities.

For academia, this study will provide a whole new dimension to research on supply chain management practices with knowledge sharing as a mediating variable. The study will add to the existing literature on these concepts

1.6 Scope of the Study

Using the case study of Ghana Rubber Estates Limited, this study intends to examine the potential mediating role of information sharing in the relationship between supply chain management techniques and organizational operational effectiveness. The study's primary focus was on the effects of SCM techniques, with knowledge sharing acting as a mediating element. Natural rubber (latex) for the automotive industry is produced by the agricultural company Ghana Rubber Estates. The study would focus on the company's headquarters and factories. The company is divided into various departments, including the Supply Chain

Department, Administration Department, Factory (Production) Operations, Estates Operations (Agro), and Rubber Out Grower Unit.

1.7 Summary of Research Methodology

The approach to be utilized to collect data from respondents is generally referred to as the research procedure. The target population, important questionnaire variables, and the data collection that served as the foundation for inference and interpretation are all included in this. In conclusion, research is a planned study into a subject with the primary objective of learning and modifying facts, hypotheses, or applications for decision-making. (Panneerselvam 2007).

The study will employ a survey design, primary data from the Sample population will be used in the study thus, sample population will consist of managers and assistant managers of production, heads of department (supply chain, administrative, fleet and transport) and also other staffs. The data will be collected at the head office, factory operational unit and transport unit accordingly. The study will rely on both quantitative and qualitative methods. The process of gathering data will make use of structured questionnaires. In order to ensure that sufficient raw data is obtained for the purposes of data analysis and to enable the researcher to make inferences from the data gathered and draw meaningful conclusions, the research questionnaire is created to elicit specific information for each research question. This is crucial in determining how SCM practices affect operational performance within an organization. The company store records of all information's, such as fuel transactions, tonnage of containers shipped, daily production tonnage, consumables, truck availability etc. that have occurred over a period in their sever and SAP respectively. Data downloads and computer printouts from the system will provide more details for confirming questionnaire responses and supplying collaborative data about the research problem. For each department a key informant will be selected and questionnaires administered to. The simple random sampling and purposive sampling will be

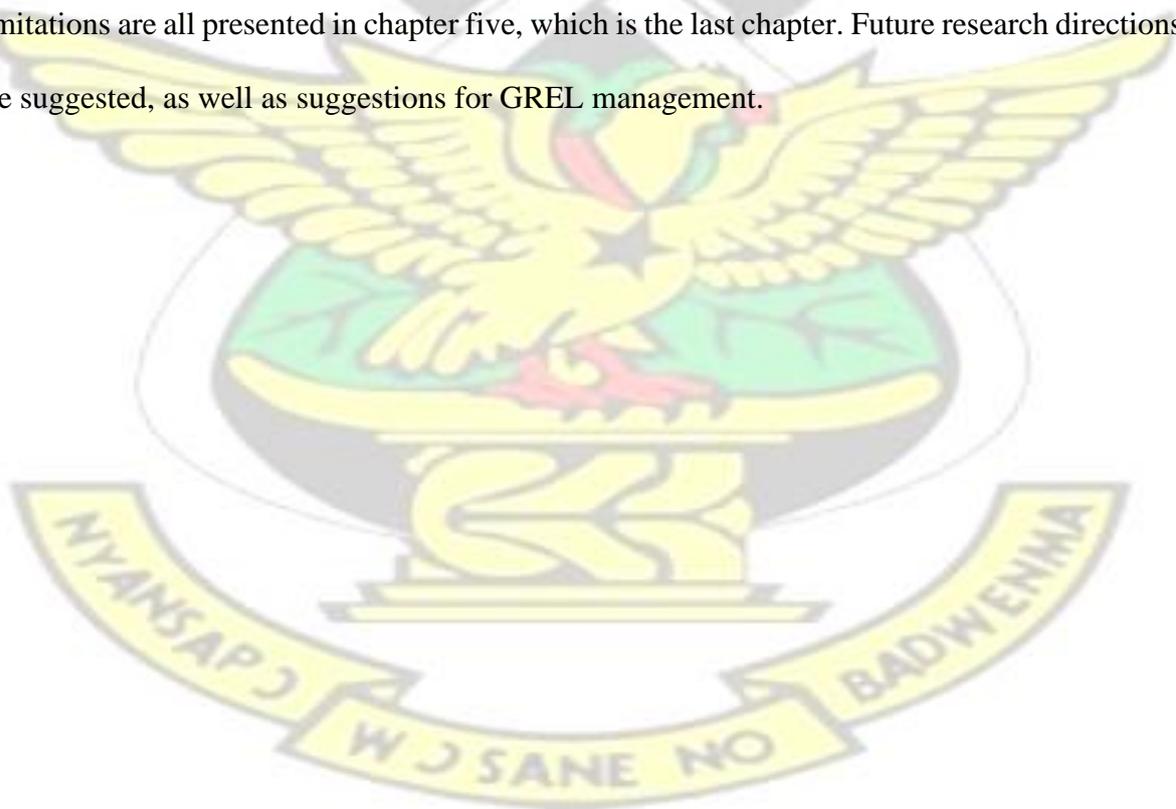
used. The two primary types of sampling, probability and non-probability sampling, are described by Twumasi (2001) as being in general. Selecting respondents who are considered crucial for the goals of this research will be done using random (probability sampling techniques) and purposeful sampling techniques (non-probability sampling techniques). Using the purposive sampling technique, all units of the target population will have an equal chance of being chosen, but certain respondents will be particularly chosen due to their understanding of the study's topic and expertise (Ghauri and Gronhaug, 2002). Targeting important managers and department heads will be done using a purposeful sample method. The relationships suggested by the study will be examined using regression, correlation and Chi Square analysis. Statistical Product and Service Solutions (IBM version 20), Minitab, and Microsoft Excel 2013 will all be used for the analysis.

1.8 Limitations of the Study

Multiple research projects are necessary in order to adequately represent the full scope of the supply chain. Due to time and resource limitations, suppliers and customers were not included in this study's research sample, which is a limitation that prevents generalizations or conclusions about the subject matter from being drawn. The constructs taken into account in this study for SCM and knowledge sharing are also not restricted to those employed in the study. As a result, it cannot be used to represent all theoretical frameworks that could be used to explain SCM and knowledge sharing. The mediating model was additionally examined using Hierarchical Regression Analysis. It is typically regarded as a simple technique and is inadequate in comparison to methods like the Chi-square test of difference and the structural equational model.

1.9 Organization of the Thesis

A total of five chapters makes up the study's structure. The main areas of this research study which examines how supply chain management practices affect organizational operational performance are outlined in Chapter 1 along with the problem statement, study objectives, significance to stakeholders, and study scope. It also includes a summary of the research methodology and ethical considerations. The theoretical, conceptual, and empirical framework are presented in Chapter 2 along with a discussion of previous literature. In Chapter 3, the data collection and analysis methodology and the research design are discussed, this covers the techniques used to gather the data, the instrument design, the sampling techniques, and the methods used to analyse the data methodologies. In chapter four, the research findings and data analyses are shown. The conclusions, theoretical implications of the findings, and study limitations are all presented in chapter five, which is the last chapter. Future research directions are suggested, as well as suggestions for GREL management.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter tries to lay the groundwork for the other parts that address the various study problems by detailing the conceptual review, theoretical review, empirical review, and conceptual frameworks of the study. As a result, the literature on supply chain management, information sharing, and organizational performance will be examined from both historical and theoretical perspectives.

2.1 Conceptual Review

2.1.1 Concept of Supply Chain Management

Supply chain consists of various distinct companies engaged in various upstream and downstream activities and processes (Christopher, 2003). By integrating organizational units along the supply chain and organizing resources to satisfy customer needs, this project aims to increase the supply chain's overall competitiveness. These factors lead to the conclusion that the primary elements of the supply chain and its management are the integration of all connected businesses' upstream, downstream, and internal operations. In contrast, the downstream function, which lay emphasizes on processes, distribution paths, and where the material flow to reach the end consumers. Handfield (2002) described the upstream parties as consisting of business's processes, functions, and network of suppliers. The managers involved in each stream of supply and function are accountable for ensuring that deliveries of materials are made on the right time to their right place of destinations, the external downstream and upstream functions fall under this obligation. Because delays can occasionally be unavoidable, management must ensure that they have the least negative effect on the supply chain and the value it offers. Managers of departments inside the firm must come to an understanding in

situations where they are dealing with people from outside the company, such as when a supply chain involves other companies. Notwithstanding this, "Supply Chain Management" has been used to refer to the planning and control of logistical activities both internally within a corporation and externally across organizations (Cooper et al., 1997). A supply chain may transform into a supply network due to the growing dynamics and people involved, necessitating a more complicated management system.

Supply chain management is the systemic, strategic coordination of the traditional business functions and the strategies across these business functions within a specific organization and across businesses within the supply chain, with the goal of enhancing performance over the long term of each individual organization and the supply chain as a whole (Mentzer et al., 2001). Supply chain management focuses on how businesses can use the technology, procedures, and potential of their suppliers to gain a competitive edge. Directly integrating internal cross-functions within an organization and successfully extending them to the exterior operations of external partners improves competitive performance and paves the way for success (Kim, 2006). Supply chain can also be seen as a group of three or more parties who work together closely to move resources from a source to a client (Handfield, 2002).

Managers must be willing to collaborate with other companies supply chain departments to improve their products and services and also reduce lead time's and costs without compromising the quality of their products (Handfield, 2002). Long-term gains in productivity can be made possible by improved communication and the capacity to lessen any concerns about potential hazards in the production processes. Although it was initially primarily used in the manufacturing sector to improve responsiveness and flexibility, supply chain management has also been shown to boost organizational competitiveness (Gunasekaran et al., 2003), it is now widely regarded as a critical strategic tool for a company's effectiveness and to gain an advantage over competitors. Every business is built on its supply chains (MacCarthy et al.,

2016). Based on MacCarthy et al. In order to coordinate, control, and manage supply chains, various factors change over time, including their configuration, size, shape, and methods. Planning, sourcing, manufacturing, distributing, and delivering the products or services from the point of origin to the point of consumption make up a straightforward supply chain (Ghauri and Gronhau, 2020). Today's supply chain is much more complicated.

A supply chain network is composed of many components, called supply chain nodes that are connected via flow channels. The world constantly poses challenges to the supply chain due to frequent and possibly rapid changes. By controlling the four Ps of the supply chain, goods, personalization, people, and process can consistently and affordably meet consumer expectations (Gaurav et al., 2015). The significance of all four Ps contributes to the supply chain's high efficiency. The prime objective of a business is to maximize value for its stakeholders or customers, which can be proven through return on assets (ROA), return on investment capital, or financial profit. There is currently a lot of empirical evidence that supports the relative importance of SCM methods and their contribution to corporate performance (Narasimhan et al., 2001). Over the past two decades, SCM has expanded tremendously (JChen & Paulraj, 2004)

2.1.2 Relationship between Logistics and Supply Chain

According to Larson and Halldorsson (2004), there are four different perspectives on how supply chain management and logistics are related: traditionalist, re-labelling, unionist, and intersections. Supply chain management and logistics are rarely distinguished by authors; instead, they are simply used interchangeably. Supply chain management, according to Christopher (2003), is a progression of logistics. In essence, logistics is a planning attitude and framework that aims to develop a unified strategy for the movement of resources throughout an organization. Supply chain management's objective, based on this framework, is to connect

and synchronize the processes of the pipeline's entities. Supply chain, according to Schary & Skjott-Larsen (2008), encompasses more than just logistics. Additionally, in order to connect their internal operations as a part of this system, the organizations involved in these processes must cross organizational boundaries.

This includes the delivery of goods and materials to customers. The entire group of businesses are covered by the supply chain's purview, which begins with the procurement of raw materials and product kits and lasts until the delivery of finished goods to the final customer (Schary and Skjott-Larsen, 2008).

2.1.3 Drivers of Supply Chain

In order to produce results in the current market, organizations must lower costs while maintaining production and quality standards. Organizations must successfully overcome several obstacles to accomplish these aims. According to Meakem (2003), emerging technology and free market economies are generating new supply and demand markets globally. For instance, many companies source their supplies from China. Many of these businesses, however, have inadequate information and expertise required to change supply and manufacturing abroad. Only strong businesses will survive, according to the laws of free market competition worldwide. As a result, industries are merging quickly across the world. In turn, it necessitates that businesses pick the finest suppliers and integrate them into their core business operations. Companies from various sectors and regions are comparing make vs. purchase options. The value of outsourcing the production of goods and services is also increasingly recognized by a large number of people. Handfield (2002) in his work summarized divers into the following below:

1. The ever-growing customer demand is caused by global competition in goods and services, quality, delivery costs, technology, and cycle time.

2. The advancement of higher order cooperative inter-organizational systems and their increased adoption relationships.

3. The revolution in information. As a result of this expansion, businesses are putting more and more work is being put into creating novel ways to boost market competition in terms of improved supply chain management effectiveness and efficiency.

2.1.4 Supply Chain Management Processes

According to (Ronald, 2012), The Global Supply Chain Forum identified the following seven SCM Processes.

- Customer Relationship Management - this function gives the company's customers a face, manages Production Supply Areas (PSAs), and acts as a central repository for customer data.
- Supplier Relationship Management (SRM) - SRM provides the framework for developing and preserving relationships with suppliers, including the development of PSAs between the business and its suppliers.
- Customer Service Management - Customer service management serves as the public face of the company when it comes to managing PSAs and serving as a lone source of customer information. Demand management offers the structure for balancing consumer demands with supply chain capabilities.
- Order fulfilment is the process of defining client needs, organizing the logistics system, and completing client orders.
- Manufacturing Flow Management -This covers all steps required to transfer goods between factories, as well as acquire, put into practice, and oversee manufacturing flexibility in the supply chain.

- Product Development and Commercialization- provides a platform for collaborating with suppliers and customers to create and launch new goods.
- Returns Management- This category includes all operations, including refunds, avoidance, gate-keeping, and reverse logistics.

There are both operational and strategic sub-processes in every SCM process. The operational sub-processes give the specific steps for execution, whilst the strategic sub-processes provide the framework for how the process will be carried out.

2.1.5 Supply Chain Management Practices

SCM approaches have an impact on all businesses, thus managers must exert more effort in their major outcome areas if they want to remain competitive and rule in the current market. Chima (2007) put out a variety of SCM strategies, such as supplier collaboration, customer focus, efficient information conduits, and delay. It has been concluded that these are relevant for this study.

2.1.5.1 Supply Relationship Management

This is how the company and its suppliers are related within the organizational hierarchy. It demonstrates the connections and interactions between the companies and the main resource providers. Active supplier interaction and the presence of a comprehensive supplier development framework are essential tools. Excess inventory is eliminated, production costs are decreased, demand uncertainty is enhanced, and income is increased by coordinating operational activities through collaborative planning with suppliers (Arshinder,2008). The use of more efficient methods and improving supplier on-time delivery are also beneficial. Businesses are urged to maintain contact with their suppliers through routine meetings, dissemination of corporate policy, review of payment terms, and ongoing process improvement

As a best practice, supply chain management enables the assessment of current suppliers and the screening of potential suppliers to increase capacity and supplier diversity

Organizations may inspect and evaluate their suppliers before forming relationships thanks to the lean supply base. This will increase the level of mutual respect and trust. Partnerships for a lean supply base enhance corporate operations, result in better products, and lower costs and inventory. SRM equips firms with the strategies they need to use procurement as a key supply chain service instrument.

2.1.5.2 Customer Relationship Management

To be responsive to their constantly changing needs and wants, customer relationship management often focuses on how well the business handles the customer function. It consists of methods for handling client feedback, collaborations with them, and approaches to enhance customer service. Building customer relationships necessitates, in Holmberg's (2005) opinion, the implementation of management support systems, employee training, open internal communication, and participation in external communication. Management of a company can better grasp its consumers' requirements and goals by getting to know them. According to Bearnon (2014), better customer relationships can enhance demand analytics, which will help with resource and material planning as well as the effectiveness of operations. Additionally, their overall SCM efforts will be successful as a result by creating a wall to protect them from competition. A business has an advantage over rivals if it maintains a close network with its customers having a good customer relationship also means providing prompt goods and services maintaining reports for orders during order booking and delivery times, communicating product characteristics to customers, and other duties are crucial to preserving a positive customer relationship (Flynn and Flynn, 2005).

2.1.5.3 Information Sharing

This has to do with how much confidential information is made available to supply chain actors (Moberg, et al., 2002). By making sure there are information systems at every level that help spread crucial knowledge about material resource planning, safety stock management, and demand management, help to fill in the gaps in supply chains that currently exist. Sharing information among businesses and the people who make up their supply chain makes it easier to keep the right amount of stock on hand and reduce issues with product shortages. On the other hand, many channel participants may contribute useful information on the quantity of raw material supply requirements when sharing data on their operational activities (Chen and Paulraj, 2010)

2.1.5.4 Logistics

All supply chain operations that deal with moving raw materials and finished items through several operational tiers of an organization are considered logistics. For a logistics plan to be successful, there must be a smooth end-to-end transfer of raw materials and completed goods to the consumer. Businesses should adopt and spend money on a reliable logistics system that works well with the other supply chain activities. To provide value to the customer or consumer, it therefore affects all business processes (Alphonse, 2013). Strengthening connections and facilitating the involvement of all processes are necessary for the development and implementation of this approach (Bearnon, 2014).

For upcoming supply chain studies, Chen and Paulraj (2010) presented a paradigm that views logistics as having the largest impact on both supply chain structure and performance. Wisner (2003) found a significant link between effective logistics planning and organizational success. Cooper et al. (2014) conducted research on the connection between retail industry organizational performance and logistical quality. Every global manufacturer should place a

high focus on logistics since it will aid in supply chain management and improve communication with its important stakeholders, customers, and suppliers by ensuring a steady flow of goods and information.

2.1.5.5 Outsourcing

To obtain services that were previously handled internally, an organization may outsource the management of its operations to a third-party provider. Businesses frequently opt to outsource some of their duties after analysing their core business operations. In an effort to make their current systems more effective, many organizations now choose to outsource a portion of their services. They result from a desire to reduce expenses so that they can focus on their main enterprises. Benefits of outsourcing include cost savings, improved knowledge of new systems and procedures offered by outsourcing organizations, increased productivity, a positive corporate image, and more management focus on employee welfare. The advantages of outsourcing, however, may only be realized if the appropriate organizational tasks are delegated to outside parties (Supalak, 2010). To make the best decision possible, a company should speak with all of its stakeholders, including senior management, employees, and service providers. Businesses must take care not to lose control of their loyal consumers and supplier confidence in their efforts to outsource. This approach requires balance and ongoing auditing.

2.1.5.6 Strategic Supplier Partnership

The long-term cooperation that exists between a business and its suppliers is known as a strategic supplier partnership. By putting their strategic and operational skills to use, each participating firm will be able to obtain substantial ongoing benefits. Strategic alliances with some important suppliers that are willing to share accountability for the success of the products enable organizations to work more productively with those suppliers. Early supplier involvement can lead to more cost-effective design possibilities, assistance in deciding which

materials and technologies to use, and assistance in design review (Tan et al., 2002). Businesses that are strategically linked can cooperate more efficiently and work closely together to save time and effort (Balsmeier and Voisin, 1996). Successful supplier partnerships may be a key component of an innovative supply chain (Noble, 1997). Raps (2005) suggested that an integrative view of the strategy implementation process is essential for success. The strategic value of integrating producers, suppliers, and customers has been stressed by several scholars. Christopher (2003) asserts that it is essential to link an innovative strategy to the company's vision and overarching business plan. As a result, it is demonstrated that most clients are substantial contributors to performance enhancement and innovation, along with the main driver of supply chain practice integration.

2.1.5.7 Lean Practices

The ideology of lean practices caught the eyes of the west in the early 80's due to the intense competition from the Japanese automobile industry, which offered low pricing and high-quality goods, the name "lean" was first used by the Lean Enterprise Institute (2009) in the late 1980s. It's difficult to define lean properly, and it's likely that any business that uses it will take a different path (Lewis, 2000). It is the strategy for fully utilizing resources during production process. Lean is categorized as a technique, management idea, work ethic, value, methodology, or a way of life (Wilson and Roy, 2009).

Some popular lean procurement approaches are Kaizen and Supplier development, as mentioned by Bhasin and Butcher (2006). To transform an organization into a lean enterprise, it is necessary to have the correct procedures, people, long-term philosophy, and culture (Liker, 2004). It is obvious that maintaining long-term connections with suppliers is crucial to achieving lean supply (Handfield, 1993). Lathin and Mitchell (2001) asserts that modern need-driven supply chains necessitate lean procurement techniques with the following objectives:

prevent shortages, reduce inventory investment, remove waste across the entire procurement process, cut down on lead times and costs associated with procurement, boost inventory turnover, and guarantee customer satisfaction. Therefore, these techniques guarantee increased effectiveness and procedure standardization.

2.1.5.8 Responsiveness

The ability of a system or functional unit to explicitly execute assigned tasks within a certain time limit is how Faisal (2011) defines responsiveness in his study. It could be used, for instance, to define a computer system's capacity to comprehend and complete tasks swiftly. It falls under the robustness principle as one of the criteria. The rate of activity that ensures that customers receive their orders as quickly as feasible. The other three are task compliance, recoverability, and observability.

The system's ability to use the existing resources as efficiently as feasible is far more crucial. To ensure smooth mouse interactions, for example, it seems sensible to let the mouse driver run at a very high priority. The most crucial aspect of long-term operations, like copying, downloading, or altering large files, is to offer meaningful user feedback rather than the operation's performance because it may effortlessly run in the background utilizing just available processing time (Hausman, 2004).

2.2 Knowledge Sharing

It is now feasible to link chain-like facilities in order to synchronize operations on –time, thanks to accessible and affordable information technology, service demands and demand priorities, essential market data, and logistical capabilities can be met (Beamon and Chen, 2001). Modern supply chain management systems require a constant flow of knowledge due to their constantly growing size, complexity, ability to run a 7/24 system, evolved production processes, and integration of longitude industries and customers (Hershauer et al., 2005; Kumar, 2007).

Companies that are theoretically connected to one another can establish new ties, contrast data, and weigh options to make intelligent decisions (Burtonshaw-Gunn & Salameh, 2009).

Communication confidential information with SC partners is known as knowledge sharing (Chantrasa, 2005). According to Li (2007), there are many levels of supply chain integration that increase customer value according to the level of participation, information sharing, and cooperation. Many studies highlight this as a key facilitator for some SCM procedures, illuminating the full potential of SCM exchanging long-term data including market trends, fresh product introductions, and prospects (Malhotra, 2000). Cooperative information sharing also requires management support, openness, and mutual trust (Arun, 2008; Yalciner, 2004). One of the outcomes of information exchange is how managers' information processing activities are related to performance, particularly in the buyer-supplier relationship (Lancioni et al., 2000), however, if the manufacturer and retailer do not exchange promotion-related information, the manufacturer's profit will decline because of changes in demand (Zhao, 2002). Synchronizing supply, manufacturing, and delivery is the goal of effective SCM. To achieve this, businesses must make the most of inter-firm connectivity, businesses must utilize inter-firm connectivity, share information in real time, and improve resources allocation coordination across the supply chain to its full potential in order to accomplish it (Dong et al., 2009). Few businesses thought the internet would be helpful in 2001 (Chorafas, 2001), however, 10 years later, a sizable portion of manufacturing technologies is propelled by information systems that can electronically share knowledge while enjoying the trust and backing of senior management. Sharing of knowledge is consequently necessary for the management of the contemporary supply chain and the promotion of efficient supply chain operations. (Kim and Narasimhan, 2002). Additionally, enhancing staff knowledge is essential for the creation of information-linked value in supply chain contexts (Greeff and Ghoshal, 2004), which will enable managers to make better decisions and collect unvarnished, correct

data without delay or distortion (Li, 2007; Li, 2002). In this instance, sharing knowledge can aid in solving the puzzle. Sharing knowledge has advantages, but it also has some disadvantages. These include prohibitive prices, privacy concerns, industrial espionage, and the inability of knowledge sharing to provide answers to "why" queries, which could have a negative impact on performance (Chantrasa, 2005). Information sharing and all other measures of overall organizational performance can boost the competitive performance and quality of SCM as a result of SCM competition (Li, 2002; Smith, 2013).

2.3 Organizational Performance

Organizational performance, as defined by Yamin (2009), is the extent to which an organization achieves both financial and market-oriented goals. The primary short-term objectives of supply chain management are to increase production efficiency, decrease inventory, and shorten cycle times. The long-term objectives are to increase market share and earnings for all supply chain participants (Tan, 2008). Financial indicators can be used to compare various businesses and determine how they have changed over time (Holmberg, 2000). Supply chain management is one institutional endeavour that should ultimately enhance organizational performance. Numerous earlier studies have evaluated the performance of organizations using financial and market criteria. The return on investment (ROI), market share, profit margin on sales, growth in ROI, sales, and market share, as well as overall competitive position as reflected by constructs like Price/Cost, are some of these criteria. This is the ability of a company to compete with significant rivals on the basis of high quality and reasonable prices (Li, 2006). The capability of a company to move goods with a high level of performance and value for customers' delivery and dependability. This involves a company's capacity to deliver on schedule, as well as the kind and volume of product that customers need (Li et al, 2006).

2.4 Operational Performance

When environmental responsibility, effectiveness, and efficiency metrics like cycle time, productivity, waste reduction, and regulatory compliance are used to assess a company's performance, the result is known as operational performance. In number of academic literatures, the topic of measuring, evaluating, and conceptualizing operational performance in a company frequently comes up. Venkatraman and Ramanujam's (2012) classification is one of the first broad categories that has gained widespread acceptance. To differentiate between financial and operational performance, they adopted a strategic management perspective and put a strong emphasis on performance measurement. According to Kaplan and Norton (1992), who took a similar stance, the traditional financial performance measures are no longer appropriate given the demands of modern business. They came to the conclusion that operational management measurements were required with regards to customer satisfaction, SCM techniques, internal procedures, and other organizational enhancement and invention initiatives that result in future financial gains.

It is common practice in the field of operations management to refer to manufacturing performance, which includes a portion of operational performance previously mentioned. Performance of this kind takes into account how well the company accomplishes its primary objectives, namely productivity, quality, and service. The 1993 model by Corbett and Wassenhove considers three performance dimensions: cost or efficiency, quality, and time. The factory can provide value to customers because low-cost products and less waste are produced as a result. Quality-based performance measures have a history of being more concerned with issues like the number of defects caused and the cost of quality because the notion of quality has usually been in terms of conformity to specification. Customer satisfaction has become more of a priority since the introduction of total quality management (TQM), with the emphasis moving away from just meeting specifications. In either scenario, businesses must achieve high

standards of performance to enhance and preserve their level of competitiveness. Supplier relationships also heavily rely on quality. Reliability is the first aspect of performance measured over time. As a result, meeting delivery commitments and making on-time deliveries may have a big impact on how well suppliers get along with customers. It is typical to gauge production speed, the second time-related dimension, as the interval between receiving materials and delivering the finished product to the customer.

The goal of just-in-time (JIT) and other production planning and control techniques is to improve the efficiency of production processes so that they can more quickly satisfy customer demands. More focus is placed on quality, efficiency, and time factor when organizations choose to maximize or enhance their operational performance. Because supply chain management also aims to assure efficiency with a good time factor, a supply chain process failure would have a considerable detrimental effect on an organization's operational performance (on time delivery).

2.4.1 Performance and Supply Chain Management

Prior studies have measured SC performance using a variety of metrics. In general, financial and non-financial categories have been established for performance measurements. Four general critical performance measures, such as quality, delivery, cycle time, and waste, should be monitored and controlled by a good performance measurement system (Robertson et al., 2002). Although cutting-edge tactics like teamwork and the use of non-financial measures should be supported by modern measurement systems, they are still important (Hoek, 1998). According to Lockamy et al. (2000), Rai et al. (2006), and Zhou (2003), the measurements of SC are effectiveness, efficiency, relevance (how well your organization's mission continues to serve the interests of your numerous stakeholders), objective measures, financial viability, and time correspondence. Days of supply, the cash cycle, how well deliveries performed in regard

to commitment dates, and how well deliveries performed in comparison to quoted order wait periods were all measured by McCormack (1998). According to (Ramdas and Spekman2000), inventory costs, product development schedules, time to market, order fulfillment delays, quality, customer focus, and customer satisfaction were all measured. Financial, innovative, functional, organizational prestige, and customer relations management were examined as the five performance factors by (Sahin, 2009).

The following nine metrics were monitored by Performance Measurement Groups in the 1990s: delivering performance to request, upside production flexibility, total supply chain management cost, cash-to-cash cycle time, order fulfillment lead-time, order fill rate, total inventory days of supply, value-added productivity per employee, and net asset turns. Subsequently, the SC operations reference model (SCOR) model included these nine dimensions. To explain why the SCOR model was adopted and how crucial supply chain factors and their linkages were not disregarded (Beamon, 1999). The performance of an organization can be assessed by how well its members perform in this endeavor (Robertson et al., 2002), therefore the departments' efforts help to assess the organization's overall performance. Here, a SC is divided under the SCOR model into five separate management processes: (Ross, 2003; Swink et al.,2014) Plan (cycle time metrics related to demand and supply planning and management), Source (cost metrics related to sourcing, unit costs, lead times, and inventories), make (asset metrics related to production, quality, changeover, and capacity utilization), deliver (service metrics related to on-time shipment, order fulfillment, warehousing, and transportation), and Return (returns and defective products). Because the performance of SCOR models is frequently isolated to specific units, it is quite appropriate to assess each SCM component independently by comparing them to the SCOR model components (Manzoni and Islam, 2009: 10).

2.4.2 Relationship between SCM Practices, Knowledge Sharing and Operational Performance

Various generic strategies are used by businesses in their customer acquisition competition, including price, quality, delivery time, flexibility, and innovation. Metrics for measuring company performance are commonly cited as a way to increase performance and decrease structural and operational uncertainty at the supply chain level. These metrics include growth in earnings, change in market share, return on assets, reduction in operating costs, and shareholder value (Martin, 2002). Competition with other supply chains is the goal of SCM (Unuvar, 2007). Only a few of these variables directly relate to SCM outputs.

A network and business model that are strategic called SCM aims to combine organizations' many competences and crucial business processes, where IT and information-sharing capabilities play a crucial role. Although information sharing serves as the foundation of SCM, some experts contend that it has no discernible impact on workers' performance (Yusuf et al., 2004). Knowledge sharing can only result in a supplier's commitment to the buyer and have a greater impact on the supplier's capabilities and performance with trust and strategic cooperation (Kannan and Tan, 2002).

Information collaboration and their improvement of integration into supply chain integration, either tacitly or explicitly, are vital to maximizing consumer happiness and corporate success. These elements have to do with the know-how and know-what of developing new goods and services, cutting-edge operations, and new marketing strategies. Accessibility, variety of product/service offerings, timeliness, profitability, and growth were the five criteria used to assess business performance (Min and Mentzer, 2004). In addition to marketing performance (trust and customer satisfaction), In addition, Tracey et al. (2005) examined the financial

performance (return on investment and return on sales), market performance, and product value.

A lot of research has been done to determine how SCM impacts performance, with varied degrees of effectiveness. According to some researchers, SCM and knowledge or IT exchange have a minimal or nonexistent effect on an organization's performance (Vereecke et al., 2006). (Zhou, 2003) However, the SCM guidelines have not been used to evaluate this performance.

Nevertheless, other experts claim that SCM offers significant advantages to organizations' performance and competition (Tracey et al, 2005) SCM was not typically utilized to assess organizational effectiveness in earlier surveys. According to Z. Honggeng (2003), the empirical example of this study is based on the performance indicators of SCM, which include delivery, cost, flexibility, responsiveness, and financial performance.

This investigation proved that information exchange between suppliers and customers can result in significant economic values and improve SCM performance (Yalciner, 2004).

2.4.3 Effect of Supply Chain Management on Organizational Operational Performance

Organizational performance, according to Venkatraman and Ramanujam (2012), is the ultimate economic goal of a firm. Some potential metrics for measuring the performance of firms include profits, returns on investments, asset returns, equity returns, and stock market performance (Garcia, 2005). Tharenou; Saks & Moore, 2007; Davis and Pett, 2002; Hubbard, 2009; and Ostroff, 2009; all looked at the categorization of organizational performance. The main objectives of SCM are to increase productivity, reduce inventory, and shorten cycle times in the short term, while the long-term objectives are to increase market share and profitability for all supply chain players (Tan et al., 1998). Financial indicators have been used to evaluate firms' past performance and compare them to other organizations (Holmberg, 2000). (Li et al.,

2006) argue that improving organizational performance should be the goal of all organizational initiatives, including supply chain management. Behavioral outcomes, such as turnover and satisfaction, as well as non-behavioral consequences, such as profit, or the anticipated goals, such as product quality, as well as unexpected results, such as turnover, were discussed by Ford and Schellenberg in 1982. (Park, 2009). The general expansion of the company's employees and sales is taken into account when evaluating organizational success. Another aspect to take into account when assessing performance is comparing financial and non-financial performance within an organization. The conceptual framework offered by Venkatraman and Ramanujam (2012) illuminates the organizational performance characteristics from this perspective. In their article from 2012, Venkatraman and Ramanujam stated that business performance includes both financial and non-financial performance. The basis for assessing organizational effectiveness in a broader sense includes financial performance and business performance. According to their understanding of organizational performance, financial performance is a more restricted term than business performance. Financial performance emphasizes using outcome-based financial indicators and presupposes that a company's goal is to generate profits. Sales growth, profitability (including metrics like return on equity, return on investment, and return on sales), earnings per share, and other metrics are frequently used to evaluate financial success. Ramanujam and Venkataram (2012).

Because it includes both operational and financial performance, the term "business performance" is believed to be the most inclusive way to define organizational performance (Park, 2009). Financial performance also includes measures of an organization's efficacy and efficiency, such as the after-tax return on total sales and return on total assets. Examples of these indicators include sales growth. According to several scholars, focusing on efficiency and effectiveness concepts can help businesses generate higher returns, as stated in Ford and Schellenberg (1982). Additionally, Davis and Pett (2002) provided indicators for both

organizational effectiveness and efficiency as well as a typology of performance. As a potent tool for competitive advantage, integrating information, money, and material movements throughout the supply chain is SCM's primary objective (Childhouse&Towill, 2003). The term "supply chain" is somewhat deceptive because a network of relationships and enterprises, rather than a formal sequence of firms, constitutes a supply chain. (Drucker, 1998) asserts that improved organizational performance results from the integration of internal company tasks with those of other businesses along the supply chain. This is made possible by the utilization of SCM methods, information and product flows, and condensed supply chain network structures.

The following themes would be effectively and efficiently managed, which would improve organizational performance:

- Customer relationship management (CRM) - CRM serves as the company's public face and a centralized repository for customer data.
- Supplier relationship management - This method offers a structure for developing and upholding relationships with suppliers, including those between the business and its own suppliers.
- Customer service management: serves as a single source of customer information and presents the firm's face to the customer.
- Demand management – provides the framework for balancing customer demands with supply chain capacity.
- Order fulfilment- entails all activities necessary to determine customer needs, create a logistics system, and complete customer orders.
- Manufacturing flow management- includes all steps necessary for the supply chain's manufacturing flexibility to be acquired, implemented, and controlled. It also includes the movement of goods between facilities.

- Product development and commercialization- It provides a framework for creating and releasing new goods in collaboration with clients and vendors.
- Returns Management - This phrase refers to all procedures involving returns, gatekeeping, reverse logistics, and avoidance.

Every SCM process includes both operational and strategic sub-processes. The operational sub-processes offer the specific steps for implementation, whereas the strategic sub-processes offer the framework for how the process will be carried out. At the operational level, daily operations take place, while the strategic phase is crucial for integrating the organization with other supply chain partners (Lambert, 2008).

2.5 Theoretical Review

This study adopted the Relational View (RV) and Resource Based View (RBV) Theory.

2.5.1 Relational View (RV) and Resource Based View (RBV) Theory

Two essential theoretical foundations for the interaction between performance and supply chain management strategies are the resource-based view (RBV) and its extension, the relational view (RV). In accordance with resource-based view, businesses are not all the same and their ability to compete effectively depends on having access to unique, valued, unmatched, and non-substitutable resources and capabilities (Peteraf,1993). Relationships were introduced to the resource-based view's initial approach, which concentrated on internal assets owned by a corporation, as a potential source of competitive advantage and performance improvement, Relational View (RV) was consequently created (Dyer & Singh, 1998). Relationships are viewed as a potential source of improved performance in the relational view. As a result, four primary sources of relational rents are identified: significant information sharing, investments in relation-specific assets, corresponding and uncommon resources, and decreased transaction costs. On the basis of informal safeguards like trust and reputation, more effective governance

tools have an impact on the sources cited (Holcomb and Hitt, 2007) Relational resources and competencies should be rare, valuable, and challenging to imitate or replace in order to provide long-term competitive advantage, much like the perspective of the resource-based view.

In general, if we analyse supply chain management's actions from a relational perspective, we can better understand how it affects performance. The accuracy and timeliness of knowledge exchange closely correlate with the quality of the information. Long-term relationships with suppliers and consumers can help to reduce transaction costs by helping to build trust and reputation (Mentzer et al., 2001). This can also guarantee investments in specific assets and advance the flow of knowledge. Nevertheless, Moslem et al. claim otherwise. Internal lean practices, according to (2013), can reduce waste and transaction costs.

2.6 Empirical Review

Organizational performance and supply chain integration are directly correlated, according to research by Otchere et al. (2013). Higher levels of integration typically result in better performance because internal cooperation is a key indicator of a company's performance. Kim (2006) discovered that while effective supply chain integration is more crucial for long-term performance improvement in small businesses, in large firms, the link between SCM techniques and competitiveness is stronger.

Flynn et al., 2010 assessed internal lean processes, supplier integration, and customer integration for their impacts on business operations and industry performance. They discovered that operational performance, as well as business and operating performance, are directly impacted by both internal and external integration.

Although they are not directly linked to either type of performance, customer and supplier integration are related to operational performance. The integration of internal and external systems has an impact on performance as well. The relationship between corporate

competitiveness and operational supply chain competence has less of an effect on performance improvement as supply chain integration moves into a more advanced stage (Otchere et al., 2013).

Alireza et al., claims that, distributing information about supply chain quality, supply chain flexibility, and delivery components are all independent variables affecting operational success. (2011) examined the Malaysian electronics market. Findings from the studies reveal that, the efficient sharing and delivery of information benefits organizational operational performance. Performance of organizations is directly impacted by effective information exchange and dissemination. The results also showed how delivery affects corporate success in terms of customer relations.

Directly affecting organizational effectiveness is flexible information sharing. The study emphasizes how crucial customer relationships are to an organization's effectiveness.

A study on the “impact of SCM methods on competitive advantage in manufacturing firms of Khuzestan Province” was conducted by Moslem (2013) employing a variety of parameters, including strategic partnerships with suppliers, connections with customers, the caliber of information sharing, and other aspects (Iran). The discovery findings of this study suggest a positive and significant link between SCM practices for supplier strategic partnerships, customer relationships, and product quality internal lean practices, information sharing, and organizational performance.

In 2007, Lenny et al. performed research on how Turkey's SMEs fared in relation to supply chain management tactics. The study classified supply chain management techniques into two groups using exploratory factor analysis (EFA): outsourcing and multi-suppliers (OMS) and strategic collaboration and lean approaches (SCLP). The findings showed that both the SCLP and OMS parameters have a positive and considerable direct impact on operational

performance. But neither SCLP nor OMS significantly and directly impact SCM organizational performance.

In a separate investigation on supply chain management measurement and its effect on operational performance, Priscila and Luiz (2011) viewed quality information sharing, long-term relationships, responsiveness, and process integration as independent variables that impact organizational performance in the case of Brazilian companies. The findings showed that metrics for supply chain management have an advantageous impact on organizational performance.

In research published in 2011, Arawati focused on the connections between supply chain management and these links, the findings indicate that aspects of supply chain management like "lean production," "responsiveness," "strategic supplier partnership," and "quality of information" seem to be of the utmost importance and have a sizable impact on performance. Adebayo did a study on supply chain management strategies in Nigeria in 2012. Internal lean practices, information quality, customer relations practices, and strategic supplier partnerships were among the supply chain management practices taken into account in this study. Along with a description of how these practices relate to organizational performance, the research provides empirical support for the five significant supply chain management techniques that have been established. According to the study, the listed SCM techniques have a significant and positive impact on organizational performance. In the pharmaceutical sector of Bangladesh, Mahbubul (2013) studied how supply chain management techniques affected organizational performance. The study's findings showed that supply chain management tactics employed in the industry include the three elements of quality information sharing, strategic supplier partnerships, and client relationships. Customer relationships have little bearing on an organization's success, despite the fact that the first two do. The literature studies above make it abundantly evident that attempts to enhance supply chain management techniques and

metrics, as well as the manner in which they impact different organizational orientations and supply chain partners as a whole, are expanding and yielding positive results.

2.7 Conceptual Framework

The conceptual framework for this particular study will be constructed on the basis of an extensive review of the relevant literature, with a focus on the works of (Sillanpa, 2010), (Klemencic, 2006), (Salazar, 2012), and (Mohammed, 2014). Figure 2.1 shows the suggested framework for this study. The framework illustrates how supply chain management strategies, knowledge sharing, and organizational operational success are related. Additionally, it uses knowledge sharing as a moderator to show how supply chain practices impact organizational performance.

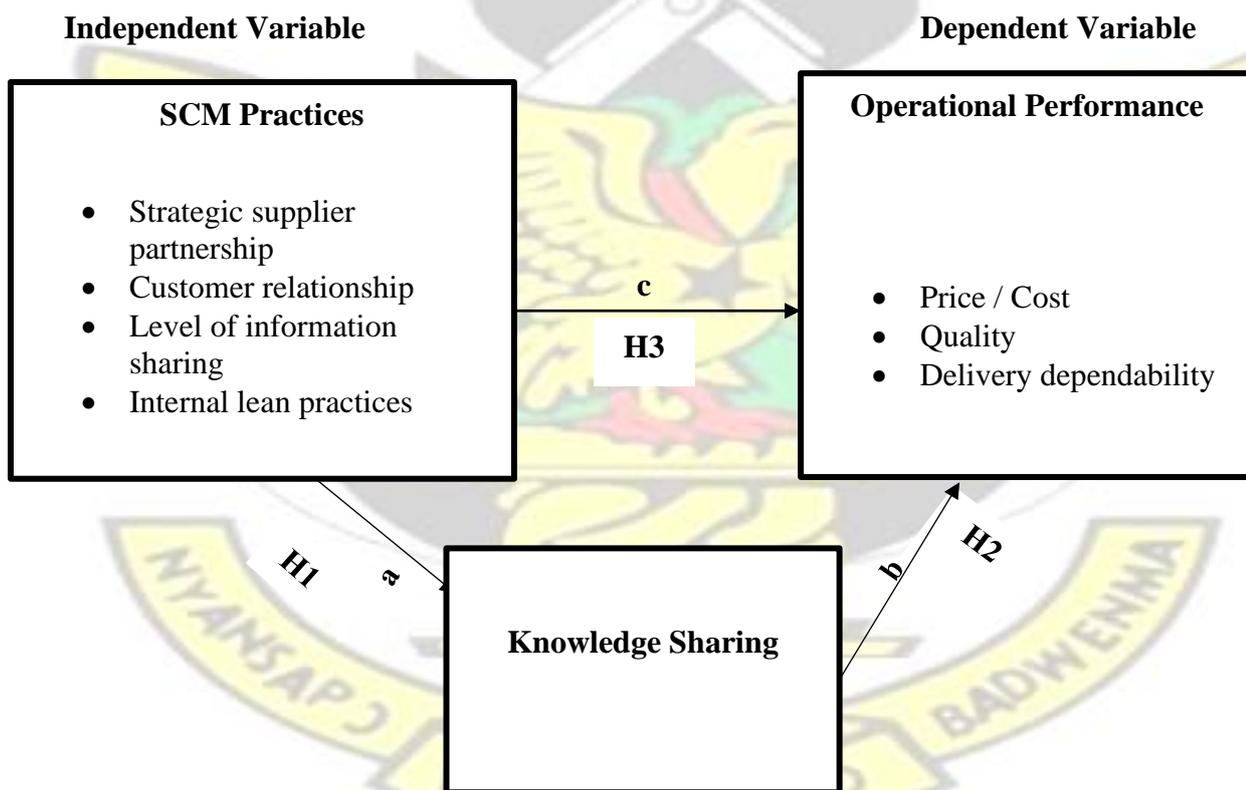


Figure 2.1 Research Framework:

Source: amended by the present researcher from Li et al. (2006) and Lenny et al. (2007)

2.7.1 Knowledge Sharing and Supply Chain Management Practices

It is acknowledged that knowledge is a "justified true belief" (Nonaka, 1994). The process through which knowledge possessed by one person is transformed into a form that can be comprehended, absorbed, and utilized by another person is known as knowledge sharing (Ipe, 2003).

The collaborative nature of these exchange relations, however, we feel emphasizes interpersonal collaboration and information sharing, even if the viewpoint in this article is on the supply chain scenario. Sharing of information is essential because it creates a bridge between individuals and organizations by transferring individual knowledge to the organizational level, where it is transformed into economic and competitive value for the business (Hendriks, 1999). Since 1990, the number of network organizational structures for commercial activity has quickly expanded. Some of the driving forces behind this trend include globalization, growing technological complexity, and the usage of the internet to lower inter-organizational transaction costs (Ford, 2002).

In the literature, many advantages of knowledge sharing in network contexts have been highlighted. Companies cannot access and use the specialized resources and capabilities of the numerous partners involved in the network without the ability to share knowledge. According to Nonaka and Takeuchi (1995), the ability to share knowledge is also a prerequisite for the generation of new knowledge. It has been suggested that networks with better knowledge transfer procedures will be able to "out-innovate" networks with ineffective knowledge-sharing practices (von Hippel, 1966).

Hypothesis 1: Effective knowledge sharing has a positive effect on Supply Chain Practices

2.7.2 Knowledge Sharing and Organizational Operational Performance

According to Monczka et al, (1998), the amount of critical and private knowledge shared among supply chain partners is correlated with the degree of knowledge sharing. Mentzer et al, (2000) noted that the nature of knowledge sharing can be variable, particularly when it comes to consumer information flowing through the information concerning logistical activities. In essence, knowledge sharing concerned data on logistics, client orders, projections, scheduling, the market, and other topics. Furthermore, information exchange includes access to private data so that trading partners can monitor the state of the product and the status of the order via the supply chain system (Simatupang & Sridharan, 2002 and Zhao & Benton, 2007). Strong supply chain interactions are known to be characterized by information exchange, according to Lalonde (1998), who lists it as one of the essential SCM activities.

Supply chain partners who interact often, according to Stein and Sweat (1998), are better able to adjust to market change because they can work together as a single unit and understand the needs of the end user. Sharing information can help the operation process run more smoothly by ensuring that information about demand and product availability flows correctly and systematically. Additionally, when supply chain participants are informed about one another (Yu, et al 2001), it will help to lessen market uncertainties. Organizations should communicate and exchange information with their suppliers in order to create a mutually beneficial relationship. As a result, information sharing makes the appropriate information available to the appropriate party at the appropriate time, place, and exchange, which will improve organizational operational performance.

Hypothesis 2: Effective knowledge sharing improves Organizational operational performance.

2.7.3 Supply Chain Management Practices and Organizational Operational

Performance

Although other studies use various methodologies, they all agree that SCM practices have an impact on performance. Numerous studies have been done on SCM practices, performance, and value growth. For instance, it showed that internal integration, information sharing, and delaying supply chain activities have a significant and favourable impact on the productivity and performance of the supply chain. Higher levels of SCM practices, according to Li et al. (2006), may also improve an organization's operational performance and give it a competitive advantage. It is true that supply chain activities and SCM performance are strongly correlated, but research has also shown that supply chain strategy is a much poorer predictor of SCM performance. According to other studies, the effectiveness of supply chains is influenced by the value that is created for customers, consumers' norms, knowledge of customer needs, retention of devoted customers, and alignment of organizational priorities with customers. Customers' value is frequently determined by the value of the product to them.

Hypothesis 3: Effective supply chain practices improve Organizational Operational performance.

2.8 Chapter Summary

The definitions, significance, and conclusions of the prior research on the ideas of knowledge sharing, supply chain management practices, and their effects on organizational performance make up the literature review for this study. This chapter covered the various theories that support the independent, moderating, and dependent variables. The chapter investigated the conceptualization of the independent, moderating, and dependent variables by examining the relationship between the variables. The research methodology is discussed in the following chapter

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The research design, population, data collection techniques, sample size and sampling techniques, data collection, data analysis, and the reliability and validity of the research tool are all covered in this chapter.

3.2 Research Design

Research design serves as a template for the gathering, measurement, and interpretation of data, according to (Kothari, 2014), who describes it as a structural conceptual arrangement. A research design is a comprehensive strategy of the techniques to be employed in order to gather and analyse the data required for decision-making.

Because this study seeks to offer conclusive information, descriptive design will be appropriate. Information will be gathered to gauge various viewpoints on the study's goals.

To establish a cause-and-effect link, a causal research design will be used. This will enable the researcher to examine how changes in one variable affect other variables under carefully controlled circumstances. Furthermore, a case study will be helpful because supply chain management practices are intricate and necessitate organizational context for a thorough understanding of the phenomenon and for interpreting the connection between the factors.

3.3 Population of the study

The target population, according to Mugenda and Mugenda (2003), is the total collection of unique cases or objects having a similar attribute, to which the research would apply its findings. Also, population is referred to as the bigger group from which a sample is drawn

(Orodho, 2003). The population for this study will be 60 since there was no such compendium registered collecting the details of supply chain officers working for GREL.

3.4 Sampling Technique

Purposive sampling will be used by the researcher in this study. Respondents will be chosen using purposive or judgmental sampling based on a reasonable assessment that they are the ones who will be most likely to provide the needed information. This is a non-probability sampling, meaning that respondents will be chosen because they are knowledgeable or because prior knowledge suggests they are a representative sample (Mugenda and Mugenda, 2013).

3.4.1 Sample Size

A sample is a more limited set of individuals chosen from the study's broader population with the intention of drawing conclusions about that population. For example, Kothari (2004) stated that findings can be generalized to the full population if the sample is adequately representative of the community. A total of 52 respondents who are supply chain practitioners at Ghana Rubber Estate Limited were used in the study.

Using the formula provided by Taro (1967), the sample size for this study is determined.

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

Where n = sample size

N = population size (60)

e = minimum margin error (5%)

$$n = \frac{60}{1+60(0.05)^2} \quad n = \frac{60}{1+60(0.0025)} \quad n = \frac{60}{1+0.15} \quad n = \frac{60}{1.15} = 52$$

Sample size of 52 is estimated as the results.

3.5 Data Collection Method

Data collection is the process of gathering facts from the research topic of choice, according to (Mugenda, 2003). For this study, primary and secondary data are also utilised. Using a questionnaire that covers the study's goals, primary data will be gathered.

Structured questions will be included in the survey. To focus respondents' responses on specific variables in which the researcher is interested, open-ended questions will be employed (Kothari, 2005). The questionnaire will be self-administered to ensure that each respondent receives one. Another benefit of administering questionnaires in-person is that the researcher can address any issues raised by respondents while they complete the survey. The choice of closed-ended questions was influenced by the need to ensure tool uniformity as well as the need to quantify respondents' responses for easy analysis.

Secondary data was acquired from reputable, established sources. The information is made up of resources that are desirable, current, correct, enough, and relevant that have been gathered from publications, the internet, and text books in the library. The operationalization Table 3.1 below provides a specific and clear definition of each variable, indicator and measurement instrument and the scoring or coding scheme that will be used in this research.

Table 3.1 Operationalization Table

Variable	Indicator(s)	Measurement Instrument	Scoring or coding scheme
Supply Chain Management Practices	Customer relationship management	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Supply Chain Management Practices	Strategic Supplier Partnership	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree

			4- Agree 5- Strongly Agree
Supply Chain Management Practices	Information sharing	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Supply Chain Management Practices	Lean practices	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Supply Chain Management Practices	Outsourcing	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Supply Chain Management Practices	Logistics	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Supply Chain Management Practices	Responsiveness	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Operational Performance	Delivery dependability	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree

Operational Performance	Quality Improvement	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Operational Performance	Cost/price	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Operational Performance	customer satisfaction	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Knowledge Sharing	Visibility	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Knowledge Sharing	Responsiveness	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree
Knowledge Sharing	Supply chain disruptions	Five – point Likert scale questionnaire	1 -Strongly Disagree 2- Disagree 3- Somewhat Agree 4- Agree 5- Strongly Agree

3.6 Data Analysis

Data analysis, according to (Sharma, 2005), is the process of collecting, modelling, and modifying data in order to make conclusions, emphasize pertinent details, and improve decision-making. It entails analysing data gathered from an experiment or survey in order to draw conclusions.

Data analysis tries to report information gathered from research participants. To choose the most accurate and high-quality information from the feedback provided by the many respondents, findings were presented, examined, and debated in relation to the study's goals.

Data from this study are anticipated to be both quantitative and qualitative. The questionnaires will be coded and revised for consistency and completeness after being received. Descriptive statistics and inferential analysis will be utilized to analyse the data using the statistical package for social science (SPSS) and Microsoft Excel. This method provides straightforward summaries of the sample data and manageable numerical descriptions (Orodho, 2003).

Descriptive statistics, together with simple graphic analysis, serve as the foundation for almost all quantitative data analyses (Kothari, 2005). Correlation, Simple Linear Regression and Chi-Square was used to establish a connection between the independent and dependent variables. To make the data easier to grasp, frequency distribution tables, will be used to illustrate the data.

3.7 Validity and Reliability

According to Kothari (2004), a test is deemed to be valid when it captures the information it was designed to capture. To confirm the raw data that was gathered, studies will be carried out. Specialized personnel in the field will be used. It will be simpler to make the necessary revisions and modifications as a result, increasing credibility. When something is dependable,

it means the results are predictable. It is considered reliable for a test to consistently produce the same result (Cooper and Schindler, 2003).

3.8 History of Ghana Rubber Estates Limited

GREL is an agribusiness with majority of its shares owned by the private individuals. It started as a small private plantation established by R. T. Briscoe in 1957 at Dixcove in the western region with a plantation size of about 923 hectares. The plantation was nationalized in 1960, becoming the Agricultural Development Corporation (ADC), and then the State Farms Corporation in 1962. The rubber plantation was taken over by the Ghanaian government in 1967 through the creation of a joint venture company with Firestone Tyre Company. Ghana Rubber Estates Limited (GREL) was this joint venture's name. The plantation had grown to 39,390 hectares by that point. The majority of the plantation was abandoned after Firestone decided against continuing with the project in 1981. 4,000 hectares of rubber were planted during the GREL rehabilitation between 1988 and 1996. In 1997, GREL was made private. Michelin, which purchases nearly all of the company's rubber production for its tire manufacturing operations, provides technical assistance to the business. The primary manager of the village plantations funded by the AFD (French Development Agency) since 1995 is GREL. 13,093 hectares of land are currently covered in rubber plantations for the business. 9,555 hectares total are being tapped. It was ranked as the top agriculture company overall and the sixth best company in the 2009 Ghana Club 100 rankings.

3.8.1 Vision

Economic empowerment through rubber cultivation for sustainable rural community development to alleviate poverty.

3.8.2 Mission Statement

- To deliver quality extension services to rubber out growers through advance and innovative technology by our motivated staff.
- To enable out growers have sustainable income, enjoy a better living and to contribute to national development.
- To collaborate with all stakeholders to effectively and efficiently utilize public funds to improve the living standards of the rural communities.

3.9 Ethical Consideration

Ethical Considerations plays a pivotal role in conducting research and cannot be left out in any way. If this component is absent, dissertations might even be doomed to failure (Bryman & Bell 2007). Based on Bryman & Bell 2007, the researcher intends to put in place the following ethical guidelines during the period of the research

- The respondent will always be treated with respect for their dignity and wellbeing
- The research data will be kept private throughout the study, and if necessary, the respondent will give permission for the researcher to use their real names in the research report if need be.
- Respondents will take part with their informed consent.
- When creating the questionnaire, offensive, discriminatory, or unacceptable language will be avoided
- The respondents' right to privacy and anonymity is crucial
- Only academic purposes may be pursued with the data collected
- It is crucial that respondents participate voluntarily in the study. In addition, if they so choose, participants have the choice to leave the research at any time.

3.10 Chapter Summary

In this chapter, the methodology used in this descriptive study is presented in detail. The study takes a positivist approach, which requires using quantitative research techniques. This chapter has covered the justification for this strategy in great detail.



CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

In an effort to better understand the relationship between supply chain management strategies and organizational operational effectiveness, this study, we focus on GREL and use knowledge sharing as a mediating element. The descriptive findings from the data gathered on the GREL respondents are presented in this chapter. On the basis of the research's respondents and goals, the findings are discussed. In order to analyse the information gathered in light of the study's predetermined objectives, data analysis tools like SPSS and Excel were used. The results and recommendations from the data analysis were assessed taking into account those from related earlier studies.

4.2 Biographic Information

The respondents' general biographical information concentrated on their gender, age, educational background, and number of years of employment. The biographical data of all respondents is summarized in Table 4.1 below.

Table 4.1; Biographic Information

Biographic Information		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	36	69.2	69.2	69.2
	Female	16	30.8	30.8	100.0
Age	Below 20 years	7	13.5	13.5	13.5
	21 - 30 years	14	26.9	26.9	40.4

	31 - 40 years	24	46.2	46.2	86.5
	41 - 50 years	7	13.5	13.5	100.0
Level of Education	PHD	1	1.9	1.9	1.9
	Master's Degree	26	50.0	50.0	51.9
	First Degree	11	21.2	21.2	73.1
	HND	14	26.9	26.9	100.0
Level of Experience	1 year and below	7	13.5	13.5	13.5
	2 - 5 years	23	44.2	44.2	57.7
	6 - 9 years	10	19.2	19.2	76.9
	10 years and more	12	23.1	23.1	100.0
Number of Employees	11 and above	52	100.0	100.0	100.0
	TOTAL	52	100.0	100.0	

Source: Field Survey, 2022

From table 4.1, the data indicates that, most of the respondents were males compared to the females, furthermore all the respondents were of the legal age requirement by law to work (18yrs). Furthermore, 73.1% of the respondents had minimum of First-degree educational qualification. 13.5% of the respondents had a level of experience of 1yr and below

4.3. Validity and Reliability

4.3.1 Assessing Reliability

The internal consistency of the research tool according to Bryman and Bell (2007), is what determines reliability. The degree to which a scale produces consistent results after repeated

measurements is referred to as its reliability (Kent et al., 2007). As all construct components were utilised, the internal consistency of SCMP and organizational operational performance were assessed using Cronbach's Alpha. It should be 0.7 or higher for the individual consistency reliability. According to Table 4.2 below, the variables' Cronbach's alpha values ranged from 0.729 to 0.807. This suggests that every construct and scale used to measure the study's variables were accurate and regarded as acceptable (Nunnally, 1978).

Table 4.2: Reliability Analysis

Constructs	Frequency	Mean	Std.Dev	Cronbach's Alpha
Regular Training and Knowledge Sharing	52	4.12	0.922	.729
Discovery and removal of barriers to success	52	4.48	0.505	.755
Streamlining communications with your customers	52	4.42	0.499	.768
Workplace culture	52	4.63	0.768	.764
Access to information	52	4.29	0.457	.771
Setting a high standard	52	4.27	0.819	.758
Better order fulfilment	52	4.15	0.364	.777
Employees involved in improving production/operation efficiency	52	4.31	0.755	.742
Top management committed to ensure quality operational performance	52	4.31	0.755	.766

Customer Relationship Management	52	4.13	0.627	.758
Strategic Supplier Partnership	52	4.15	0.697	.765
Information Sharing	52	3.88	0.855	.759
Lean Practices	52	4.27	0.564	.777
Outsourcing	52	3.85	0.607	.786
Logistics	52	4.38	0.491	.807
Responsiveness	52	4.21	0.412	.782
Operational Performance	52	4.17	0.513	.775

Source: Field Survey, 2022

4.3.2 Validity Analysis

The validity of a research basically has to do with how accurately a method or procedure measures what it is intended to measure. If research has a high validity, then it simply means the research corresponds to real properties or characteristics in the global world. Content validity, predictive validity, and construct validity were among the three types of validity that were mentioned in Malhotra's (2010) study. Through the review of pertinent literature and the adoption of a tool from earlier studies, this study addressed content validity.

4.4 Knowledge-sharing, SCM techniques, and operational performance inferential statistics

4.4.1 Correlation Analysis

A statistical tool called correlation is used to assess whether there is a relationship between two quantitative variables or datasets as well as how strong that relationship might be (Emily, 2021).. In other words, it is carried out to find out relationships between variables, thus as to whether the variables are related or not. Between -1 and 1, a correlation coefficient's value falls.

Closer values to 0 indicate a weak linear relationship, while those closer to 1 indicate a strong linear relationship. Values equal to zero indicates a no linear relationship. Complete correlation between two variables is expressed by either + 1 or -1. When one variable increases as the other increases the correlation is positive and vice versa; when one variable decreases as the other increases it is said to have a negative correlation. Complete absence of correlation is represented by 0. To this research “Pearson’s r” was used to describe the linear relationships between the quantitative variables. This section includes a correlation analysis that was carried out considering each research objective and set of produced hypotheses. Correlation analysis was used to look into how supply chain management methods, organizational performance, and knowledge sharing are related. Indicating the strength and direction of the relationship, this produced correlation coefficients. The p-value, or "significant value," further demonstrated the likelihood that this link would be significant.

4.4.1.1 Correlation Analysis of Knowledge Sharing Construct and Operational Performance

Table 4.3 Correlation Matrix of Knowledge Sharing and Operational Performance

		KS	OP
KS	Pearson Correlation	1	0.059
	Sig. (2-tailed)		0.676
	N	52	52
OP	Pearson Correlation	0.059	1
	Sig. (2-tailed)	0.676	
	N	52	52

Source, Field Survey, 2022

Table 4.3 shows a summary of the relationship between the constructs of knowledge sharing as a whole and the relation it has on the operational performance. The correlation coefficient

in table 4.3 makes it abundantly clear that there is a connection between knowledge sharing and operational performance. The two variables have an $r=0.059$ Pearson correlation coefficient with a 0.67 significance level. Although the relationship is tenuous and statistically insignificant, this coefficient suggests that knowledge sharing and organizational operational performance are positively correlated. As was previously discussed in chapter 2, the study supports research conducted by Francis et al. in 2022 on Knowledge Sharing (KS) Strategy and Operational Performance in University of Uyo Teaching Hospital, Nigeria, which revealed that knowledge sharing has a relation of which is positive on the operational performance of a tertiary hospital.

4.4.1.2 Correlation Analysis between knowledge sharing constructs and SCM Practices

Table 4.4 Correlation of Knowledge Sharing and SCM Practices

		KS	SCMP
KS	Pearson Correlation	1	0.119
	Sig. (2-tailed)		0.400
	N	52	52
SCMP	Pearson Correlation	0.119	1
	Sig. (2-tailed)	0.400	
	N	52	52

Source, Field Survey, 2022

Table 4.4 as shows a summary of analysis of results from the correlation between KS and SCMP. If we recall in chapter 2 in the contextual framework, it was interesting to see if there exist any relation or effect between knowledge sharing and SCM Practices. As shown in table 4.4, There is such a relationship, but it has a weak, positive Pearson correlation coefficient ($r=0.119$) and a statistically insignificant significance value (0.400) that indicates that it is not

significant. This supports a study by Lalonde (1998) that identified knowledge sharing as one of the key traits of strong supply chain relationships.

4.5 Standard Framework for Ensuring Organizational Operational Performance

Answers to the question of what kind of uniform framework GREL uses to guide its organizational operational performance are sought in this section. Below is a display of the survey's findings from the field.

4.5.1 Standard Framework- Regular Training and Knowledge Sharing

Following is a breakdown of the responses regarding how much GREL uses regular training and knowledge sharing as a standard framework.; Twenty-two (22) representing 42.3% strongly agree that GREL employs the usage of Regular Training and Knowledge Sharing as a Standard Framework, whereas seventeen (17) respondents agree, ten (10) representing 19.2% somewhat agree. Three (3) representing 5.8% disagree that GREL employs the usage of Regular Training and Knowledge Sharing as a standard framework, most of the respondents agree that GREL employs Regular training and knowledge sharing as a standard framework for its operations. **Source, Field Survey, 2022**

4.5.2 Standard Framework - Discovery and Removal of Barriers to Success

The distribution of responses on the level of extent to which GREL as part of its operations discover and remove barriers to success are as follows; Twenty-seven (27) representing 51.9% agreed that GREL Discovers and remove barriers to success. Whereas twenty-five (25) respondents strongly agreed, it can be construed that, all the respondents were in support that GREL discovers and remove barriers to success. The study confirms Mark (2022)'s assertion that discovery and removal of barriers to success is a standard framework to ensure organizational performance. **Source, Field Survey, 2022**

4.5.3 Standard Framework -Streamlining Communication with Customers

A summary analysis of responses from respondents indicates that, thirty respondents (30) representing 57.7% agree that GREL streamlines communication with its customers. Whereas twenty-two (22) respondents strongly agreed, no respondent disagreed to the claim, and so we can confidently say that they are all in supporting the claim. **Source, Field Survey, 2022**

4.5.4 Standard Framework- Workplace Culture

The summary of responses from respondents on the level of extent to which GREL employs Workplace Culture as Standard Framework is as follows; Thirty-nine (39) representing 75.0% strongly agree that workplace Culture is a Standard Framework used at GREL, ten (10) respondents agree representing 19.2% of the total respondents. Three (3) representing 5.8% disagree that Workplace Culture is a standard framework employed by GREL, from analysis most of the respondents strongly agree that GREL employs Workplace culture as a standard framework for its operations. **Source, Field Survey, 2022**

4.5.5 Standard Framework-Access to Information

The distribution of responses on the level of extent to which GREL as part of its operations provides Access to Information is given as; Thirty-Seven (37) representing 71.2% agreed that GREL employ the usage of Information Access as a standard framework. Whereas fifteen (15) respondents strongly agreed, no respondent disagreed to the claim, and so we can confidently say that they are all in support. **Source, Field Survey, 2022**

4.5.6 Standard Framework- Setting High Standards

Regarding to setting high standards as a standard framework, Twenty-three (23) representing 44.2% strongly agree and twenty-three (23) representing 44.2% also agreed respectively that GREL employs the usage of Setting High Standards as a Standard Framework, three (3)

representing 5.8% somewhat agree. Three (3) representing 5.8% disagree that GREL employs the usage of setting high standards as a standard framework, clearly, the majority of the respondents are in agreement that GREL employs setting higher standards as a standard framework. **Source, Field Survey, 2022**

4.5.7 Standard Framework- Better Order Fulfilment

With Better Order Fulfilment as a standard framework, Forty-four (44) respondents, representing 84.6% agreed that GREL employ the usage of Better Order Fulfilment as a standard framework. Whereas eight (8) respondents strongly agreed, no respondent disagreed to the claim, and so we can confidently say that they are all in support. **Source, Field Survey, 2022**

4.5.8 Standard Framework-Employees Are Involved in Improving Production

From analysis, twenty respondents (25) representing 48.1% strongly agree and eighteen (18) representing 34.6% also agreed respectively that employees are involved in improving production, out of the respondents (9) representing 17.3% somewhat agree. The majority of respondents concur that GREL has adopted a standard framework and that employees are involved in enhancing production. Muhammad et al. can accept this finding. (2010), showing a beneficial connection between workers' involvement and performance. Therefore, it is reasonable to assume that employers are actively working to increase production and operational efficiency.

4.5.9 Standard Framework-Top Management Committed to Ensuring Quality

Operational Performance

A summary of responses from respondents shows that twenty-seven (27) respondents, representing 51.9% agree, whereas twenty-two (22) representing 42.3% strongly agree to the fact that top management are committed to ensure quality operational performance, However,

three (3) representing 5.8% disagree. Based on these, it is obvious that management is deeply committed to ensuring excellent operational performance. Comparatively speaking, this result supports Li, Chan, and Chan's (2004) claim that top management support ensures high levels of operational performance in a firm. Management has pledged to address problems, devise plans, and keep an eye on supply chain practices that will enhance organizational operational performance. Additionally, management has made a commitment to continuously review the norms that guide the organization's performance success as well as the standards necessary to guide operational performance. Pertaining to top management commitment to ensuring quality organizational performance, the findings also confirm Caleb (2021) assertion that many standards, such as ISO/IEC 17025, require management commitment to impartiality, continual improvement, and development and implementation of the management system.

4.6 Supply Chain Management Practices at GREL

Based on the questionnaire responses, this section aims to respond to the second research question: "What are the supply chain practices at GREL?"

4.6.1 Customer Relationship Management

From analysis of data, seven (7) of the respondents representing 13.5% somewhat agree that Customer relation management is a SCMP GREL adopts. However, thirty-one (31) respondents, representing 59.6% agrees. Fourteen (14) respondents, representing 26.9% strongly agree to this position that, customer relation management is a SCMP used at GREL in aid of the smooth and seamless operation of their business. From review of literature, according to Bearnon (2014), better customer relationships can enhance demand analytics, which will help with resource and material planning as well as the effectiveness of operations. Additionally, their overall SCM efforts will be successful as a result.

4.6.2 Strategic Supplier Partnership

A summary of responses indicates that, nine (9) of the respondents representing 17.3% somewhat agree that GREL adopts Strategic Supplier Partnership as SCMP. However, twenty-six (26) respondents, representing 50.0% and Seventeen (17) respondents, representing 32.7% also strongly agree to this position. Majority of the respondents believe that Strategic Supplier Partnership is a SCMP employed at GREL According to the reviewed literature, strategic alliances with some important suppliers can help organizations work more effectively with those suppliers because they are willing to share responsibility for the success of the products. Early supplier involvement can lead to more affordable design options, help in selecting the best materials and technologies, and help with design evaluation (Tan et al., 2002)..

4.6.3 Information Sharing

A summary of the responses from respondents indicates that, out of the 52 respondents, three (3) of the respondents representing 5.8% strongly disagreed that information sharing was a SCMPs adopted by GREL. However, four (4) respondents, representing 7.7%, were neutral. More so, thirty-eight (38), representing 73.1% agree to the assertion while Seven (7) respondents representing 13.5% also strongly agree to this position, Clearly, most of the respondents believe that information sharing is a SCMP employed at GREL to enhance their seamless flow of operation. From review of literature in previous chapter and studies, (Chen & Paulraj, 2010) also confirmed that firms sharing data on their operational activities may entail numerous channel participants providing helpful data on the volume of raw material, supply requirements etc.

4.6.4 Lean Practices

The responses from respondents on the extent to which Lean Practices is a SCMP adopted in GREL is given as; out of the 52 respondents, three (3) of the respondents, representing 5.8%

somewhat agreed. However, thirty-two (32) respondents representing 61.5%, were in agreement. More so, seventeen (17), representing 32.7% of the respondents strongly agree to the assertion. Majority of the respondents, believe that lean practices are SCMP employed at GREL to enhance their seamless flow of operation. From literature in previous chapter, Lathin (2001) asserts that modern need-driven supply chains necessitate lean techniques with the following objectives: prevent shortages, reduce inventory investment, remove waste across the entire supply chain process, cut down on lead times and costs associated with supply chain, boost inventory turnover, and guarantee customer satisfaction. Therefore, these techniques guarantee increased effectiveness and procedure standardization.

4.6.5 OUTSOURCING

A summary of the responses from respondents indicates that, fourteen (14) of the respondents representing 26.9% somewhat agree to Outsourcing as a SCMP GREL adopts. However, thirty-two (32) respondents representing 61.5%, which is the majority, agrees to the position. Six (6) respondents representing 11.5% strongly agree to this position that, outsourcing is a SCMP used at GREL to enable GREL focus on its core competence to aid in the smooth operation of their business. This clearly demonstrates that majority of the respondents affirm that Outsourcing is a SCMP employed at GREL. According to the literature, Supalak (2010) lists the benefits of outsourcing in his study, which include cost savings, better understanding of new systems and procedures implemented by outsourcing companies, improved expertise, increased productivity, a positive corporate image, and more management focus on employee welfare. However, outsourcing may only be advantageous if the appropriate organizational tasks are delegated to outside parties.

4.6.6 Logistics

Logistics is simply defined as the movement of goods and services from point of origin to point the end user. this section seeks to find out from respondents whether GREL employs Logistics as part of its SCMPs. Out of the respondents, thirty-two (32) of the respondents representing 61.5% agree and the remaining twenty (20) representing 38.5% also strongly agree it., all the respondents (52) affirmed to the fact the firm employs logistics as a SCMPs in its operations. According to Wisner (2003), there is evidence from the review of the literature that logistics strategy and organizational success are strongly correlated which makes it very prudent for organizations to put in good structures to be able to reduce their logistics cost. (Alphonse, 2013) stressed the significance of businesses adopting and putting money into a strong logistics system that works well with the other supply chain processes. To provide value to the customer or consumer, it therefore affects all business processes (Alphonse, 2013).

4.6.7 Responsiveness

Regarding responsiveness, forty-one (41) of the respondents, representing 78.8% agree and the remaining eleven (11) representing 21.2% also strongly agree that GREL employs Responsiveness as part of its SCMP's. All the respondents (52) affirmed to the fact the GREL employs responsiveness as a SCMPs in its operations. According to Hausman, (2004), the system's ability to use the existing resources as efficiently as feasible is far more crucial. To ensure smooth mouse interactions, for example, it seems sensible to let the mouse driver run at a very high priority. The most crucial aspect of long-term operations, like copying, downloading, or altering large files, is to offer meaningful user feedback rather than the operation's performance because it may effortlessly run in the background utilizing just available processing time

4.7 Main objective of Ghana Rubber Estate Limited's Supply Chain Practices

This section seeks out from respondents the main objective of the supply chain practices by GREL in their operation.

Twenty-eight (28) respondents representing 53.8% of the total respondents indicated that, satisfying customer service-level requirement is the main objective of GREL supply chain management practices while Twenty-Four (24) respondents representing 46.2% of the total respondents indicated Cost Reduction as GREL's main supply chain management practice's objective. The study further confirms the findings of Jonas (2022) that, one of the key objectives of global supply chain management is to create happy and satisfied customers by seamlessly incorporating all involved processes

4.8 Effects of GREL Supply Chain Management Practices on Operational Performance.

GREL's SCMPs impact on operational performance is revealed in this section based on survey results from respondents.

4.8.1 Effects of GREL SCMPs on the aforementioned Operational Performance Metrics

This section highlights the effects of SCM methods on operational performance metrics, taking into account factors like delivery dependability, increased product quality, price/operating costs, improvement in customer satisfaction, reduced risk of recalls, and competitive advantage.

Table 4.5 Summary analysis on respondent's level of agreement on the effects of GREL SCMP's on its Operational performance

	Strongly disagree N (%)	Disagree N (%)	Somewhat Agree N (%)	Agree N (%)	Strongly Agree N (%)	Mean	Mean Ranking
Delivery Dependability	0 (0.0)	0 (0.0)	3 (5.8)	33 (63.5)	16 (30.8)	4.25	03
Price/Cost of Operation	0 (0.0)	0 (0.0)	0 (0.0)	31 (59.6)	21 (40.4)	4.40	02
Improvement of customer satisfaction	0 (0.0)	0 (0.0)	0 (0.0)	43 (82.7)	9 (17.3)	4.17	04
Improve product quality	0 (0.0)	0 (0.0)	12 (23.1)	33 (63.5)	7 (13.5)	3.90	08
Balance supply of product and market demand	0 (0.0)	0 (0.0)	9 (17.3)	32 (61.5)	11 (21.2)	4.04	07
Competitive advantage	0 (0.0)	0 (0.0)	3 (5.8)	40 (76.9)	9 (17.3)	4.12	05
Reducing risk of recalls	0 (0.0)	0 (0.0)	0 (0.0)	29 (55.8)	23 (44.2)	4.44	01
Building strong customer brand	1 (1.9)	0 (0.0)	3 (5.8)	37 (71.2)	11 (21.2)	4.12	05

Source, Field Survey, 2022

Results on how much the following operational performance indicators are impacted by GREL's supply chain management are shown in Table 4.5.

Delivery dependability: Sixteen (16) respondents representing 30.8% agree that GREL's supply chain management practices influences delivery dependability. Thirty-three (33) on the other hand, representing 63.5% of the majority agree to it. Hitherto, three (3) respondents representing 5.8% somewhat agree that GREL's supply chain management affects delivery dependability. Hence, it can be inferred that GREL's supply chain management influences its delivery's dependability. Delivery dependability is another element of competitive advantage, according to Li et al. (2006), which over time aids in enhancing organizational operational efficiency. This illustrates that delivery dependability and organizational operational success are related.

Price/Operation Cost; As well, thirty-one (31) of the respondents, with majority representing 59.6% agrees that GREL's supply chain management practices effect on Price/Cost of operation. However, twenty-one (21) respondents, representing 40.4% strongly agrees. It can then be emphasized that GREL's supply chain management practices influences their Price/Cost of operation

Improvement of Customer Satisfaction; it was discovered that forty-three (43) representing 82.7% of respondents (Majority) agree that GREL SCMP's influences improvement on customer satisfaction. Nine (9) in lieu of 17.3% strongly agree that GREL's supply chain management practices influences improvement of satisfying customer. In GREL's supply chain management practice, it would seem that cutting down on response times throughout the supply chain is important. Clearly from the respondent, GREL's supply chain management influences customer satisfaction improvement.

Improve Product Quality; twelve (12) representing 23.1% of the respondents somewhat agree, whereas the majority, thirty-three (33) representing 63.5% of the respondents agreed that GREL SCMP's influences improving product quality. Furthermore, seven (7) representing 13.5% strongly agree to it. It can then be emphasized that GREL's supply chain management practices influences the improvement of product quality.

Balance supply of product and market demand; it was also discovered from the result that, nine (9) representing 17.3% of the respondent somewhat agree to the statement. Furthermore, the majority of respondent (32), representing 61.5% of the respondents agreed that the SCMP's of GREL affects balance supply of product and market demand. The remaining eleven respondents (11) representing 21.2% also strongly agree to it. This indicates that majority of respondents affirm that GREL's Supply Chain Management practices influences the balance of supply of products and market demand.

Competitive advantage; three (3) representing 5.8% of the respondents somewhat agree, whereas the majority, forty (40) representing 76.9% of the respondents agreed that GREL SCMP's influences gaining competitive advantage. Furthermore, nine (9) representing 17.3% strongly agree to it. It can then be emphasized that GREL's supply chain management practices influences the competitive advantage based on the responses given.

Reducing Risk of Recalls; Majority, twenty-nine (29) representing 55.8% of the respondents agreed that GREL SCMP's influences reducing risk of recalls. Moreover, twenty-three (23) representing 44.2% strongly agree to it. Clearly, it can then be emphasized that GREL's supply chain management practices has an effect on reducing risk of recalls

Building strong customer brand; the table 4.6 showed that one (1) respondent, or 1.9% of the sample, strongly disagreed with the statement. Furthermore, three (3) of respondent, representing 5.8% of the respondents somewhat agreed. Majority of the respondents (37)

representing 71.2% agree to the statement. The remaining eleven respondents (11) representing 21.2% also strongly agree to it. This indicates that majority of respondents affirm that GREL's Supply Chain Management practices influences reducing risk of recalls in their operations.

However, the average ranking results show that when it comes to how much GREL's supply chain management affects the subsequent operational performance indicators, respondents rated the effect on lowering the risk of recalls as having the greatest importance, followed by price/operational costs, delivery dependability, an increase in customer satisfaction, competitive advantage, creating a strong customer brand, balancing the supply of a product with market demand, and the least is improve product quality

In conclusion, the above table clearly shows that the majority of respondents agree with the aforementioned constructs. Accordingly, we can categorically state that the GREL's SCMP has an impact on the operational indicators as displayed above.

4.8.2 The Overall Effects of SCM Practices on Operational Performance.

The overall effect of GREL's SCM Practices on operational performance in terms of delivery dependability, product quality improvement, price/cost, improvement of customer satisfaction, reducing risk of recalls, competitive advantage building strong consumer brand etc. are discussed here:

To examine whether there is a correlation between two categorical variables, such as operational performance and the constructs of supply chain management strategies, the chi-square test for independence, also known as Pearson's chi-square test or the chi-square test of association, was used. At this point, the chi square was used to examine the statistical significance of the constructs used in this study to measure operational performance and supply chain management practices. The Phi and Cramer's V test was employed in place of the chi

square test because the former does not indicate the magnitude of the relationship between supply chain management strategies and operational performance.

4.8.2.1 Operational Performance and Customer Relation Management

Table 4.6 Customer Relation and Operational Performance

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	32.795 ^a	4	.000
Likelihood Ratio	32.528	4	.000
Linear-by-Linear Association	.925	1	.336
Phi	.794		0.000
Cramer's V	.562		0.000
N value	52		

Source, Field Survey, 2022

At the 5% level of significance, the association between supply chain techniques, namely customer relationship management, and GREL operational performance is supported and statistically significant with a chi square value of 0.000. However, the above-mentioned Phi and Cramer's V test examines the relationship's strength in further detail. A statistical analysis of the Phi and Cramer's V values in table 4.6 reveals a significant connection. This indicates that the chi square test supports a relatively strong association between the general impact of supply chain practices, specifically customer relationship management, and operational performance. This outcome is comparable to (Mustefa, 2014) because there is a significant positive relationship between customer relations (CR) and operational performance.

4.8.2.2 Strategic Supplier Partnership and Operational Performance

Table 4.7 Strategic Supplier Relation and Operational Performance

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.081 ^a	4	.000
Likelihood Ratio	27.054	4	.000
Linear-by-Linear Association	.294	1	.588
Phi	.637		.000
Cramer's V	.450		.000
N value	52		

Source, Field Survey, 2022

Table 4.7 above's chi square test indicates that, at the 5% level of significance, the association between operational performance and strategic supplier relationships is reasonable and statistically significant with a chi square value of 0.000. The Phi and Cramer's V test will henceforth be more utilized to analyse the relationship's strength. According to statistical interpretation, there is a moderate association according to table 4.7's values of Phi and Cramer's V. This shows that there is a generally strong positive correlation between supply chain practices and GREL Operational performance, especially Strategic Supplier Relationship, as shown by the chi square test. This judgment echoes Dorothy et al 2022's conclusion. on his study of operational performance of food and beverage manufacturing companies in Nakuru County, Kenya and strategic supplier partnerships, which came to the conclusion that the two variables are strongly correlated and statistically significant.

4.8.2.3 Information Sharing and Operational Performance

Table 4.8 Information sharing and operational performance

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	56.882 ^a	6	.000
Likelihood Ratio	30.094	6	.000
Linear-by-Linear Association	10.248	1	.001
Phi	1.046		.000
Cramer's V	.740		.000
N value	52		

Source, Field Survey, 2022

The chi square results, with a chi square value of 0.000 at the 5% level of significance, demonstrate an irrefutable and statistically significant association between supply chain activities, specifically information sharing, and GREL operational effectiveness. So, the Phi and Cramer's V tests are used to further evaluate the relationship's strength.

The test results from Table 4.8, the values of Phi, and Cramer's V are significantly correlated, as demonstrated by statistical justification. The chi square test of the variables is justified because this shows a substantial association. This supports study done in 2022 by Johannese et al. on the mediating effect of information sharing on pharmaceutical supply chain integration and operational performance in Ethiopia, which found that information sharing had a significant and favourable impact on operational performance.

4.8.2.4 Lean Practices and Operational Performance

Table 4.9 Lean Practices and Operational Performance

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.664 ^a	4	.005
Likelihood Ratio	19.308	4	.001
Linear-by-Linear Association	6.875	1	.009
Phi	.531		.005
Cramer's V	.375		.005
N value	52		

Source, Field Survey, 2022

According to the results of the chi square test in the aforementioned table 4.9, At the 5% level of significance, the association between lean practices and operational performance is valid and statistically significant, with a chi square value of 0.000. The Phi and Cramer's V test will henceforth be more used to analyse the relationship's strength. According to a statistical interpretation of table 4.9's Phi and Cramer's V values, there is a significant statistical association. This indicates that the chi square test's finding of a relatively strong association between supply chain practices and GREL Operational performance, specifically Lean Practices, is supported This finding is consistent with research conducted by Gusman et al. in 2012 on the impact of lean practices on operational performance and business performance, which came to the conclusion that lean practices have a significant and positive impact on both operational performance and business performance.

4.8.2.5 Outsourcing and Operational Performance

Table 4.10 Outsourcing and Operational Performance

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.063 ^a	4	.000
Likelihood Ratio	16.433	4	.002
Linear-by-Linear Association	6.374	1	.012
Phi	.694		.000
Cramer's V	.491		.000
N value	52		

Source, Field Survey, 2022

The association between outsourcing and operational performance is reasonable and statistically significant at the 5% level of significance, according to the chi square test in table 4.10 above, with a chi square value of 0.000. The relationship's strength will now be more fully examined using the Phi and Cramer's V test. Values of Phi and Cramer's V from table 4.10 show that there is a strong statistical association. This indicates that the general impact of supply chain practices, specifically outsourcing, as supported by the chi square test, has a relatively strong association with GREL Operational performance. This result supports a study by Edward, 2015, which found that outsourcing is a crucial component of organizational strategy and serves as a potent tool for cost-cutting and performance improvement, and as a result, has a favourable positive relationship with operational performance.

4.8.2.6 Logistics and Operational Performance

Table 4.11 Logistics and Operational Performance

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.106 ^a	2	.078
Likelihood Ratio	6.044	2	.049
Linear-by-Linear Association	1.868	1	.172
Phi	.313		.078
Cramer's V	.313		.078
N value	52		

Source, Field Survey, 2022

The chi square results show a reasonable but statistically insignificant association between supply chain methods, specifically logistics, and GREL operational performance at the 5% level of significance with the chi square value of 0.078. The strength of the association is therefore further investigated using the Phi and Cramer's V test.

Table 4.11 test results, Phi values, and Cramer's V values show a moderate association by statistical elucidation, but this association is statistically insignificant. The findings differ from those of Sharon, 2017, who conducted research on the operational performance of fast-moving consumer goods manufacturers in Nairobi. She came to the conclusion that the operational performance and logistics management practices are positively correlated and statistically significant.

4.8.2.7 Responsiveness and Operational Performance

Table 4.12; Responsiveness and Operational Performance

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.656 ^a	2	.059
Likelihood Ratio	8.630	2	.013
Linear-by-Linear Association	1.586	1	.208
Phi	.330		.059
Cramer's V	.330		.059
N value	52		

Source, field Survey, 2022

The chi square results show a plausible association between supply chain practices, notably responsiveness, and GREL operational performance, but the chi square value of 0.059 is statistically inconsequential at the 5% threshold of significance. The Phi and Cramer's V test is consequently used to further analyse the association's strength. According to statistical elucidation, there is a moderate association by table 4.12 test results, Phi values, and Cramer's V values, but this association is statistically insignificant. The result agrees with the findings of Jitendra and Rajesh, 2022 that supply chain responsiveness positively impacts operational performance.

4.9 Regression between SCMPs and Operational Performance

At this point, the researcher thought it would be interesting to run a linear regression model to determine how SCMP would affect organizational operational performance.

Table 4.13 Summary of regression model of SCMP's and Operational performance

Model	β	Adjusted R Square	Std. Error	t-stats	p-value
1	.971 ^a	.934	.132	104.005	.000 ^b

Predictor; supply chain management practices, Dependent; Operational performance

Source, field survey, 2022

SCM practices and Organizational performance are causally related, as illustrated in table 4.13. There are many potential explanations for this variable, but our model, which uses SCM approaches, can explain 93.1 percent of it. Consequently, it follows that those SCM technique dimensions are unable to account for the remaining 6.6% of the variation in organizational operational performance. Additionally, the significant and positive coefficient suggests that SCM methods have a beneficial impact on operational Performance. These findings confirm Huang and Liu's (2014) observation that supply chain management techniques enhance the operational efficiency of Beijing-based manufacturing companies.

4.10 Mediating effect of Knowledge Sharing link between Supply Chain Management Practices and Operational Performance

4.10.1 Test for Knowledge Sharing's Mediating Effect

The researcher used the mediation test procedure outlined by Baron and Kenny (1986) to test the potential mediating effect of knowledge sharing as part of the research objectives. If (i) the explanatory variable (SCMPs) predicts the response variable (OP), (ii) the proposed mediator (knowledge Sharing), which is predicted by the explanatory variable (SCMPs), and (iii) the direct effect of the predictor (SCMPs) on the response variable (OP), is either no longer significant (for full mediation) or is weaker (for partial mediation), then there is a mediating effect. The results of the tests are presented in Table 4.14 below

Table 4.14 Summary analysis of result of test for mediating effect

Relationship	Mediating factor	Path coefficient	t-value	R squared	Significant
SCMP's → OP	NO	0.971	104.005	0.934	0.000
SCMP' → OP	Knowledge Sharing	SCMP's → 0.055 OP → 0.015	-0.517 0.018	0.006	0.862
OP → KS	-	0.022	0.180		0.858
KS → SCMP's	-	-0.124	-0.107		0.449

Source, field survey, 2022. (Adapted from Asamoah et.al 2016)

Table 4.27 shows the results of the mediation test; without the mediating element, the direct effect of SCMPs was favourable and significant at $p < 0.05$. The direct association between SCMPs and operational performance is seen as insignificant after taking into account the mediating factor, which has a positive route coefficient. Additionally, the straight effects of SCMP'S on knowledge Sharing ($\beta = -0.124$; $t = -0.107$) and knowledge sharing on Operational performance ($\beta = 0.022$; $t = 0.180$) are insignificant. In addition, the addition of the knowledge sharing construct causes the SCMP's r-square to fall from 0.934 to 0.006 in value. A significant full mediating effect of knowledge sharing on the link amid SCMPs and OP is disapproved by the behaviour of the knowledge Sharing construct, but the direct only (Non Mediation) effect of knowledge sharing on this relationship is confirmed (Baron and Kenny, 1986).

4.11 Chapter Summary

In this chapter, the research's results were discussed, and the responses were shown in tables. According to the study's goals, the researcher evaluated the information gathered from the respondents. The data were analysed using SPSS, which also uses reliability, reliability matrix, and linear regression. Using means and standard deviation, the chapter identified the supply chain practices. The effect of supply chain practices on operational performance at Ghana

Rubble Estate Limited was evaluated using linear regression (bi variate and multiple regression). Using a correlation matrix, bivariate analysis, multiple linear regression, and bootstrapping to test for significance, in the end, the chapter identified how knowledge sharing influences both supply chain management techniques and operational effectiveness. The summary of the research's findings, conclusions, and recommendations is provided in the following chapter.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

The most important research findings are presented in this chapter. Conclusions based on the theoretical implications of the findings are made, along with suggestions for GREL management and directions for future study.

5.1 SUMMARY OF KEY FINDINGS

The study set out to assess how SCM Approaches Impact GREL Operational Performance. The socio-economic makeup of the respondents to the study was taken into account thus, age, gender, educational level, work experience etc. Regarding the first objective, that has to do with the standard framework that GREL employs, The majority of the respondents agreed that GREL adopts regular training and knowledge sharing, discovery and removal of barrier's to success, streamlining communication, workplace culture, access to information, setting high standards, better order fulfillment, employees involved in production and lastly top management commitment to ensuring quality operational performance as a standard framework in running its daily activities to improve operational performance.

As per research question two, "What are the supply chain practices at Ghana Rubber Estates Limited?" Majority of respondents agreed that GREL uses supply chain management practices such as customer relationship management, strategic supplier partnerships, lean practices, information sharing, outsourcing, logistics, and responsiveness. The study found that meeting customer service standards is important for the supply chain management process, and that GREL's supply chain practices prioritize customer satisfaction before cost reduction.

In response to research question three, "What are the effects of GREL supply chain management practices on its operational performance?" The results of the study revealed that supply chain management procedures often have a favourable effect and are now necessary to direct operational performance. Using the chi square test, Phi and Cramer's V test, the relationship validity and strength between SCM practice and performance indicators were evaluated. The impact of supply chain management practices on the operational efficiency of GREL was discovered to be related.

Using a linear regression model, the effectiveness of the association between supply chain management methods and operational Performance was further investigated. The test result indicates a positive, strong correlation ($r=0.971$) amid SCM practices and operational performance with significance level less than 0.001. In other way, SCM practices accounted 93.4% for the variability of operational performance. Because of the encouraging statistical level of association, there is a significant overall impact of SCM practice in GREL's operational performance. Impact of supply chain management techniques on operational performance of organizations can therefore be considered to be significant. The study's findings support the widely held belief that SCM practices have an impact on organizational operational performance.

Also, in relation to the fourth research question, 'what is the mediating effect of knowledge sharing link between SCM Practices and operational performance?' Bivariate and multiple linear regression analysis was carried out to see the mediating effect in order to test the hypothesis regarding the effects of the mediating variable on the independent and dependent variables. From analysis, It is clear that neither the direct effect of SCMPs on knowledge sharing ($\beta = -0.124$; $t = -0.107$) nor the direct effect of knowledge sharing on SCMPs ($\beta = 0.022$; $t = 0.180$) is significant, confirming the direct only (non-mediation) effect of knowledge sharing on the link amid SCMPs and OP (Baron and Kenny, 1986). This tells us that,

knowledge sharing, as proposed as the mediator in this study, has no statistical significant effect on the response variables in the presence of the and explanatory variable. Hence, does not function as a mediator between SCMP's and OP as indicated by (Baron and Kenny, 1986).

5.2 CONCLUSION

In conclusion, GREL uses a framework of Supply Chain Management best practices in its daily operations. GREL employs these standard frameworks in other to be able to meet and conform to international standards like ISO 45001, ISO9001 etc. Furthermore, management is committed to ensure regular training and knowledge sharing, discover and remove barriers to success, streamline communication with customers, improve workplace culture, setting high standards and also monitor Supply Chain Practices that will improve operational performance. Additionally, management has made a commitment to continuously review the norms that guide the organization's performance success as well as the standards necessary to guide operational performance. The study also made a strong case for employers getting involved in raising production and operational efficiency.

In addition, the study showed that GREL's supply chain management strategy includes managing customer relationships, strategic supplier partnerships, lean practices, information sharing, outsourcing, logistics, and responsiveness. These practices are very crucial regarding to improvement of operational performance. Additionally, the supply chain management process places a high priority on customer satisfaction. As a result, GREL's supply chain practices place a strong emphasis on meeting customer needs before focusing on cost cutting.

SCM Practices generally have a favorable impact on performance, which the study also realized, according to the chi square test analysis. The effects were of high association, as evidenced by all performance indicators. However, the Phi and Cramer's V test revealed a moderate impact on operational performance in terms of logistics and responsiveness. This

indicates that for GREL to achieve higher association, these relationships must be further strengthened. Additionally, Operational performance and SCM procedures have a positive and significant link. In addition, knowledge sharing has an association on both operational performance and SCM practices. Knowledge sharing has an impact on operational performance and supply chain management procedures in terms of their causal relationship, but this impact is statistically insignificant. Thus, knowledge sharing constructs used in this research has no mediating effect on both supply chain management practices and operational performance. The overall impact of SCM practice on GREL operational performance is significant, especially in light of this encouraging statistical level of association. This study offers concrete proof that SCM practices at higher levels can improve supply chain and organizational operational effectiveness.

5.3 Recommendations

In light of the conclusions and assessment, the following recommendations are made: Given the overall strength of the connection between logistics and supply chain management methods, The chi square test indicates that there is a moderate association between operational performance and logistics; As a result, management should put policies into place and focus on its logistical operations in order to further increase the level of association of the effect to a higher association for a higher level of performance.

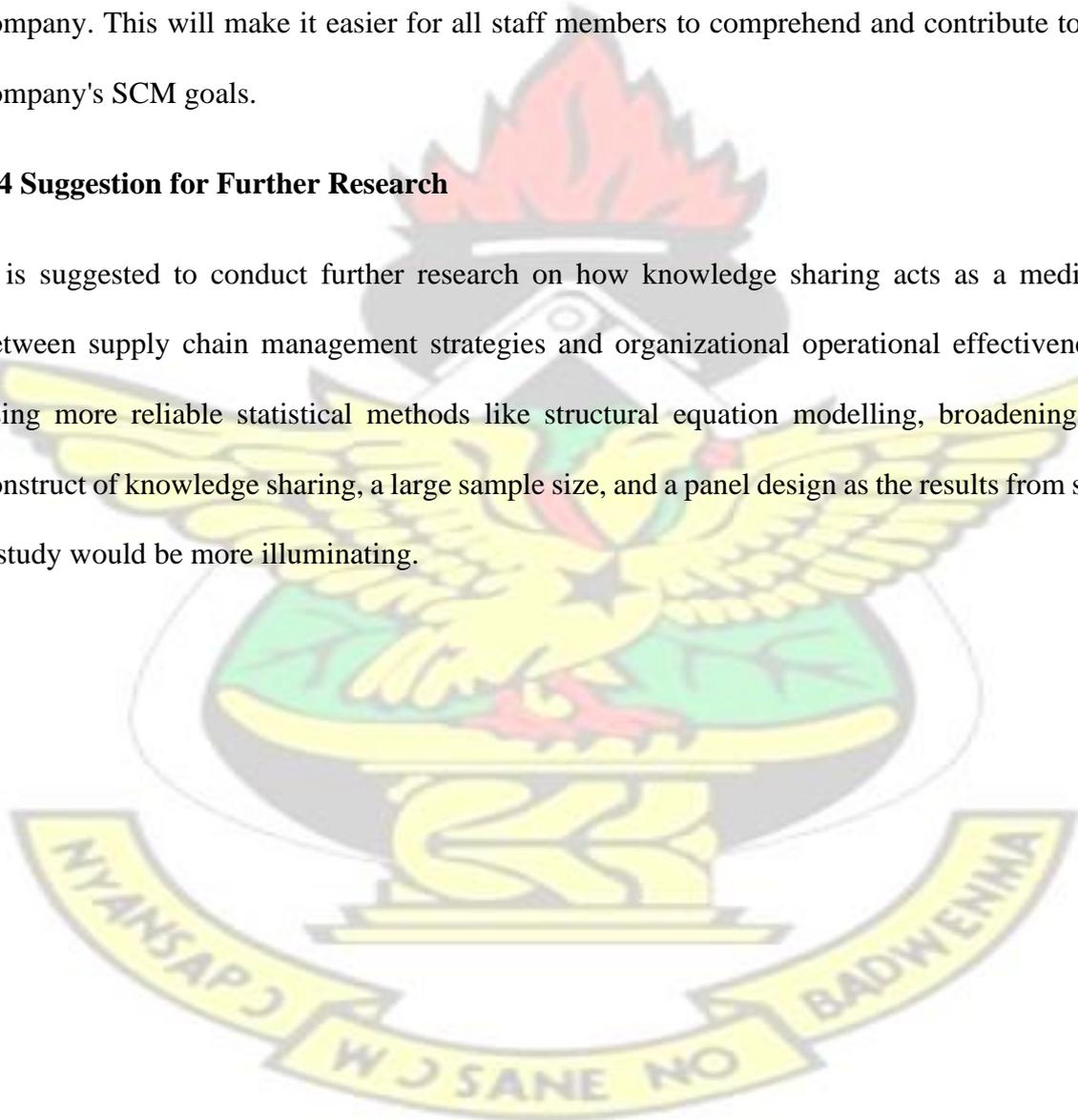
Additionally, the chi square test indicates that there is a moderate association between the general impact of supply chain management practices (Responsiveness) and GREL Operational performance. Management should consequently implement measures to improve its responsiveness in order to further increase the amount of association of the effect to a higher association for a higher level of performance.

The connection between an organization's SCM procedures and how they affect enhancing performance in the Ghanaian market should also be given considerable consideration. Instead of focusing on only one particular practice, managers of businesses must proactively rectify the combination of numerous SCM practices described in this study in order to improve performance.

Management must play a significant role in the adoption of supply chain practices within their company. This will make it easier for all staff members to comprehend and contribute to the company's SCM goals.

5.4 Suggestion for Further Research

It is suggested to conduct further research on how knowledge sharing acts as a mediator between supply chain management strategies and organizational operational effectiveness., using more reliable statistical methods like structural equation modelling, broadening the construct of knowledge sharing, a large sample size, and a panel design as the results from such a study would be more illuminating.



REFERENCES

- Adebayo, I. Toyin, (2012) 'Supply Chain Management (SCM) Practices in Nigeria Today: Impact on SCM Performance European', *Journal of Business and Social Sciences*, 1(6):107-115.
- Alireza, C., Anahita, B., Mohammad, A., Seyed, B., & Pejman, S. (2011). A Model for Supply Chain Performance of Electronics Industry in Malaysia. *International Conference on Social Science and Humanity*.
- Alphonse, D. (2013). Solving the puzzle of industry's rubic cube-effective supply chain management. *Logistics Focus* 2 (4), 24.
- Arawati, A., (2011), 'Supply chain management, product quality, and business performance', *International Conference on Sociality and Economic Development*, 10: 98-102.
- Arshinder, K., (2008) An integrative framework for supply chain coordination. Unpublished doctoral thesis, Indian Institute of Technology Delhi, New Delhi.
- Arun, K. (2008). Liderlik Tarzlari Ile Paylasımcı Bilgi Kültürü Iliskisi [Relationship between Leadership Styles and sharing information Culture], Dissertation, Ataturk University, Erzurum, Turkey.
- Balsmeier, P. W. and Voisin, W. (1996). Supply chain management: a time based strategy. *Industrial Management*, 38 (5):24-70.
- BEAMON, B. M. Measuring supply chain performance. *International Journal of Operations & Production Management*, v. 19, n. 3, p. 275-292, 1999.
- Beamon, B. M., and Chen, V. C. P. (2001). Performance analysis of conjoined supply chains. *International Journal of Production Research*, 39(14), 3195–3218 <http://www.tandf.co.uk/journals>

- Bearnon, B. (2014). Supply chain design and analysis: models and methods. *International Journal of Production Economics* 55 (3), 281-294.
- Bhasin, S. & Burcher, P. (2006), Lean viewed as a philosophy, *Journal of Manufacturing Technology Management*.
- Burtonshaw-Gunn, S. A., and Salameh, M. G. (2009). *Essential Tools for Organizational Performance: Tools, Models and Approaches for Managers and Consultants*. UK: John Wiley & Sons Ltd.
- Chantrasa, R. (2005). *Decision Making Approaches for Information Sharing In a Supply Chain*, Dissertation, Graduate School of Clemson University, May
- Chen, I. and Paulraj, A. (2010). Towards a theory of supply chain management: the constructs and measurements, *Journal of Operations Management*, Vol. 22(2) 19-50.
- Chima, C. M., (2007), “Supply-Chain Management issues in the Oil and Gas Industry”, *Journal of Business and Economic Research*, Volume 5, Number 6, Pages 27 – 36.
- Chorafas D.N. (2001). *Integrating ERP, CRM, Supply Chain Management, and Smart Materials*, Auerbach Publications.
- Christopher, M. (2003). *Logistics and Supply Chain Management*. London: Pitman Publishing.
- Cooper M.C., Lambert D.M., Pagh, J.D. (1997). Supply Chain Management - More than a New Name for Logistic, in: *International Journal of Logistics Management*, 8(1), 1-14.
- Cooper, D. R., & Schindler, P. S. (2003). *Business Research Methods* (8th edition). USA: McGraw-Hill.
- Cooper, M., Lambert, M., and Pagh, J.(2014). Supply chain management: more than a new name for logistics, *The International Journal of Logistics Management*, 8 (1), 10.

- Dong S., Xin Xu S. & Zhu K. X. (2009). Information technology in supply chains: The value of it-enabled resources under competition. *Information Systems Research*, March, 20(1), 18-32.
- Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23(4), 660-679.
- Faisal, T. (2011). A study of total quality management and supply chain management practices. *International Journal of Productivity and Performance Management*, 60(3), 268-288
- Flynn, B. B. and Flynn, E. J. (2005). Synergies between supply chain management and quality management: emerging implications *International Journal of Production Research* 43(16) August 2005, 3421-3436
- Flynn, B., Huo, B., & Zhao, X. (2010). The impact of supply chain integration on performance: A contingency and configuration approach. *Journal of Operations Management*, 28, 58-71.
- Ford, C. M. (2002). The futurity of decisions as a facilitator of organizational creativity and change. *Journal of Organizational Change Management*, 15(6), 635–646.
- Greeff, G. & Ghoshal R. (2004). *Practical E-Manufacturing and Supply Chain Management*, Elsevier, UK.
- Gunasekaran, A., Patel, A., & McCaughey, R. (2003). A framework for supply chain performance measurement. *International Journal of Production Economics*.
- Handfield R. B., (2002), *Supply Chain Redesign: Converting Your Supply Chain into an Integrated Value Stream*, New York, Financial Prentice Hall.

- Handfield, R.B. (1993), "A resource dependence perspective of Just-in-Time purchasing", *Journal of Operations Management*, Vol. 11 No. 3, pp. 289-311
- Hausman, W. (2004). Supply chain performance metrics. *The practice of supply chain management: Where theory and application converge*, 61-73.
- Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and Process Management*, 6(2), 91-100.
- Hershauer, J. C., Walsh, K. D., & Tommelein, I. D. (2005). Applications of Supply Chain Management and E-Commerce Research
- Hoek, V.R.I. (1998). Measuring and improving performance in the supply chain. *Supply Chain Management Journal*, 3, 187–192.
- Holcomb, T.R. and Hitt, M.A. (2007) 'Toward a model of strategic outsourcing', *Journal of Operations Management*, Vol. 25, No. 2, pp.464-481.
- Holmberg, S. (2015). A systems perspective on supply chain measurements. *International Journal of Physical Distribution and Logistics Management* 30 (10), 847-868.
- Hult, G. T. M., Ketchen, D. J. Jr, & Slater, S. F. (2004). Information processing, knowledge development, and strategic supply chain performance. *Academy of Management Journal*, 47(2), 241–253.
- Ipe, M. (2003). Knowledge sharing in organizations: A conceptual framework. *Human Resource Development Review*, 2(4), 337–359.
- JChen, I., & Paulraj, A. (2004). Towards a theory of supply chain management: the constructs and measurements. *Journal of Operations Management*, 119-150.

- Kannan Vijay, R. & Tan Keah, C. (2002, fall). Supplier selection and assessment: Their impact on business performance. *The Journal of Supply Chain Management*.
- Kim S. W., (2006). Effects of Supply Chain Management Practices, Integration and Competitive Capability on Performance. *An International Journal*, 11(3) 241-48.
- Kim, S. W., & Narasimhan, R. (2002). Information system utilization in supply chain integration efforts. *International Journal of Production Research*, 40(18), 4585–4609.
- Kim, S. W., (2006). Effects of supply chain management practices, integration and competition capability on performance, *Supply Chain Management: An International Journal* 11(3): 241-248.
- Kothari, C. R. (2004). *Research Methodology: Methods and Techniques* (2nd Ed.). New Delhi: New Age International limited.
- Kothari, C.R. (2005). *Research Methodology*. New Age International (P) Limited Publishers, New Dehli.
- Kumar S. (2007). *Connective Technologies in the Supply Chain*, Auerbach Publications.
- Lalonde, B. J. (1998). “Building a Supply Chain Relationship”, *Supply Chain Management Review*, 2(2), pp. 7-8.
- Lancioni, R. A., Smith, M. F., & Oliva, T. A. (2000). The Role of the Internet in Supply Chain Management. *Industrial Marketing Management*, 29(1), 45–56.
- Larsson, P.D. and Halldorsson, A., 2004. Logistics versus Supply Chain Management. *An International Survey*. *International Journal of Logistics. Research and Applications*, 7 (1), pp. 17-31.

- Lathin, D., and Mitchell, R. (2001). Lean manufacturing: techniques, people and culture. In *ASQ World Conference on Quality and Improvement Proceedings* (p. 321). American Society for Quality.
- Lenny, K., Mehmet, D., Erkan, B., Ekrem, T. and Selim, z. (2007), "The impact of supply chain management practices on performance of SMEs", *Industrial Management & Data Systems* Vol. 107 No. 1, 2007 pp. 103-124.
- Lewis, M.A. (2000), "Lean production and sustainable competitive advantage", *International Journal of Operations & Production Management*, Vol. 20 No. 8, pp. 959- 978.
- Li Suhong, Bhanu Ragu-Nathan, Ragu-Nathan, T. S., Subba Rao, S. (2006). The impact of supply chain management practices on competitive advantage and organ performance. *International Journal of Management Science*, 107-124.
- Li, S. (2002). An Integrated Model for Supply Chain Management Practice, Performance and Competitive Advantage, Toledo University, August.
- Li, Y. (2007). A Research Model for Collaborative Knowledge Management Practice, Supply Chain Integration and Performance, Dissertation, The University of Toledo, May.
- Liker, J.K. (2004). *Toyota Way: 14 management principles from the world's greatest manufacturer*. McGraw-Hill, New York.
- Lockamy, A., Beal, R. M., & Smith, W. (2000). Supply Chain Excellence for Accelerated Improvement. *Interfaces*, 30(4), 22–31. doi:10.1287/ inte.30.4.22.11646
- MacCarthy, B. L., Blome, C., Olhager, J., Srari, J. S., Zhao, X. (2016). Supply chain evolution— theory, concepts and science *Int. J. Oper. Prod. Manag.*, 36, pp. 1696-1718.

- Mahbubul, H. and Rafikul, I. (2013). 'Effects of Supply Chain Management Practices on Customer Satisfaction: Evidence from Pharmaceutical Industry of Bangladesh', *Global Business and Management Research: An International Journal*, 5(3).
- Malhotra, A. (2000, August). *Transforming Supply Chains: Infrastructures for Collaborative Knowledge Creation*, University of Southern California,
- Manzoni, A. & Islam, S. M.N. (2009) *Performance Measurement in Corporate Governance DEA Modelling and Implications for Organisational Behaviour and Supply*, Physica-Verlag (Springer Company), London.
- Martin, R. (2002, December). *Data Sharing Between Supply Chain Members*, Dissertation, Clemson University.
- Meakem Glen, T. (2003). *The global Supply Chain Management Imperative*.
- Mentzer, J. T., Min, S., Zacharia, Z. G. (2000). "The nature of inter-firm partnering in supply chain management". *Journal of Retailing* 76 (4).549–568.
- Mentzer, J., DeWitt, W., Kleeber, J., Min, S., Nix, N., Smith, C., & Zacharia, Z. (2001). *Defining Supply Chain Management*. *Journal of Business Logistics*, 1-25.
- Mentzer, J.T., DeWitt, W., Kleeber, J.S., , Min, S., , Nix, N.W., , Smith, C.D., & Zacharia, Z.G. (2001). *Defining Supply Chain Management*. *Journal of Business Logistics*, 22(2), 1–25.
- Min, S., & Mentzer, T. J. (2004). *Developing and measuring supply chain management concepts*. *Journal of Business Logistics*, 25(1), 63–99.
- Moberg, C.R, Cutler, B. D., Gross, A. and Speh, T. W. (2002). *Identifying antecedents of information exchange within supply chains*. *International Journal of Physical Distribution and Logistics Management* 32(9): 755–770.

- Monczka, R. M., Petersen, K. J., Handfield, R. B & Ragatz G. L. (1998). Success actors in strategic supplier alliances: the buying company perspective. *Decision Science* 29 (3), 5553– 5577.
- Moslem, G., Elham, R., & Mohammad Ali, E. S. (2013). Impact of Supply Chain Management Practices on Competitive Advantage in Manufacturing Companies of Khuzestan Province. *Interdisciplinary journal of contemporary research in business*.
- Mugenda, A. and Mugenda, o. (2013). *Research methods: Quantitative and qualitative approaches*. Nairobi: ACTS Press
- Mugenda, O. & Mugenda, A. (2003). *Research methods: quantitative and qualitative approaches*. (1st ed.). Nairobi: African Centre for Technology Studies (ACTS).
- Narasimhan, R., & Das, A. (2001). The impact of purchasing integration and practices on manufacturing performance. *Journal of Operations Management*.
- Noble D. (1997) „Purchasing and supplier management as a future competitive advantage edge“, *Logistic Focus*, 5(5): 23-27.
- Nonaka, I. (1994) A dynamic theory of organizational knowledge creation. *Organization science* 5: 14–37.
- Nonaka, I.,& Takeuchi, H. (1995). *The knowledge creating company: How Japanese companies create the dynamics of innovation*. New York: Oxford University Press.
- Orodho, A. J, (2003) *Essentials of Educational and Social Science Research methods: Qualitative and Quantitative Approaches*. Nairobi Acts Press
- Otchere, A. F., Annan, J. and Anin, E. K., (2013) *Achieving Competitive Advantage through Supply Chain Integration in the Cocoa Industry: A Case Study of Olam Ghana Limited*

- and Produce Buying Company Limited. *International Journal of Business and Social Research (IJBSR)*, Vol. 3 (2), pp. 131-145.
- Peteraf, M. A. (1993), "The cornerstones of competitive advantage: A resource-based view", *Strategic Management Journal*, 14, pp. 179-191.
- Priscila L. S. M. and Luiz A. L. B., (2011). Supply Chain Management measurement and its influence on Operational Performance', *Journal of Operations and Supply Chain Management*, 4 (2),56-74.
- Purcell, J., Kinnie, N., Swart, J., Rayton, B., & Hutchinson, S. (2009). *People Management and Performance*. USA: Routledge.
- Rai A., Patnayakuni R. & Seth N. (2006). Firm performance impacts of digitally enabled supply chain integration capabilities. *MIS Quarterly*, June, 30(2), 225-246.
- RAMDAS, K. and Spekman, R. E. (2000). Chain or shackles: understanding what drives supply chain performance. *Interfaces*, v. 30, n. 4, p. 3-21, 2000.
- Raps, A. (2005). Overcoming obstacles to strategy implementation. *Handbook of Business Strategy*. 10. 143-145
- Robertson, I. T., Callinan, M., & Bartram, D. (2002). *Organizational Effectiveness: The Role of Psychology*. UK: John Wiley & Sons. doi:10.1002/9780470696736
- Roland, S. M., (2012). *The effect of supply chain management processes on competitive advantage and organizational performance*. Air Force Inst of Tech Wright-Patterson Afb Oh Graduate School Of Engineering And Management.
- Ross, D. F. (2003). *Introduction to E-Supply Chain Management: Engaging Technology to Build Market-Winning Business Partnerships*. USA: St. Lucie Press.

- Sahin, Y. (2009). Bilgi Yönetimi Ve Tedarik Zinciri Yönetimindeki Uygulamaları [Knowledge Management and Supply Chain Management in Practice], Dissertation, Marmara University, Istanbul.
- Schary, P. and Skjott-Larsen, (2008). Managing the Global Supply Chain. Copenhagen: Handelwhojskolens Forlag.
- Sharma, S. R. (2005). Management of School Organizations. New Delhi: Shri Sai Printographers.
- Simatupang, T.M. and Sridharan, R. (2002). “ The Collaborative Supply Chain”, The International Journal of Logistics Management, Vol. 13, No. 1, pp. 15-30
- Sin Leo, Y. M., Tse, A. C. B., & Yim, F. H. K. (2005). CRM: Conceptualization and scale development. European Journal of Marketing, 39(11/12), 1264–1290.
- Smith, A. D. (2013). Competitive uses of information and knowledge management tools: Case study of supplier-side management. International Journal of Knowledge-Based Organizations, January-March, 3(1), 71-87.
- Stuart, F. (2007). Supply-chain strategy: organizational influence through supplier alliances. British Academy of Management
- Supalak, A. (2010). Supply chain management practices in the hotel industry: an examination of hotel food supply chains in south England. Unpublished PhD thesis, University of Exeter.
- Swink, M., Melnyk, S. A., Cooper, M. B., & Hartley, J. L. (2014). Managing Operations Across The Supply Chain (2nd ed.). New York: McGraw-Hill.
- Tan, K., Kannan, V., & Hadfield, R. (2008). Supply chain management: supplier performance and firm performance. International Journal of Purchasing and Materials Management.

- Tan, K., Kannan, V., and Hadfield, R. (2008). Supply chain management: supplier performance and firm performance. *International Journal of Purchasing and Materials Management*.
- Taro, Y. 1967. *Statistics, An Introductory Analysis*, 2nd Ed., New York: Harper and Row.
- Tracey, M., Lim, J.-S., & Vonderembse, M. A. (2005). The impact of supply-chain management capabilities on business performance. *Supply Chain Management: An International Journal*, 10(3), 179–191.
- Unuvar, M. (2007). *Butunlesik Tedarik Zinciri Yonetim Uygulamalarinin Orgutsel Yapiya Etkisi [Effect of Integrated Supply Chain Management Application on Organizational Structure]*, Dissertation, Dokuz Eylul University.
- Vereecke, A., & Muylle, S. (2006). Performance improvement through supply chain collaboration in europe. *International Journal of Operations & Production Management*, 26(11), 1176–1198.
- von Hippel, E. (1994). ‘Sticky information’ and the locus of problem solving: Implications for innovation. *Management Science*, 40(4), 429–439. doi:10.1287/ mns.40.4.429
- Wang, W. Y. C., Heng, M. S. H., & Chau, P. Y. K. (2007). *Supply Chain Management: Issues in the New Era of Collaboration and Competition*, Idea Group Publishing.
- Wilson, M. M., & Roy, R. N. (2009). Enabling lean procurement: a consolidation model for small-and medium-sized enterprises. *Journal of Manufacturing Technology Management*, 20(6), 817-833.
- Wisner, J. D. (2003). A structural equation model of supply chain management strategies and firm performance. *J. Bus. Logist.*, 24(1): 1–26.
- Yalciner, H. (2004). *Tedarik Zinciri Yonetiminde Bilisim Teknolojileri [IT in Supply chain management]*, Yuksek Lisans Tezi, Master Dissertation Sakarya Universitesi,

- Yamin, S., Gunasekruan, A. and Mavondo, F. T. (2009). Relationship between generic strategies, competitive advantage and firm performance: an empirical analysis“, *Technovation* 19(8):507-518.
- Yu, Z. h., Yan H., Cheng, T.C.E (2001), “Benefits of information sharing with supply chain partnerships”, *Industrial Management & Data systems*, Vol. 101, No. 3, pp. 114-119
- Yusuf, Y.Y., Gunasekaran, A., Adeleye, E.O., & Sivayoganathan, K. (2004). Agile supply chain capabilities: determinants of competitive objectives. *European Journal of Operational Research*, 159, 379–392.
- Zhao, Y. (2002). *The Impact of Information Sharing on Supply Chain Performance*, Dissertation, Northwestern University, Evanston, Illinois.
- Zhou, H. (2003). *The Role of Supply Chain Processes and Information Sharing in Supply Chain Management*, Dissertation, The Ohio State University, 22.
- Zhou, H. and Benton Jr, W.C. (2007), "Supply chain practice and information sharing", *Journal of Operations Management*, Vol. 25, pp. 1348-1365
- Alaaj,S.,Mohamed, Z.A., & Bustamam, U.(2017). The effect of knowledge management capabilities on performance of companies: A Study of service sector.*Int. J. Econ.Res*, 14, 457-470
- <https://research-methodology.net/research-methodology/ethical-considerations/>
accessed on 1/7/2022

APPENDIX

KNUST SCHOOL OF BUSINESS

DEPARTMENT OF SUPPLY CHAIN AND INFORMATION SYSTEMS

QUESTIONNAIRE

This questionnaire is part of a thesis required by the Kwame Nkrumah University of Science and Technology as a partial requirement for the award of Masters in Science. The questionnaire is designed to implore your independent views on **“The Effects Supply Chain Management Practices on Organizational Operational Performance with Knowledge sharing as a link of Mediation”**. All information provided shall be treated as confidential and used strictly for Academic purpose. Please answer the following questions freely without indicating your name.

PART 1: Background Data

- 1) Gender: A) Male [] B) Female []
- 2) Age: A) Below 20yrs [] B) 21-30yrs [] C) 31-40yrs [] D) 41-50yrs [] E) Above 50yrs []
- 3) Educational:
A) PHD [] B) Master’s Degree [] C) First Degree [] D) HND [] E) Others, Specify.....
- 4) How many years have you been working in your company?
A) 1 year and below [] B) 2-5 years [] C) 6-9 years [] D) 10 years and more []
- 5) How many employees does your company have?
A) Below 5 [] B) 6 – 10 [] C) 11 and above

PART 2: Standard Framework for Ensuring Organizational Operational Performance.

6) What is your level of agreement to the standard framework for ensuring Organizational operational Performance at Ghana Rubber Estate Limited? 1 – Strongly Disagree, 2 – Disagree, 3 – Somewhat Agree, 4 – Agree, 5 – Strongly Agree. Kindly tick.

Standard Framework	Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
Regular training and knowledge Sharing					
Discovery and removal of barriers to success					
Streamlining communications with your customers					
Workplace culture					
Access to information					
Setting a high standard					
Better order fulfilment					
Employees are involved in improving production/operation efficiency					
Top management committed to ensuring quality operational performance					

PART 3: Supply Chain Management Practices at Ghana Rubber Estate Limited.

7) What is your level of agreement to the Supply Chain Management Practices used at Ghana Rubber Estate Limited? 1 – Strongly Disagree, 2 – Disagree, 3 – Somewhat Agree, 4 – Agree, 5 – Strongly Agree. Kindly tick.

Supply Chain Management Practices.		Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
Customer Relationship Management						
1	We facilitate customers' ability to seek assistance from us.					
2	Regular interaction with customers to set reliability and responsiveness and other standards					
3	Customer evaluation and satisfaction are measured on regular basis					
4	We periodically evaluate the importance of our relationship with our Customers.					
Strategic Supplier Partnership						
1	Quality is considered as a key component in supplier selection					
2	We regularly solve problems jointly with our suppliers.					
3	We have been helping our suppliers to improve their product quality.					

4	Our key suppliers are included in our planning and goal-setting activities.					
5	We actively involve our key suppliers in new product development Processes.					
Information Sharing						
1	Our Business Partners share business knowledge of core business process with us					
2	Our Business Partners share exclusive and vital information with us					
3	Exchange of information with our partners (formal or informally) is frequent.					
4	Together with our business partners keep each other informed about events or changes that may affect the other partners					
5	Information exchange between our trading partners and us is timely.					
Lean Practices						
1	Our firm reduces process set-up time (time required to prepare or refit equipment/workstation for production)					
2	Our firm has continuous quality improvement programs					
3	Our firm produces only what is demanded by customers when needed					

(e.g. JIT)					
Outsourcing					
Logistics					
Responsiveness					

8. What is the main objective of this company's supply chain practices?

Cost reduction () satisfying customer service level requirements () other () please mention.....

PART 4: Effects of Ghana Rubber Estate Limited (GREL) Supply Chain Management Practices on Operational Performance.

9) What is your level of agreement to effect of GREL supply Chain Management Practices on their Operational Performance? 1 – Strongly Disagree, 2 – Disagree, 3 – Somewhat Agree, 4 – Agree, 5 – Strongly Agree. Kindly tick.

Statement		Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
Delivery Dependability; been able to provide on time delivery the type and quantity of product required by customer(s).						
1	The company delivers customer order on time.					
2	The company provides dependable delivery.					
3	Time to solve customer complaints is short.					
4	Customer order processing time is short.					
Improves Product Quality; providing product quality and performance that creates						

higher value for customers with little or no defects						
1	The company provides products that are highly reliable and durable					
2	The company is able to compete based on quality.					
3	The company offers high quality products to our customer					
Price/Cost						
1.	The Company utilizes its capacity very well					
2.	The company operates with less Production cost.					
3.	The company offers competitive prices					
4.	Inventory turnover is high					
Improvement of Customer Satisfaction						
Safeguard supply of raw materials						
Competitive Advantage						
reducing the risk of recalls						
Builds strong consumer brand						
SCM lowers the cost of doing business						
helps balance the supply of products with market demand						

PART 5: Mediating effect of Knowledge Sharing link between Supply Chain Management Practices and Operational Performance.

9) What is your level of agreement to the role Knowledge sharing play between Supply Chain Management Practices and Operational Performance.? 1 – Strongly Disagree, 2 – Disagree, 3 – Somewhat Agree, 4 – Agree, 5 – Strongly Agree. Kindly tick.

Statement	Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
-----------	------------------------	---------------	---------------------	------------	---------------------

Sharing of knowledge across the supply chain can lead to increased visibility, which in turn might improve the resiliency of supply chains.					
knowledge sharing enhances the responsiveness of supply chain.					
Effective knowledge sharing can aid in a better understanding of the disruptions, and in turn lead to a more resilient supply chain.					
knowledge sharing across supply chains can provide the members with prior knowledge on supply chain disruption, which, through the reduction in the time for event detection, can improve the event readiness of the supply chain					

Thank you for your feedback.

