

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND  
TECHNOLOGY, KUMASI**

**ASSESSING THE EFFECT OF SUPPLY CHAIN MANAGEMENT  
PRACTICES ON COMPETITIVE ADVANTAGE AND CUSTOMER  
SATISFACTION**

**BY**

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requirements for the award of the degree of

**MASTER OF SCIENCE IN  
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## DECLARATION

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

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## DEDICATION

I dedicate this piece of work first and foremost to God Almighty for his grace and his protection throughout the period of my study in KNUST. I further dedicate this research study to my Parents Mr. and Mrs. Rev Gilbert Asare Ntow, Mary Otu of Tepa GCB BANK PLC. Special dedication also goes to my lovely wife: Harriet Wiafe Dumaa. To my daughters: Amarisa Akua Adepa Durowaa Omane and Mariam Alhassan. To my son: Jude Yaw Asare Ntow Omane. To my relationship manager: Richard Osei. Staff of GCB BANK PLC Tepa BRANCH. Staff of GCB BANCASSURANCE Department Sunyani zone. My brother's and sister's: Isaac Kwabena Asante,Maxwel Bamfo Asante, Paul Asante, Janet Tetteh, Mary Asante.



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## ABSTRACT

The study assessed the effect of supply chain management practices on competitive advantage and customer satisfaction. An explanatory research design was utilized to collect data from a convenience sample of 110 respondents using closed-ended questionnaires. Quantitative and explanatory designs were adopted for the study. Also, the data was analysed using the PLS4 and SEM. The study found that, supply chain management practices have a negative effect on customer satisfaction, hence, H1 is unsupported. The study further found that supply chain management practices positively affect competitive advantage which, in turn positively affects customer satisfaction. Moreover, the mediating effect of CA between SCMP and CS is also significant. The study therefore recommends that, there is the need for companies to carefully manage their supply chains to ensure that they are delivering high-quality products to customers in a timely and transparent manner. The study based on these findings recommends that, management of firms should continuously engage their supply chain partners in a collaborative manner to help satisfy customer demand. Again, it is recommended that, there is the need for the firms to consider and implement which SCM practices positively results in achieving competitive advantage which in turn leads to customer satisfaction. The study again conceptualized customer satisfaction as the predicted variable and the supply chain management practices being the predictor variable. nevertheless, future researchers are recommended to consider how supply chain management practices affect firm performance and the moderation role of top management commitment.



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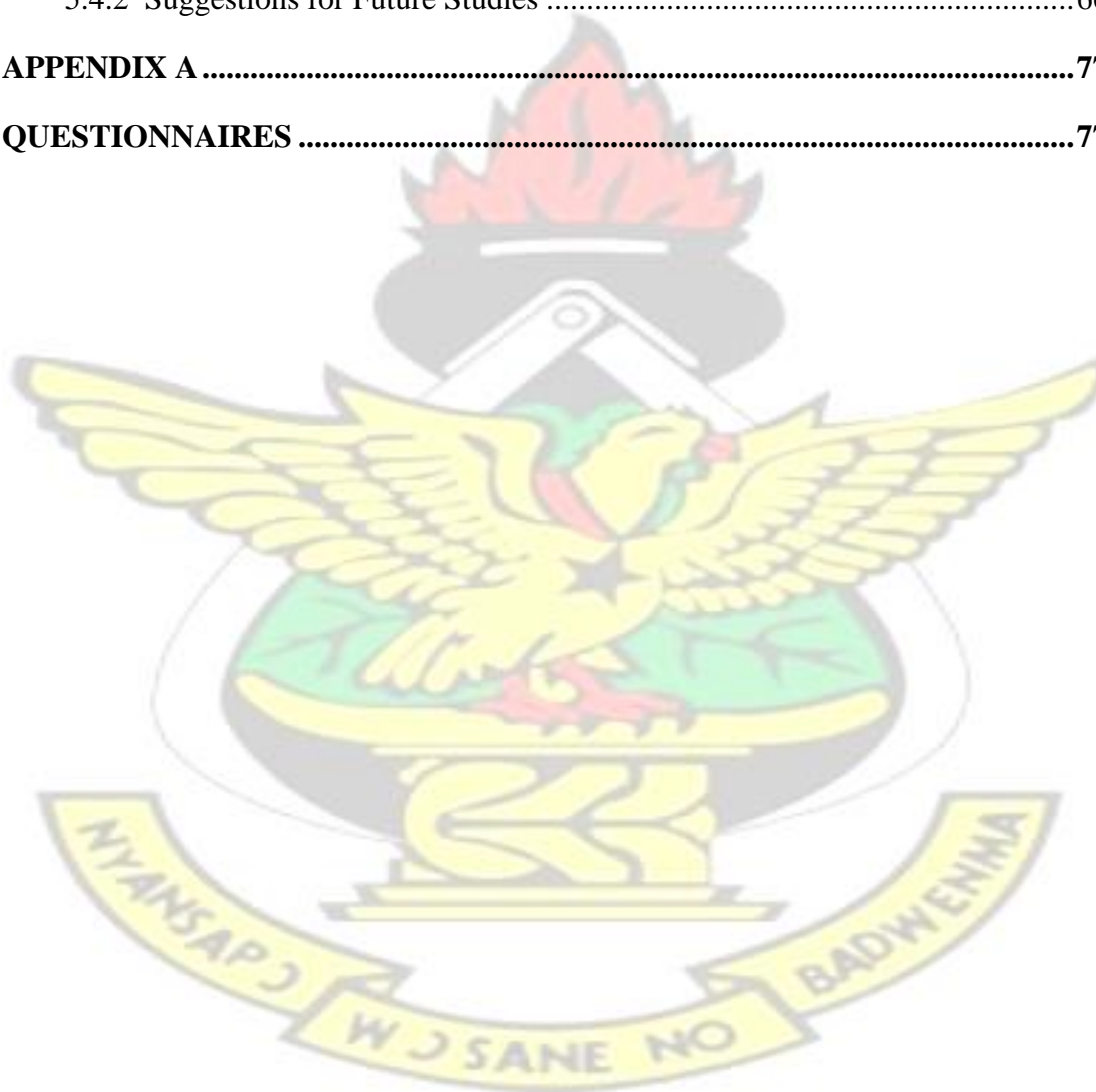
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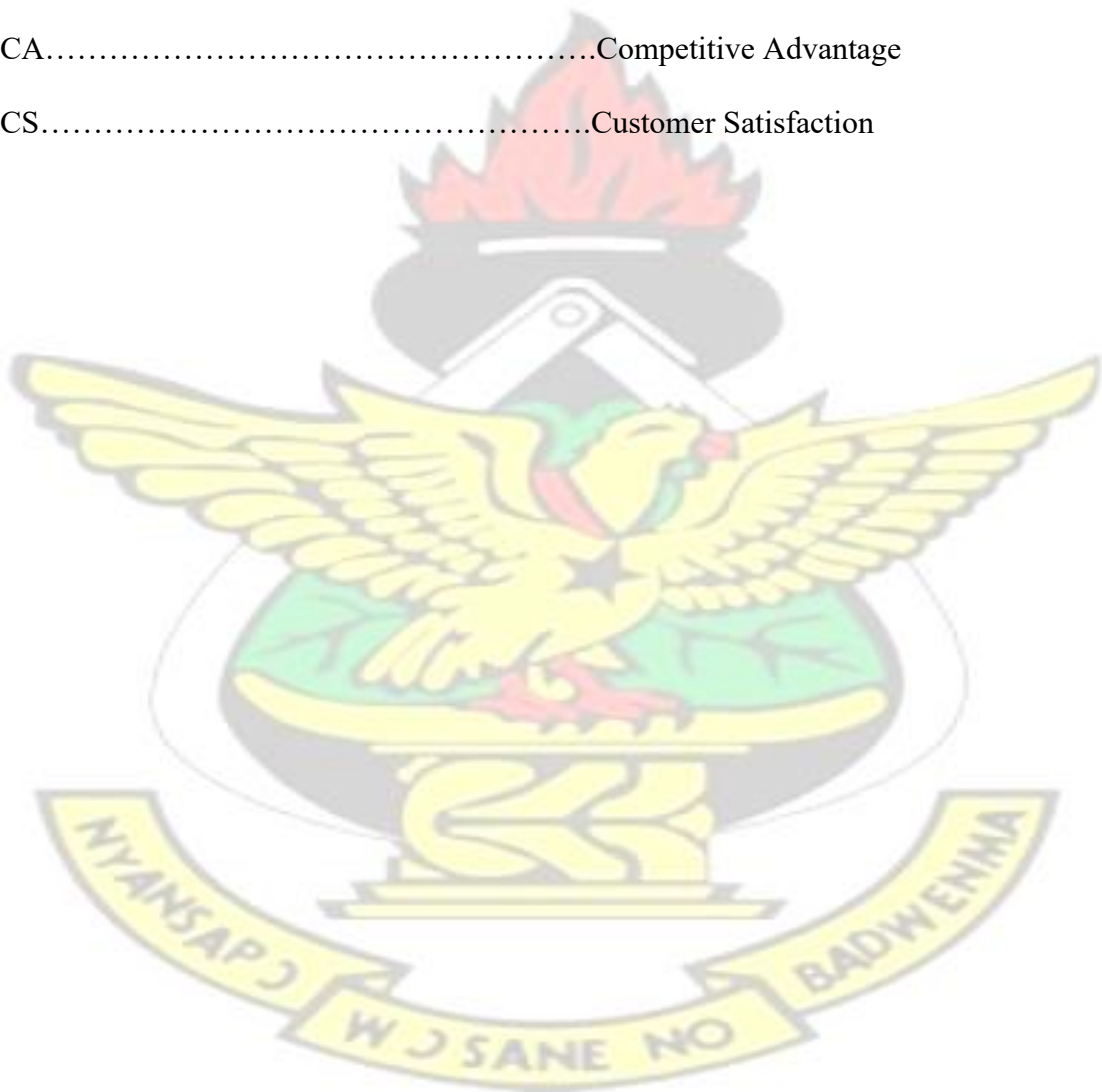
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## LIST OF ABBREVIATIONS

SDL.....	Service-Dominant Logic (SDL) Theory
CRM.....	Customer Relationship Management
SCM.....	Supply Chain Management
SRM.....	Supplier Relationship Management
RBV.....	Resource-Based View
SPSS.....	Statistical Package for Social Sciences
CA.....	Competitive Advantage
CS.....	Customer Satisfaction



## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

The concept of supply chain management has become increasingly popular in academia and industry due to its ability to deliver customer value, reduce costs, and provide a competitive advantage. According to recent academic studies, supply chains are now a part of the competition that previously existed between enterprises (Lummus and Vokurka, 1999). A supply chain consists of multiple businesses working together to provide goods or services to the market, and the relationships between these businesses have become more complex due to tactics such as outsourcing, strategic alliances, and third-party collaborations. Some scholars argue that a supply web, which emphasizes the intricate web of relationships, is preferable to a traditional supply chain (Chopra and Meindl, 2007).

Effective planning and management of internal processes are crucial components of supply chain management, and they help to ensure that value is provided to the end user.

In the manufacturing industry, global supply chains have become essential due to the availability of affordable labor costs and competitive material pricing. As a result, some well-known companies are drawn to these economies to establish their manufacturing facilities. Information sharing and relationships are fundamental to supply chain management (Khalifa et al., 2008; Babbar et al., 2008). In today's dynamic and complex business environment, companies compete on multiple factors, such as pricing, quality, and customer satisfaction. Therefore, to achieve success, companies must ensure that they operate as efficiently as possible by seeking innovative ways to boost efficiency,



quality, reduce costs, and improve customer service. To achieve a lasting competitive advantage that provides value to customers and distinguishes companies from their competitors, effective management of supply chain processes is critical (Liao and Kuo, 2014). This requires companies to implement practical strategies that optimize the primary drivers within and across companies. In conclusion, supply chain management is crucial for delivering customer value, cutting costs, and gaining a competitive advantage. Companies must manage their supply chain processes effectively to provide lasting competitive advantages that offer value to their customers and distinguish them from their competitors. Supply Chain Management (SCM) is an essential function of any modern business that aims to deliver customer value, reduce costs, and gain a competitive advantage. SCM is the process of planning, organizing, and controlling the flow of goods and services, from the point of origin to the point of consumption.

The Council of Supply Chain Management Professionals (2007) defines SCM as the planning and management of all operations connected to the procurement process, manufacturing, logistics management, and chain partners' cooperation. SCM is critical for any company that wishes to be successful in today's business environment, which is characterized by increased competition and dynamic market conditions. The ability of a business to build and manage specialized capabilities and competitiveness to deliver goods and services that satisfy customer needs determines the success of SCM. This involves effective coordination with other partners along the supply chain, efficient management of resources and people, and control of production to deliver the most value to clients. One of the most significant benefits of SCM is the increased level of cooperation among supply chain participants, which can help mitigate incorrect knowledge and information issues. Reliable information is critical for the success of

any business, and with accurate information, operational actions can be completed successfully (Storey et al., 2006; Posey and Bari, 2009). Supply chain practices are a foundation for customer satisfaction and a source of competitive advantage, forming the basis for efficient competition and company growth. SCM has evolved into a crucial success factor for companies looking to gain a competitive advantage in the marketplace. In today's business environment, where businesses compete on a variety of factors related to the goods and services they offer, SCM practices are essential to optimize primary drivers both within and across companies.

It could further be said that, SCM is a vital business function that allows companies to deliver customer value, reduce costs, and gain a competitive advantage. It involves planning, organizing, and controlling the flow of goods and services along the supply chain, and its success depends on effective coordination with other partners, efficient management of resources and people, and control of production to deliver the most value to clients. Reliable information is critical for the success of any business, and with accurate information, operational actions can be completed successfully. SCM practices are essential for customer satisfaction and a source of competitive advantage, forming the foundation for efficient competition and company growth. According to Porter (1985), competitive advantage refers to the extent to which a firm can establish a lead over its rivals in the market. A business has a competitive advantage if it develops value to differentiate itself from its competitors, and in doing so, achieves customer satisfaction and better market performance (Li et al., 2006). Additionally, a company can attain a competitive advantage by operating at a lower cost while delivering a comparable product price to its rivals (Amoako-Gyampah and Boye, 2001; Badri et al., 2000; Rosenzweig, Roth, & Dean, 2003; Ward et al., 1995). Li et al. (2006) proposed

a framework that identifies five aspects of competitive advantages, including cost, quality, reliability of supply, product innovation, and time-to-market.

Although studies on supply chain management practices and customer satisfaction, particularly in developing economies, with the mediating effect of competitive advantage are scarce, further research is essential. There is a need to investigate the impact of supply chain management practices on competitive advantage and customer satisfaction, especially in the Ghanaian context. Transaction cost economics theory provides insights for this study, which aims to provide empirical validation of supply chain management practices and how they drive competitive advantage in customer satisfaction.

## **1.2 Problem Statement**

The study of supply chain management practices has made significant progress in recent years, with various studies highlighting their advantages and drawbacks. While supply chain management practices offer many benefits, including increased efficiency, reduced costs, and improved supply chain performance, there are also potential risks associated with their implementation, such as increased reliance on suppliers, higher communication expenses, and the possibility of losing confidential information. According to Duffy and Fearne (2004) and Halldórsson and Skjtt-Larsen (2004), the advantages of supply chain management practices have been well-established, but there are also drawbacks, such as increased reliance on suppliers, higher communication costs, and the potential for the loss of confidential information (Kelle and Akbulut, 2005). The literature has extensively examined strategic supplier partnerships, customer relationship management, information sharing, and postponement (Li et al., 2006) but has primarily focused on developed economies and

industrial businesses. Anin et al. (2016) noted that studies on supply chain management and customer satisfaction in developing economies are limited.

Asamoah et al. (2021) studied the moderating effect of supply chain complexity on the relationship between governance mechanisms and operational performance and found that higher levels of supply chain complexity, formal control, and social control have negative and positive effects on operational performance, respectively. Their study also found that interfirm governance mechanisms mediate the relationship between supply chain capabilities and supply chain responsiveness. Barczak et al. (2019) investigated the role of logistics management practices on competitive advantage and performance in the German oil and gas industry and found that competitive advantage positively mediates logistics management practices and performance relationships. Li et al. (2006) reported that supply chain management practices have a positive impact on competitive advantage and firm performance. Gunasekaran et al. (2018) found a positive relationship between logistics management practices and competitive advantage. Lai and Wong (2019) investigated the effect of logistics management on performance in China and found that logistics management practices affect both environmental and operational performance.

Despite the extensive literature on supply chain management practices, the relationship between these practices and customer satisfaction and the mediating effect of competitive advantage have received limited attention in procurement and supply chain literature.



Therefore, it is crucial for researchers to examine issues related to strategic supplier partnerships, customer relationship management, and information sharing, which can provide valuable insights to business professionals and lay the foundation for further research. The present study aims to provide comprehensive information on the relationship between supply chain management practices, customer satisfaction, and the mediating effect of competitive advantage.

### **1.3 Objectives of the Study**

The main objective of the study is to examine the mediating effect of competitive advantage in the relationship between supply chain management and customer satisfaction. Specifically, the study seeks to achieve the following objectives.

1. To assess the relationship between supply chain management practices and customer satisfaction among firms in Ghana.
2. To examine the relationship between supply chain management practices on competitive advantage among firms in Ghana.
3. To examine the relationship between competitive advantage and customer satisfaction.
4. To assess the mediating effect of competitive advantage on the relationship between supply chain management practices and customer satisfaction.

### **1.4 Research Questions**

1. What is the relationship between supply chain management practices and customer satisfaction of firms in Ghana?
2. What is the relationship between supply chain management practices and competitive advantage among firms in Ghana?
3. What is the relationship between competitive advantage and customer satisfaction?



4. What is the mediating effect of competitive advantage in the relationship between supply chain management practices and customer satisfaction?

### **1.5 Significance of the Study**

The study makes a range of contributions. By empirically indicating that, supply chain management affects competitive advantage through and customer satisfaction. The study again will empirically the various practices of supply chain management. Theoretically, the study also contributes to the body of knowledge by showing how competitive advantage is achieved and also to satisfy customers. Once more, the study contributes by emphasizing the mediating effect of competitive advantage in the relationship between supply chain management and customer satisfaction.

In practice, management is informed by the study regarding the significance and/or advantages of concentrating on supply chain management as a potential driver to achieving competitive advantage and how to satisfy customers. The study's conclusions will also act as a guide for researchers and procurement specialists hoping to carry out similar studies in the future.

### **1.6 Summary of Methodology**

The study adopted a quantitative research approach to gather and analyze the research data. Also, the study adopts the survey approach. Hence, both the manufacturing and service sectors were as the study's populations. The study adopts a survey research approach. Also, the data was collected from 110 manufacturing and service firms in the Greater Accra region with the help of semi-structured questionnaires. Accordingly, a convenience sampling technique is employed to select the sample size of 110 firms in Ghana. Also, the study employs IBM SPSS, version 23 and SmartPLS4 to analyse the descriptive and inferential statistics of the study.

### **1.7 Scope of the Study**

Conceptually, the study focused on the mediating effect of competitive advantage in the relationship between supply chain management and customer satisfaction among firms in Ghana. Geographically, the study is limited to both manufacturing and service sectors. The firms were chosen due to its relation to the phenomenon under contemplation. The possibility of attaining workable data for the study also influenced the researcher's decision to use the firms.

### **1.8 Limitation of the study**

The generalisation of the study's results and findings is affected since the study is limited to only Greater Accra region. Further, the adoption of google form to administer the questionnaires may delay due to poor internet connection and frequent poor power supply.

Again, the fact that the student researcher was also involved in other academic pursuits is another study constraint. This led to the study thesis delay and eventual completion.

Last but not least, respondents are wary of asking for information about their jobs, but the researcher tried to establish a connection with them in order to obtain the essential data.

### **1.9 Organization of the Thesis**

The study is presented in five main chapters. Chapter one establishes the background to the study, statement of the problem, research objectives, research questions, justification of the study, research methodology, scope of the study, limitations, and the organization of the study. Chapter two represents the literature review of the study, it consists of the conceptual review, theoretical review, empirical review, conceptual framework, and hypotheses development. Chapter three represents the research

methodology; the population and sampling method used, data collection activities, data analysis procedures and the ethical consideration. Chapter four represents the data analysis and presentation and the discussions of the findings. Chapter five represents the summary of the research findings, conclusion, and recommendations.

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## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter is the literature review. It consists of sections such as conceptual review, theoretical review, empirical review, conceptual framework, and development of hypothesis.

#### **2.2 Conceptual Review**

A conceptual review is also described as a research approach that entails looking at and examining previously gathered information on a certain topic (Kothari, 2017). This section addresses the various constructs or concepts of the study, which are supply chain management practices, competitive advantage, and customer satisfaction.

##### **2.2.1 Supply Chain Management**

Levi et al. (2017) state that the main purpose of supply chain management is to obtain raw materials from suppliers, create value, and deliver it to customers. Effective supply chain management has become a crucial technique for maintaining competitive advantage and enhancing organizational performance because competition is no longer between businesses but between supply chains and supplier networks. Therefore, previous studies have defined the concept of supply chains and supply chain management in various ways.

According to Chopra and Meindl (2017), the supply chain consists of all parties that directly or indirectly contribute to meeting customer demand and all processes involved in fulfilling requests. Waters (2017) describes a supply chain as a series of processes and institutions through which goods move from initial suppliers to final customers. Additionally, Water (2017) notes that supply chains differ between companies and



products/services. Brandyberry et al. (2019) emphasize that supply chain management has become a crucial source of competitive advantage and overall firm value.

In summary, supply chain management involves various processes and institutions that aim to acquire raw materials, create value, and deliver products/services to customers. Effective supply chain management has become a significant factor in maintaining a competitive advantage in today's business environment. The definitions and understanding of supply chains and supply chain management vary between studies, emphasizing the importance of a comprehensive and nuanced approach to supply chain management.

**Table 2.1: Definitions of Supply Chain**

<b>Author (year)</b>	<b>Definition</b>
Chopra and Meindl (2017)	The supply chain is the network of connected processes that take place both within and between businesses to produce a good or service that satisfies customers.
Christopher (2018)	All activities involved in receiving and fulfilling a client request fall within the purview of supply chain. These include duties connected to meeting client needs,
Krajewski et al. (2019)	A supply chain is a collection of procedures that add value and connect a company's suppliers and customers.
(Murpy et al. (2017)	Manufacturers, suppliers, shippers, warehouses, retailers, and even customers are all part of the supply chain.
Li et al. (2018)	All parties involved in directly or indirectly satiating a customer request are included in the supply chain.
Javadian et al. (2017)	The transit of goods and the transformation of raw materials are both included in the supply chain.
Sufian (2019)	It involves controlling the relationships between suppliers and customers upstream and downstream in order to increase customer value while reducing total supply chain expenses.
Hofmann and Belin (2017)	The term "supply chain" can also refer to the process of maximizing inter-company financing as well as the overall assimilation of adopted financing linkages with a firm's suppliers, customers, and service providers.
DeweiLu (2019)	a group of connected businesses that add value to a flow of altered inputs from their point of origin to the finished goods or services that the chosen end customers have demanded.



Basu and Wright (2020)	It alludes to the actual movement of goods as well as the movement of information and resources.
Bowersox et al. (2017)	The phrase "supply chain" describes a comprehensive view of the relationships between chain participants that lead to consumer satisfaction when commodities are delivered to their destination.
Ballou (2018)	When a chain of players is referred to as a "supply chain," it refers to a comprehensive view of the relationships between chain members that lead to consumer satisfaction when items are delivered to their destination.
Handfield and Nichols (2020)	Supply chain refers to the actions involved in the movement and transformation of items from the extraction stage to the final consumer as well as the related information flows (SC).
Larmin (2018)	Supply chain is defined as a set of activities, procedures, and sub-processes that include procurement, operations, transportation, and warehousing.
Lambert (2018)	The "assemblage of processes, functions, activities, relationships, and channels by which goods, services, information, and financial transactions enter, pass through, and exit organizations" is referred to as the supply chain.
Wheelen and Hunger (2018)	"Supply chain management entails the development of networks for the procurement of raw materials, production of goods or services, storage and distribution of the goods, and delivery of the goods to customers and consumers,
Mentzer et al. (2020)	A company's supply chain links it to its clients, vendors, and other supply chain system participants, like warehousing and logistics companies.

Effective supply chain management (SCM) has emerged as a potentially significant technique of preserving competitive advantage and boosting organizational performance because competition today is not between businesses but rather between supply chains and supplier networks. Due of this, prior studies have defined the concept of supply chains and the management of supply chains in various ways. Chopra and Meindl (2017) claim that the supply chain is made up of all parties who directly or indirectly help to meet customer demand as well as all processes involved in taking requests and completing them.

### **2.2.1.1 Supply Chain Management Practices**

According to Li et al. (2006), supply chain management (SCM) practices are a collection of actions made by an organization to support efficient management of its supply chains.

This description leads one to the conclusion that supply and material management concerns, operations, information technology and sharing (ICT), and customer service are all elements of SCM techniques (Tan et al. 2002). According to McMullen (2016), other factors including technology, cost, inventory management, competitiveness, and external regulations must be successfully handled to meet the business objectives of each supply chain member. It also results in value creation for the final consumer. A variety of techniques and procedures are used in supply chain management to successfully collaborate with suppliers, customers, manufacturers, and distributors to improve the long-term performance of companies and their supply chains (Chopra and Meindl, 2017; Tseng, 2020). In this study, supply chain management practices are described as several management initiatives designed to enhance the performance of the supply chain (Li et al., 2017; Wong et al., 2018). To quantify and conceptualize supply chain management practices, the current study adopts three (3) key sub-variables, namely strategic supplier partnerships, customer relationships, and information sharing.

#### **2.2.1.1.1 Strategic Supplier Partnership**

Supplier partnership represents the long-term relationship between the organization and suppliers. An effective supplier's management can be a critical component of a supply chain management. It was discovered in the late 1980s that, working with suppliers might give businesses a competitive edge. Strategic supplier alliances can help

businesses increase their operational performance in terms of reliability, flexibility, cost, and quality (Rungtusanatham et al, 2018). The long-term partnership between an organization and its suppliers is known as a strategic supplier partnership as proposed by (Rungtusanatham et al., 2018). It is made to enable each participating firm to get significant continuous benefits by utilizing their strategic and operational skills (Wong et al., 2018). A strategic partnership places an emphasis on direct, long-term collaboration and promotes cooperative planning and problem-solving (Zhou and Benton, 2020). Such strategic alliances are formed to encourage mutual gain among the parties and continued engagement in one or more crucial strategic fields, such as technology, goods, and markets (Wong et al., 2018).

Organizations can operate more productively with a select few significant suppliers who are ready to share accountability for the products' success by forming strategic partnerships with them. Early-stage suppliers can provide more cost-effective design options, assist in choosing the finest materials and technologies, and aid in design evaluation. According to Lan et al. (2018), strategically aligned firms can collaborate closely and cut down on unnecessary time and effort. A successful supplier collaboration can be a crucial feature of a cutting-edge supply chain (Lan et al., 2018). Better coordination between the organization and its suppliers is necessary for strategic supplier partnerships; businesses typically have long-term relationships with suppliers who add value. A strategic supplier partnership is described in this study as a long-term engagement between an organization and its suppliers that influences the strategic and operational capabilities of each participating company to aid in the achievement of meaningful recurring benefits (Monczka et al., 2018). A strategic supplier partnership includes buying goods and services from suppliers, influencing their operational and

system capabilities, producing value, and improving supply chain performance (Monczka et al., 2018; Sufian, 2020). According to Hitt and Vaidyanath (2018), companies are realizing that, their suppliers and distributors have knowledge and expertise that can help them greatly improve the caliber of their goods and customer service.

High value items need to be shared and presented so that the end users may comprehend how they can address important needs and address pressing problems. Companies can work with their suppliers and distributors to get additional technological knowledge, market expertise, and other skills to successfully engage in continuous improvement to make products viable in the marketplace (Ansari and Modarress, 2020). Effective supply chain relationships help companies adapt to the shifting market and provide products that customers find beneficial.

Relationship with strategic supplier symbolizes the long-term engagement between the company and its suppliers, which consequently leads to firm performance. Possessing a solid supplier relationship could be crucial for an innovative supply chain (Noble, 2017). Through strategic supplier partnerships, businesses can work closely with suppliers who can share responsibility for the goods' success (Li et al., 2017). Working closely with suppliers and other businesses has a positive and significant impact on process innovation and incremental product innovation (Radas and Bozic, 2019).

#### **2.2.1.1.2 Customer Relationship Management**

Businesses must comprehend both present and future customer needs to satisfy customer demands and go above and beyond to meet customer expectations. An essential element of SCM is customer relationship management (CRM) (Noble, 2017).



Since customer relationship management can be viewed as a consistent organizational activity under the use of an integrated selling, marketing, and service strategy, a company's customer relationship practices can influence both its performance and organizational success in supply chain management practices. To put it another way, the company is attempting to identify the true needs of the consumer by integrating diverse processes and technologies, asking for internal product and service improvement, and trying to increase customer happiness and loyalty. As mass customization and personalized services become more popular, customer relationship management is becoming increasingly important for business sustainability (Lan et al., 2018). Maintaining positive relationships with all parties involved in the supply chain, including the customers, depends on the SCM program's successful implementation.

Customer relationship refers to the entire spectrum of strategies used to address customer concerns, create enduring bonds with customers, and boost customer satisfaction (Noble, 2017). Improved value for immediate downstream customers, those customers' consumers, and ultimately the end user, according to Flint (2017), helps businesses gain a competitive edge in the fast-paced business environment. According to Tan et al. (2019), companies can improve the speed and accuracy of their operational performance by involving customers in decisions about the quality and flow of materials. Therefore, when developing SCM plans and processes, the CRM component needs to be given the proper weight.

Because businesses are dependent on consumers, they must comprehend what those consumers want now and, in the future, try to meet those needs, and work to exceed those expectations (Noble, 2017). Businesses are integrating a variety of processes and



technologies, asking for internal product and service improvement, and using other strategies to foster client satisfaction and loyalty to understand the true needs of their customers. Customer loyalty and satisfaction are the primary objectives of customer relationship management. According to Day (2029), committed partnerships offer the strongest long-term advantage because they by their very nature create obstacles to competition. An organization can differentiate itself from competitors, retain customers, and significantly increase the value it offers to customers by cultivating excellent customer connections.

#### **2.2.1.1.3 Information sharing**

Information sharing is the business's capacity to share knowledge effectively and efficiently with its supply chain partners. One of the most critical skills in the supply chain process is effective information sharing. One of the most crucial instruments for developing an integrated and coordinated supply chain is information sharing. Information should be interoperable, or able to communicate with other systems, according to Lee (2017). According to Zailani and Rajagopal (2018), the rise of the internet and e-commerce offers a fresh chance to develop an integrated supply chain that is "smart.

Information sharing, according to Sridharan and Simatupang (2018), is the act of granting business partners access to confidential information so they may track the development of orders and products as they move through various supply chain processes. They highlighted a few components that make up information sharing, including the gathering, processing, storing, presenting, retrieving, and broadcasting of data on demand and forecasts, inventory location and status, order status, cost-related information, and performance status. Based on features like access, people, and information, the Internet, Intranet, and Extranet can be differentiated. People from

many walks of life can access the Internet. However, because of the variety and irregular format.

Currently, a lot of firms share information, and it's starting to work nicely (Young, 2020). Information communication is a crucial component of every SCM system (Moberg et al., 2020). The quality of information sharing is defined as the accuracy, adequacy, and timeliness of the information communicated between partners. According to Li et al. (2017), the amount of private and important information shared with a company's supply chain partner is referred to as information sharing in the supply chain. Additionally, Lin et al. (2017) defines information sharing as the capacity of the company to share knowledge effectively and profitably among associates in the supply chain. Many academics have written about how to share knowledge in SCM methods. According to Lalonde (2018), information sharing is one of the essential elements of a company's supply chain. Once more, Yu et al. (2021) agree that regular information exchange lessens the bullwhip effect's negative effects on a supply chain. enhancing one's competitiveness through sharing knowledge (Novack et al., 2019).

The benefits of information sharing in SCM have been thoroughly discussed (Cachon and Fisher, 2020). Sharing information makes it easier to coordinate supply chain activities, which facilitates material movement and lowers inventory costs. The effectiveness of the supply chain is impacted by information sharing in terms of total cost and service level (Zhao et al., 2020). One of the most crucial abilities in the supply chain process is effective information sharing. One of the most crucial strategies for building a connected and coordinated supply chain is information sharing. Information should be able to interface with other systems and be interoperable (Lee, 2017). Quantity and quality are two dimensions of information sharing. Both elements have

been handled as separate constructs in previous SCM research and are crucial for SCM procedures. The amount (level) of information sharing refers to how much important and confidential information is shared with supply chain partners (Lalonde, 2018). Shared information can range from being tactical to strategic in nature, as well as from being general market and customer information to details concerning logistics operations. Making accurate and current marketing data available at every point in the supply chain, according to many researchers, is the secret to a seamless supply chain. Information can be utilized as a source of competitive advantage by taking the readily available data and disseminating it to other parties within the supply chain.

Sharing of knowledge is one of the five components identified by Lalonde (2018) as constituting a strong supply chain connection. Stein and Sweat (2018) assert that supply chain partners that communicate often can function as a single entity. Together, they can more fully comprehend end-user requirements and, as a result, can react to market changes more quickly. Additionally, Tompkins and Ang (2017) see the efficient use of timely and relevant information by all functional supply chain elements as a crucial competitive advantage. The key to a seamless and efficient supply chain, according to Childhouse and Towill's (2016) empirical findings, is to streamline and make highly visible all information flow along the chain. The correctness, timeliness, sufficiency, and reliability of the information provided are only a few examples of the qualities of information sharing. Sharing of information is crucial, but how much it affects SCM depends on what information is exchanged, when, how, and with whom.

### **2.2.2 Competitive Advantage**

In today's competitive business world, the concept of competitive advantage has been hotly discussed in corporate strategy. Competitive advantage has been defined by

numerous researchers. Li et al. (2016) defines competitive advantage as an organization's capacity to establish and uphold a defensible position over its rivals. A corporation has a competitive edge, according to Barney (2012), when its actions in a market or industry generate economic value and few other businesses are doing the same. Additionally, Tracey et al. (2019) contend that a company's competitive advantage is composed of a variety of competencies that set it apart from its rivals (Thatte, 2017).

The business must do better than rivals in terms of consumer responsiveness to get a competitive edge. Williamson (2019) asserts that businesses can get a competitive advantage by paying attention to customer requests and wants. According to Lummus et al. (2016), supply chains will face competition from one another in the future. Li et al. (2016) defined competitive advantage as the extent to which a company can forge a defensible position over its rivals, consisting of capabilities that allow an organization to set itself apart from its rivals, and is the outcome of crucial management decisions. They provided five structures for competitive advantage: price/cost, product quality, delivery dependability, production innovation, and time to market. Businesses must figure out how to keep their competitive advantages over rivals as supply chains become more competitive in the global market.

Elgazzar (2017) asserts that companies can create strategies for better SCM and gain competitive advantages by connecting supply chain operations to the organization's financial strategic goal. The Resource-based View (RBV) contends that firms achieve and preserve competitive advantages by deploying priceless assets and inelastic capabilities to their supply chains. Price/cost, quality, delivery, and flexibility have all



been highlighted in the empirical research as key competitive advantage metrics (Tupi et al., 2016). Furthermore, recent research has revealed time-based rivalry as a crucial competitive priority. According to (Stalk, 2016; Vesey, 2016), time is the next source of competitive advantage. The five competitive capacities are competitive price, premium pricing, value-to-customer quality, dependable delivery, and manufacturing innovation. The components of the competitive advantage envisioned in the study include price/cost, quality, delivery reliability, product innovation, and time to market.

#### 2.2.2.1 Dimensions of Competitive Advantage

There are various ways of measuring the level of competitive advantage. Among them are cost reduction, products and service quality, delivery dependability and among others.

##### **1. Cost Reduction**

Cost reduction is the process of reducing unnecessary expenses to increase a business's bottom line. Each company uses a different set of methods and produces different results. On the other hand, effective cost-cutting is a dynamic, continuing, and reflective effort. Cost-cutting must change to reflect how firms are evolving (Shuler, 2021). Shuler (2021) also agrees that cost-cutting is a tactic used by companies to lower expenses while raising profits. Depending on the services or products a firm delivers, different tactics may be employed. On the other hand, Vesey (2016) asserts that cost reduction is a useful strategy for cutting expenses. Cost reduction is also described by Stalk (2016) as a corrective action based on a continual process of cost, function, and other analysis for improved application of production component components. Cost reduction is defined as "getting a meaningful and permanent reduction in the unit cost of goods manufactured or services rendered without compromising their suitability for the intended use or reducing the product's quality" in accordance with the consistent



past literature (Tipi et al., 2016). Therefore, substantial cost reduction is required, with a focus on removing unnecessary components from operations. Companies go through a cost-cutting process to lower expenses and increase earnings, which is occasionally required to stay competitive (CIPS, 2013). The process of cost reduction involves continuously analyzing various cost factors as well as every area of the organization with the aim of boosting productivity and reducing costs (Elgazzar, 2017). It supports setting competitive pricing for a good or service. It helps increase the market share of the sector. It supports an improvement in profit or return. It helps one obtain a competitive edge over opponents. As a result, businesses are now integrating their supply chains to reduce operating costs as part of their goal of gaining a competitive advantage.

## **2. Products and Service Quality**

Effective quality improvement has become recognized as a potentially important instrument for enhancing organizational performance and establishing a competitive edge. Quality has developed into a strategic concern for businesses, influencing the design of products and processes as well as the choice of product attributes (Garvin, 2005). Regarding what quality is, philosophers, economists, marketers, and operations managers have all stated diverse opinions (Forker et al, 2016). Juran (2009) defined quality as usability, placing particular focus on the following four criteria: Enterprises now consider quality to be a strategic problem that directs the development of product and process designs as well as the choice of product attributes (Garvin, 2015). Similar to this, quality and productivity, according to Larmin et al. (2017), can be used as tactical advantages to acquire a competitive advantage. Companies risk losing market share if they are unaware of factors that boost output or improve quality, as suggested by (Williamson, 2019).

Quality is a competitive tool in the market. By providing items that meet or exceed customers' wants and expectations, it earns a competitive advantage. Quality is defined from a variety of angles because it is a subjective goal with ill-defined characteristics, claim Li et al. (2016). An early definition of quality provided by Juran is "fitness for usage." A comparable definition of quality is provided by Lummus et al. (2016), who define it as "excellence, value, compliance with regulations, and meeting or exceeding consumers' expectations." Quality is thus a complex term. The eight dimensions of quality described by reference are: performance, features, dependability, compliance, durability, serviceability, aesthetics, and perceived quality (Garvin, 2005). As a result of satisfying customer needs, quality is unquestionably recognized as a key source of competitive advantage. Furthermore, researchers have linked quality to competitive strategy.

For instance, Lin et al. (2016) believe that quality reflects a firm's competitive strategy. Quality has moved from an operational to a strategic level, and as a result, firms should adopt quality as a strategic goal (Tracey and Vonderembse, 2016). As a result, in production strategy, quality is connected to both specification compliance and crucial consumer expectations (Teece and Pisano, 2017). According to Teece and Pisano (2017), in this situation, businesses who are in a quality competition may employ a differentiation strategy to position their products based on a variety of attributes and hence command a higher price. As a result, quality helps businesses become more competitive and foster client loyalty by meeting customer expectations. A corporation regards quality as a competitive weapon that should be used as a strategy that plays a big part in creating and preserving its competitive advantage because of this decision.

### **3. Delivery dependability/Reliability**

Price, quality, and customer service are all essential elements or competitive advantage indicators in today's cutthroat business environment (Brine et al., 2017). Lyson (2016) on the other hand, concurs that a provider's capacity to supply reliable and trustworthy products is a crucial and significant success factor from the perspective of the client. Delivery reliability refers to how closely a seller adheres to the timeline given at the time of sale for a product (Barney, 2017). According to Tatum (2017), delivery reliability (DR) is a term used to describe the proportion of deliveries made to customers that are thought to be free of any vendor or shipper error as opposed to the overall number of deliveries made in a certain period.

The objective is to determine the percentage of deliveries that are successful and those that don't meet the criteria of the business (Ellinger et al., 2017). To detect delivery process deficiencies and make modifications to lower the number of delivery errors, Penrose (2019) suggests conducting a periodic evaluation to determine the current delivery reliability ratio. With just-in-time manufacturing, delivery reliability is much more crucial. The capacity of a provider to satisfy its customers within the specified delivery timeline is demonstrated by perfect order fulfillment, which may be used to assess trustworthy delivery (Lin et al., 2017).

#### **2.2.3 Customer Satisfaction**

Business executives are increasingly considering customer satisfaction as a key factor when assessing quality. According to popular opinion, the single most important predictor of a company's future success is customer pleasure. The appraisal of a product's entire performance following purchase is referred to as satisfaction, which is a broad phrase (Kotler, 2018). Customer pleasure can refer to both goods and services

and can be represented in a variety of ways. The customer's expectations have a big impact on this very subjective rating. Along with their level of pleasure, the customer's experiences with the business and their results have a big impact on this. A pleased client is defined as "one who gains significant added value" to their bottom line in the business sector; this term can apply to both public services and companies (Hanan and Karp, 2019). Customer satisfaction is a skill that demands listening to your customers and responding to their needs (Zhang et al., 2013). Customer satisfaction can only be attained by operating firms that prioritize the demands of the client over those of the management team (Herrmann et al., 2022).

It consistently outperforms client expectations by giving them more than they requested (Matzler and Hinterhuber, 2018). Small businesses gain from greater customer loyalty, increased cash flow, and decreased operating costs when their consumers are satisfied (Gosling et al., 2015). Individual expectations have a significant impact on consumer satisfaction levels, making this measurement quite arbitrary. According to some definitions, a consumer's satisfaction with a service or good is determined by whether their expectations are met or exceeded. Some industry professionals advise businesses to "focus on a goal that is more directly tied to consumer equity rather than monitoring customer satisfaction (Nick, 2014). With physical goods becoming more standardized and best practices becoming more widely adopted, firms can gain a competitive edge by continuously innovating, better targeting their clients, and providing more services to their customers. These methods do not apply to customer relationships with whom you have an arm's length commercial relationship. A company's ability to innovate while still offering top-notch customer service is directly related to how successful it will be in the long run.



Client contacts are therefore regarded as valuable assets that require the same care as physical ones. When it comes to valuing intellectual capital, fresh and inventive approaches frequently acknowledge the significance of customer capital, as measured by sales, satisfaction, and reputation. These techniques essentially discriminate between three different types of consumers: new customers, reference clients, and prior clients. Regardless of how intellectual capital is measured, the literature has advised a range of industry-specific techniques for gauging consumer satisfaction (McColl-Kennedy, 2020). When physical goods and best practices become more standardized and standardized, businesses who continually innovate while also better targeting their clients and providing more services to their customers may gain a competitive edge.

### **2.3 Theoretical Review**

A theoretical review, often referred to as a literature review, is a critical examination and synthesis of existing theories, concepts, frameworks, and research studies relevant to a particular topic or research question. It involves systematically analyzing and summarizing the current state of knowledge in a specific field of study. The primary purpose of a theoretical review is to provide a comprehensive understanding of the existing literature, identify gaps, and establish a theoretical framework for guiding new research or contributing to academic discourse (Edward, 2017).

The study is supported by both the Resource-Based View Theory and Service-Dominant Logic Theory.

#### **2.3.1 Resource-Based View Theory**

The resource-based theory (RBT) is a management theory that explains how a company's unique resources and capabilities can contribute to its competitive advantage and superior performance (Barney, 1991). According to the RBT, a firm's resources must be valuable, rare, difficult to imitate, and non-substitutable to provide a

sustainable competitive advantage (Barney, 1991). In the context of supply chain management, the RBT suggests that a company's supply chain resources and capabilities can contribute significantly to its competitive advantage and customer satisfaction. For instance, effective supply chain management practices such as lean inventory management, supplier relationship management, and logistics optimization can help a firm to reduce its operational costs, improve product quality, and enhance customer satisfaction (Goyal & Gupta, 2019).

Moreover, the RBT also suggests that a firm's supply chain resources and capabilities must be difficult to imitate to provide a sustainable competitive advantage. This means that a firm must have unique resources and capabilities that cannot be easily copied or substituted by its competitors (Barney, 1991). Therefore, a company's supply chain resources and capabilities, such as its supplier network, logistics infrastructure, and inventory management systems, must be unique and difficult to imitate to provide a sustainable competitive advantage and customer satisfaction. In conclusion, the RBT suggests that a firm's supply chain resources and capabilities can contribute significantly to its competitive advantage and customer satisfaction. Therefore, firms that invest in effective supply chain management practices can improve their performance, reduce operational costs, and enhance customer satisfaction. Furthermore, a company's supply chain resources and capabilities must be unique and difficult to imitate to provide a sustainable competitive advantage.

### **2.3.2 Service-Dominant Logic (SDL) Theory**

Service-Dominant Logic (SDL) is a marketing theory that emphasizes the importance of understanding and improving service delivery as the key driver of competitive advantage (Vargo and Lusch, 2016). The central idea of SDL is that businesses should

focus on delivering value through the co-creation of services with customers, rather than just selling products or services to them (Vargo and Lusch, 2016). This is done by shifting the focus from a product-oriented approach to a customer-oriented approach, and by emphasizing the importance of relationships and collaboration between businesses and customers. In the context of the study, SDL provides a theoretical framework for understanding how supply chain management practices can improve customer satisfaction and competitive advantage by facilitating the co-creation of value between businesses and customers. By adopting an SDL approach, businesses can focus on understanding their customers' needs and preferences, and on developing supply chain management practices that enable them to co-create value with customers by providing customized services that meet their specific requirements (Vargo and Lusch, 2016).

SDL supports the study topic by providing a theoretical basis for understanding the importance of supply chain management practices in facilitating value co-creation and improving customer satisfaction and competitive advantage. By adopting an SDL approach to supply chain management, businesses can improve their understanding of customer needs and preferences and can develop supply chain management practices that enable them to deliver customized services that meet those needs and preferences. This, in turn, can improve customer satisfaction and loyalty, and can help businesses to gain a competitive advantage by differentiating themselves from their competitors through the delivery of superior service.

## **2.4 Empirical Review**

### **2.4.1 The Effect of Supply Chain Management Practices on Competitive Advantage and Customer Satisfaction.**

Tiang et al. (2020) assessed the role of supply chain management practices, supply chain traceability and logistics eco-centricity and sustainability performance among firms in Colombia. The study adopted a quantitative design and a survey approach. A sample of size of 219 respondents were issued questionnaires and were responded accordingly. The results obtained from the analysis indicate that, supply chain management practices positively influence social sustainability and environmental sustainability.

Agyeman-Mensah and Tang (2021) explored the role of green human capital in the implementation of logistics practices on social performance and financial performance among manufacturing firms in Ghana. The study adopted quantitative research. Out of the 231 respondents adopted, questionnaires were issued, and responses were equally received. The study adopted SPSS, version 20 to analyse the data gathered. The study therefore found that, logistics practices significantly and positively improve social performance and financial performance.

Bagshaw et al. (2017) carried out a study on how effective supply chain management has on on-time delivery and sales growth of firms in Belgium. The study adopted quantitative research to investigate a sample size of 289. The outcome of the analysis revealed that, effective supply chain management and distribution influences on-time delivery and sales growth respectively.

Amin and Shahwan (2020) in China assessed the relationship between supply chain management requirements and firm performance: the role of logistics management



practices. Quantitative research was adopted for the study, while a sample size of 312 was adopted. It was found that, the study partially supports the significant impact of supply chain management requirements on logistics performance.

Ghoumrassi and Tigu (2017) in Canada assessed the impact of the supply chain management in customer satisfaction in the Romanian oil and gas sector. It was found that, companies using supply chain management practices are having higher percentage of customer satisfaction than companies that do not adopt supply chain management practices.

Lai and Wong (2019) conducted a study on supply chain management and performance: Empirical evidence from Chinese manufacturing exporters. It was found that, supply chain management practices positively affect both environmental and operational performance.

Jensen et al. (2018) analysed the influence of transport management on organizational effectiveness in Germany. Findings of the study shows that, transportation management affects organizational effectiveness with a  $R^2$  value of 0.769.

Mwangangi (2019) also examined the influence of effective supply chain management on performance of manufacturing firms in Japan. The study found that, supply chain management positively impact firm performance with inventory management being the most significant predictor.

Barczak et al. (2019) assessed the role of logistics management practices on competitive advantage and performance in the German oil and gas industry. It was found that,

competitive advantage positively mediates the impact of logistics management practices and firm performance.

Takwi and Mavis (2020) in USA investigated the effect of supply chain management on enterprise performance: A Case of Gas Depot in USA. The study concludes that supply chain management has positive influence on firms in terms of cost reduction, timely delivery, reduced lead time.

Gunasekaran et al. (2018) also in USA assessed the effect of logistics and supply chain management on competitive advantage: The moderating role of information technology. The study revealed that, information technology moderates the relationship between logistics and supply chain management and competitive advantage.

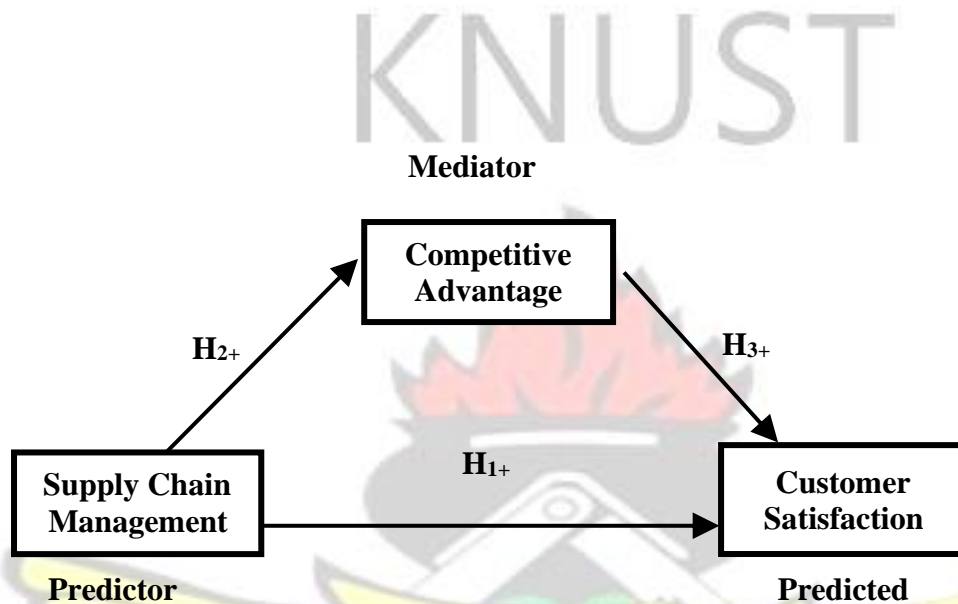
Mason (2019) assessed the relationship between logistics and supply chain management practices and financial performance in Belgium. The study adopted a descriptive statics and quantitative research design. It was therefore found that, the concept of logistics practices positively impacts financial performance.

Ellinger et al (2012) assessed the relationship between supply chain management (SCM) competency and firm performance among firms in USA. The mediating effect of competitive advantage. The study found that, competitive advantage positively mediates the relationship between supply chain management competency.

## **2.5 Conceptual Framework**

According to the study's model, supply chain management practices and customer satisfaction are directly and favourably related. The model also supports the idea that,

competitive advantage has a direct and positive correlation. In the relationship between supply chain integration and competitive advantage, the model once more supports the mediating role of competitive advantage. The direct and mediating effects between the study variables are shown in figure 2.1 below.



**Figure 2.1: Conceptual Framework**

**Source: Author's Own Construct**

### **2.5.1 Supply Chain Management Practices and Customer Satisfaction**

According to Li et al. (2006), supply chain management (SCM) practices are a collection of actions made by an organization to support efficient management of its supply chains for both the upstream and downstream. Supply Chain Management (SCM), according to the Council of Supply Chain Management Professionals (2007) is the planning and management of all operations connected to the procurement process, production, logistics management, as well as the coordination of partners in a chain. The ability of a business to build and manage specialized capabilities and competitiveness to deliver goods and services that satisfy customer needs is essential to the success of SCMP. In other words, it depends on how well a company can coordinate with other partners along the supply chain, manage their people and

resources to run their business successfully, and operate and control their production to deliver value for customer satisfaction. According to the resource-based view (RBV), pooling resources and achieving the values connected to SCs need coordination of the resources within the context of SCs (Mellewigt et al., 2007). Theoretically, the coordination approach can make clear the scope of actions, facilitate interactions, and pave the way for negotiations that will ultimately improve coordination among partners. Supporters of this approach assert that the specific rights and obligations of both parties as well as the defined procedures and guidelines provided by the formal contracts can do this (Carson et al., 2006). By clearly defining the roles and obligations of the exchange parties and the monitoring procedure, contracts also reduce the expenses associated with monitoring and coordination of transactions.

In this study, supply chain management practices are described as several management initiatives designed to produce goods and services in satisfying customer demand (Li et al., 2006; Wong et al., 2018). The theory of RBV argues that, a company's capacity to leverage information, which serves a strategic function and could become rare or difficult to replicate in the near or medium term, is one of its assets (Wong et al., 2018). According to Wong et al (2018), RBV further posits that, intangible assets are essential for generating and collaborating with customers. This enables customers to share their requirements with suppliers and produce accordingly, hence, satisfying customer demand. Based on the above studies, the study hypothesizes that,

*H<sub>1+</sub>: Supply chain management practices positively and significantly relate with customer satisfaction.*



### **2.5.2 Supply Chain Management Practices and Competitive Advantage**

Good supply chain management has been shown to increase a company's profitability and competitiveness (Vencataya et al., 2016). Customer relationship management helps businesses better understand the loyalty and contentment of their customers. Businesses benefit from long-term relation with customer because, they help them stay competitive. A company's ability to provide superior customer service increases with the adoption of CRM, increasing revenue and giving it a competitive edge (Srinivasan and Swink, 2018).

According to Chacón Vargas et al. (2018), employing a "just in time" strategy with clients boosted total customer value. One of a company's assets in the RBV is its ability to utilize information, which serves a strategic purpose and may become uncommon or challenging to replicate in the short- to medium-term. Stakeholder theory is mostly used to describe how formalization affects coordination in SCM. The primary danger to inter-firm interactions, according to stakeholder theory, is an imbalance in stakeholder interests that could sour their collaboration and undermine the effectiveness of the exchange. By coordinating their goals and interests, formalization can improve collaboration between project stakeholders. Similar to this, the trust perspective explores the importance of trust in fostering coordination and cooperation in SCs and maintains that formal agreements accomplish this goal by enhancing transparency in the exchange interactions and modifying partner views of the circumstances (Mellewigt et al., 2007). The generation and maintenance of client loyalty and value is dependent on intangible assets, which improves a company's competitive advantage (Henttonen et al., 2016). When information is shared throughout the business,

employees are better able to comprehend client expectations and wants. The study therefore hypothesizes that,

*H<sub>2+</sub>: There is a positive and significant relationship between supply chain management and competitive advantage.*

### **2.5.3 Competitive Advantage and Customer Satisfaction**

High levels of SCM practices will give businesses a significant competitive edge. When compared to its rivals, a firm with a competitive advantage typically possesses one or more of the following qualities: reduced costs, higher standards of quality and dependability, and quicker turnaround times. The entire performance of the organization will be improved by these capabilities. High levels of economic success, customer happiness and loyalty, and relationship efficacy can result from having a competitive advantage. In their target markets, brands with more devoted customers see less competition switching, which boosts sales and profitability. The TCE perspective asserts that exchanges with a high concentration of assets or complicated activities exacerbate coordination difficulties, which should be addressed by implementing appropriate governance systems (Luo, 2002).

Additionally, ambiguous situations make coordination issues worse since there is a chance that various people would perceive the same actions in different ways, which could prevent integrated reactions to changing conditions (Carson et al., 2006). A firm that produces high-quality goods can charge premium prices to boost sales and return on investment. Being the first on the market and having quick product innovation might result in an organization having a bigger market share and sales volume. Consequently, it is possible to suggest that, competitive advantage and customer satisfaction are positively related. Ultimately, the study hypothesizes that;

*H<sub>3+</sub>: There is a positive and significant relationship between competitive advantage and customer satisfaction.*

#### **2.5.4 Mediation Effect of Competitive Advantage**

According to the resource-based view (RBV), coordination of the resources within the context of SCs is necessary for pooling resources and accomplishing the values associated to SCs (Mellewigt et al., 2007). Theoretically, the coordination strategy can clarify the range of actions, encourage communication, and open the door to negotiations that will ultimately lead to better partner cooperation. The practices of supply chain management are defined in this study as several management initiatives created to generate goods and services in order to meet consumer demand (Li et al., 2006; Wong et al., 2018). The RBV theory contends that one of a company's advantages is its ability to leverage knowledge, which has a strategic purpose and may soon become uncommon or difficult to duplicate (Wong et al., 2018). RBV further proposes that, intangible assets are necessary for attracting and cooperating with customers, according to Wong et al. (2018). Li et al. (2006) indicates that, higher levels of SCM practice can lead to enhanced competitive advantage and improved organizational performance. Also, competitive advantage can have a direct, positive impact on organizational performance. hence, competitive advantage is a positive mediator between supply chain management practices, firm performance, and customer satisfaction. Based on the above studies, the study hypothesizes that,

*H<sub>4+</sub>: Competitive advantage positively and significantly mediates the relationship between supply chain management and customer satisfaction.*

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Chapter three presents the techniques, methods, approaches used to gather and analyse data. It describes. It consists of the study area, research design, sources of data, target population, sample size determination, and sampling technique, data collection instrument, ethical consideration and data processing and analysis.

#### **3.2 Research Design**

According to Saunders et al. (2007), research can be categorized into three types: exploratory, descriptive, and explanatory, based on the study's objective. An exploratory study aims to uncover new insights, ask questions, and evaluate phenomena from a fresh perspective. On the other hand, a descriptive study focuses on describing the extent of a phenomenon within a study. Lastly, explanatory research establishes causal links between variables. In the context of this study, which investigates the relationships between supply chain management practices, competitive advantage, and customer satisfaction, it can be classified as exploratory.

Research can be classed as either exploratory, descriptive, or explanatory depending on the objective of the study (Saunders et al., 2007). Saunders et al. (2007) posits that, an exploratory study is concerned about finding out what is happening, seeking new insights, asking questions, and evaluating occurrences in a fresh light. Descriptive study on the hand concerned about the extent and nature of a study variable. In other words, descriptive study describes the extent of a phenomenon in a study (Cooper and Schindler, 2014). Explanatory research is defined as studies that establish causal links between variables (Zikmund et al., 2010). The goal of causal study is to prove that when



we do one thing, another will inevitably happen. Since the study aims to examine the correlations between supply chain management practices on competitive advantage and customer satisfaction, this study can be characterized as explanatory in nature.

A research approach explains the typical methodology used in social science research. Quantitative, qualitative, or a mixed are the types of a research approach. Qualitative research is a study that targets business goals using techniques that allow the researcher to provide in-depth interpretations of events without relying on numerical measurement (Zikmund et al., 2010). Qualitative research, as defined by Saunders et al. (2007) is any investigation done in a natural setting that incorporates the process of gaining a thorough understanding of the topic of interest. It is done when the study issue demands investigating concepts and putting these connections, and explanations into a theoretical framework. A quantitative study, on the other hand, uses numerical measurement and analysis techniques to address research objectives through empirical evaluations. Based on the study's goals, the researcher used a quantitative approach to develop numerical constructs that precisely measured the variables.

### **3.5 Population of the Study**

A population is the whole collection of observations from which a sample is selected (Singh, 2006). The target population, according to Cooper and Schindler (2014) refer to as the research population made up of all the people, events, or records that contain the information the researcher needs to address the study's objectives. The manufacturing and service firms in Greater Accra region were considered the study's population.

### **3.6 Sample Size and Sampling Technique**

The researcher uses a high sample size because it was challenging to determine the exact number of manufacturing and service firms in Accra. The sample is therefore more representative, allowing for generalization of the findings. As a result of the researcher's inability to create a sampling frame for the study due to a lack of knowledge on the number of participating firms, the study once again uses a non-probability sampling technique. Convenience sampling is utilized to choose the respondents after each industry has been separated into key businesses. Before deciding on a quota of 100 respondents, made up of 40 and 60 businesses from manufacturing and service organizations, respectively, the researcher debated severally regarding the sample's sufficiency and representativeness.

### **3.7 Measurement Instrument**

After conducting a review of the relevant literature, the measurement tool was created. The study's scales were regularly improved through brainstorming sessions, discussions, the supervisor's input, and corrections. The items in the questionnaire were improved with the help of the pilot study. The study's independent variable, the supply chain management practices, is conceptualized as having multiple dimensions and being made up of strategic supplier partnership, customer relationship management, level of information sharing and quantity information. The respondents were asked to rate how much they agree or disagree with each statement on a 7-point Likert scale, where 1 = strongly disagree, 2 = slightly disagree, 3 = disagree, 4 = indifferent, 5 = slightly agree, 6 = agree and 7 = strongly agree.

To provide a description of the respondents, the questionnaire sought information on: firm type, firm age, gender of respondents, age of respondents, working experience and position of respondents. Details on the constructs employed in the study are included

in the table below, along with the number of sub-constructs if any, the number of items used to measure the construct, and the literary sources from which the items were culled.

**Table 3.1: Measurement Constructs**

Construct	Item/Measures	Source
<b>Supply Chain Management Practices</b>	<b>Strategic Supplier Partnership</b>	<b>Li et al. (2017)</b>
	1. We consider quality as our number one criterion in selecting suppliers	
	2. We regularly solve problems jointly with our suppliers	
	3. We have helped our suppliers to improve their product quality	
	4. We have continuous improvement programs that include our key suppliers.	
	5. We include our key suppliers in our planning and goal-setting activities	
	6. We actively involve our key suppliers in new product development processes	
	<b>Customer Relationship</b>	
	1. We frequently interact with customers to set reliability, responsiveness and other standards	
	2. We frequently measure and evaluate customer satisfaction	
	3. We frequently determine future customer expectations	
	4. We facilitate customers' ability to seek assistance from us	
	5. We periodically evaluate the importance of our relationship with our customers	
	6. Employing qualified staff facilitates the implementation of e-procurement	
	<b>Information Sharing</b>	
	1. We inform trading partners in advance of changing needs	
	2. Our trading partners share proprietary information with us	
	3. Our trading partners keep us fully informed about issues that affect our business.	
	4. Our trading partners share business knowledge of core business processes with us	
	5. We and our trading partners exchange information that helps establishment of business planning	
	6. We and our trading partners keep each other informed about events or changes that may affect other partners	

	7. Information exchange between our trading partners and us is reliable	
<b>Construct</b>	<b>Measures</b>	<b>Sources</b>
<b>Competitive Advantage</b>	<b>Cost/Price</b>	<b>Li et al. (2017)</b>
	1. We offer competitive prices.	
	2. We are able to offer prices as low or lower than competitors	
	<b>Quality</b>	
	1. We are able to compete based on quality	
	2. We offer products that are highly reliable.	
	3. We offer products that are very durable.	
	4. We offer high quality products to our customer	
	<b>Dependability</b>	
	1. We deliver the kind of products needed.	
	2. We deliver customer order on time.	
	3. We provide dependable delivery	
	<b>Innovation</b>	
	1. We provide customized products.	
	2. We alter our product offerings to meet client needs	
	3. We respond well to customer demand for new features	
<b>Construct</b>	<b>Measures</b>	<b>Source</b>
<b>Customer Satisfaction</b>	1. Our customers are satisfied with our product quality	<b>Ellinger et al. (2012)</b>
	2. Our customers are satisfied with the timely delivery of goods and services	
	3. Our customers are satisfied with our service delivery	
	4. Customer complaints have reduced to minimum	
	5. Our customers' loyalty has improved over time	
	6. Our firm provides appropriate platform for aggrieved customers to seek redress.	

### 3.8 Data Collection Method

Data collection methods refer to the techniques and procedures used to gather data for a research study (Yin, 2003). The choice of data collection method depends on the research objectives, the type of data required, and the resources available. There are different methods of data collection, however, the current study adopted the survey questionnaires to collect data from respondents.



### **3.9 Data Analysis**

Saunders et al. (2017) defines data analysis as the ability of dissecting data to reveal the nature of its component elements and their relationships. The researcher adopts the SmartPLS4 version 23 to modify, edit, code, and analyze the data quantitatively. Again, both the descriptive and inferential statistics were deployed accordingly. The descriptive statistics were used to present the characteristics of the data and also the extent of the study variables, while structural equation modelling (SEM) was used to test for both the direct and the mediation effects of the study variables.

### **3.10 Validity and Reliability**

While reliability refers to the accuracy and precision of a measuring method, the validity of a study is the extent to which a test assesses what is intended to measure (Cooper and Schindler, 2012). To ensure that the results are accurate, the measurement's validity and reliability are adequately examined. In addition to designing questions based on a literature review, the questionnaires were pilot tested to determine their potential efficacy. Each research construct's internal consistency was assessed using Cronbach's alpha statistical approach.

### **3.11 Ethical Considerations**

Ethics are a factor in all scientific projects. Many ethical issues were taken into consideration, including informed consent, anonymity and confidentiality, and sympathetic neutrality. The researcher makes sure that, neither the respondents' names nor phone numbers were on the survey questionnaire. In addition, as participation in research studies must be voluntary and the researcher cannot force participants in a research process, approval from management and staff of the study-related company was secured before the study commenced.

## **CHAPTER FOUR**

### **DATA PRESENTATION, ANALYSIS AND DISCUSSION**

#### **4.1 Introduction**

The study presented the data analysis, implications, and discussion of results. The study is presented in seven sections. The first section is the data response rate. It considered the percentage of responses that were successfully returned and those that were not returned. Secondly, the demographic characteristics of respondents were also presented in section two. Section three presented the reliability and validity of data. Under this section, the Cronbach Alpha and the composite reliability were used to test the reliability the variables, the Average Variance Extracted (AVE), discriminant validity, and confirmatory factor analysis (CFA) were also used to test the validity of the data. The fourth section presented the descriptive statistics results of the variables. Structural equation modelling (SEM) was presented in section five. Section six also presented hypotheses confirmation while section seven presented the discussion of findings. It could be noted that, the data was analysed using SmartPLS4, version 23.

#### **4.1 Data Response Rate**

The researchers administered 100 questionnaires to senior and line managers in procurement and supply chain departments of both manufacturing and service firms in Ghana, and all 100 responses were successfully returned, representing a response rate of 100%. Mugenda and Mugenda (2013) consider a response rate of 50% to be reasonable, 60% to be good/acceptable, and more than 70% to be very high. As the response rate of this study is within the acceptable range, it is genuine and acceptable.

## 4.2 Demographics of the Respondents and Background of Firms

This section provides an overview of the demographic characteristics of the sample respondents, including their gender, age, work experience, educational background, managerial level, and position. The characteristics of respondents can influence their responses to the administered questionnaires, making it essential for researchers to examine these traits and assess their impact on the study. Refer to Table 4.1 below

**Table 4.1: Demographic of Responses**

Variables		Frequency	Percentage %
Gender	Male	68	68
	Female	32	32
Age	20-30years	21	21
	31-40years	32	32
	41-50 years	37	37
	Above 50years	10	10
Work Experience	0-5years	24	24
	6-10years	36	36
	Over 10years	40	40
Educational Level	HND/Degree	37	37
	Masters	34	34
	Professional	19	19
	Others	10	10
Managerial Level	Senior Management	54	54
	Middle Management	31	31
	Supervisory	15	15
Position	Supply Chain	54	54
	Manager	38	38
	Operations Manager	8	8
	Other		
Firm Type		59	59
	Manufacturing	41	41
	Service		
<b>Total</b>		<b>100</b>	<b>100</b>

Table 4.1 shows the demographic characteristics of the sample respondents, consisting of 100 senior and line managers in procurement and supply chain departments of both manufacturing and service firms in Ghana. The gender distribution of the respondents

indicates that 68% were male, while 32% were female. In terms of age, 21% were between 20-30 years old, 32% were between 31-40 years old, 37% were between 41-50 years old, and 10% were over 50 years old.

The majority of the respondents had more than 10 years of work experience (40%), followed by 6-10 years of experience (36%), and 0-5 years of experience (24%). In terms of educational level, most of the respondents held an HND or a degree (37%), followed by a master's degree (34%), and professional certification (19%). Others made up 10% of the respondents.

Regarding managerial level, 54% were in senior management, 31% were in middle management, and 15% were in a supervisory role. In terms of position, 54% were supply chain managers, 38% were operations managers, and 8% held other positions. The firm type distribution shows that 59% of the respondents were from service firms, while 41% were from manufacturing firms.

The demographic characteristics of the respondents are important to consider in interpreting the results of the study. The gender distribution suggests that there may be a gender bias in the responses. The work experience and educational level of the respondents indicate that they were experienced and educated enough to provide informed responses. The managerial level and position of the respondents suggest that the study focused on the perspectives of senior and middle managers who are involved in procurement and supply chain management. The firm type distribution indicates that the study covered both service and manufacturing sectors, allowing for a diverse range of perspectives.



### 4.3 Reliability and Validity Test

To assess the consistency and accuracy of the variables in measuring the constructs, reliability and validity analyses were conducted. Cronbach's alpha value and composite reliability were used to measure the reliability of the constructs, indicating the degree of consistency among the measurement items. According to Hair et al. (2013), a threshold of 0.7 is generally considered acceptable for measuring variables. In this study, 19 measurement items were used to evaluate supply chain management practices, 12 items were used to measure competitive advantage, and 6 items were used to measure customer satisfaction. The results of the reliability analysis are presented in Table 4.2 below.

**Table 4.2 Cronbach Alpha, Composite Reliability, and Average Variance Extracted**

Constructs	Number of items	Cronbach Alpha (CA)	Composite Reliability (CR)	AVE
Supply Chain Management Practices	19	0.969	0.971	0.642
Competitive Advantage	12	0.926	0.936	0.551
Customer Satisfaction	6	0.945	0.957	0.786
<b>Total</b>	<b>37</b>			

Source: Field data, 2022

Table 4.2 presents the results of the reliability analysis of the constructs used in the study. The constructs are supply chain management practices, competitive advantage, and customer satisfaction. The number of items used for each construct is also provided. The Cronbach's alpha value for supply chain management practices is 0.969, indicating a high level of internal consistency among the measurement items. The composite reliability for this construct is 0.971, suggesting that the measurement items

are highly reliable. The average variance extracted (AVE) for supply chain management practices is 0.642, indicating that 64.2% of the variance in the construct is explained by the measurement items.

The Cronbach's alpha value for competitive advantage is 0.926, indicating a high level of internal consistency among the measurement items. The composite reliability for this construct is 0.936, suggesting that the measurement items are highly reliable. The AVE for competitive advantage is 0.551, indicating that 55.1% of the variance in the construct is explained by the measurement items.

The Cronbach's alpha value for customer satisfaction is 0.945, indicating a high level of internal consistency among the measurement items. The composite reliability for this construct is 0.957, suggesting that the measurement items are highly reliable. The AVE for customer satisfaction is 0.786, indicating that 78.6% of the variance in the construct is explained by the measurement items.

Overall, the high Cronbach's alpha values and composite reliabilities for all three constructs indicate that the measurement items are highly consistent and reliable in measuring the constructs. The AVE values are also acceptable, indicating that the measurement items adequately capture the constructs they are designed to measure. Therefore, the results suggest that the measures used in this study are reliable and valid for measuring the constructs of supply chain management practices, competitive advantage, and customer satisfaction.

The discriminant validity was analysed using the Fornell-Larcker criterion. The correlation of each item with itself should be greater than the correlation with all other variables.

**Table 4.3: Fornell - Larcker Criterion**

<b>Constructs</b>	<b>SCMP</b>	<b>CA</b>	<b>CS</b>
<b>Supply Chain Management Practices (SCMP)</b>	<b>0.880</b>		
<b>Competitive Advantage (CA)</b>	0.801	<b>0.742</b>	
<b>Customer Satisfaction (CS)</b>	0.673	0.627	<b>0.887</b>

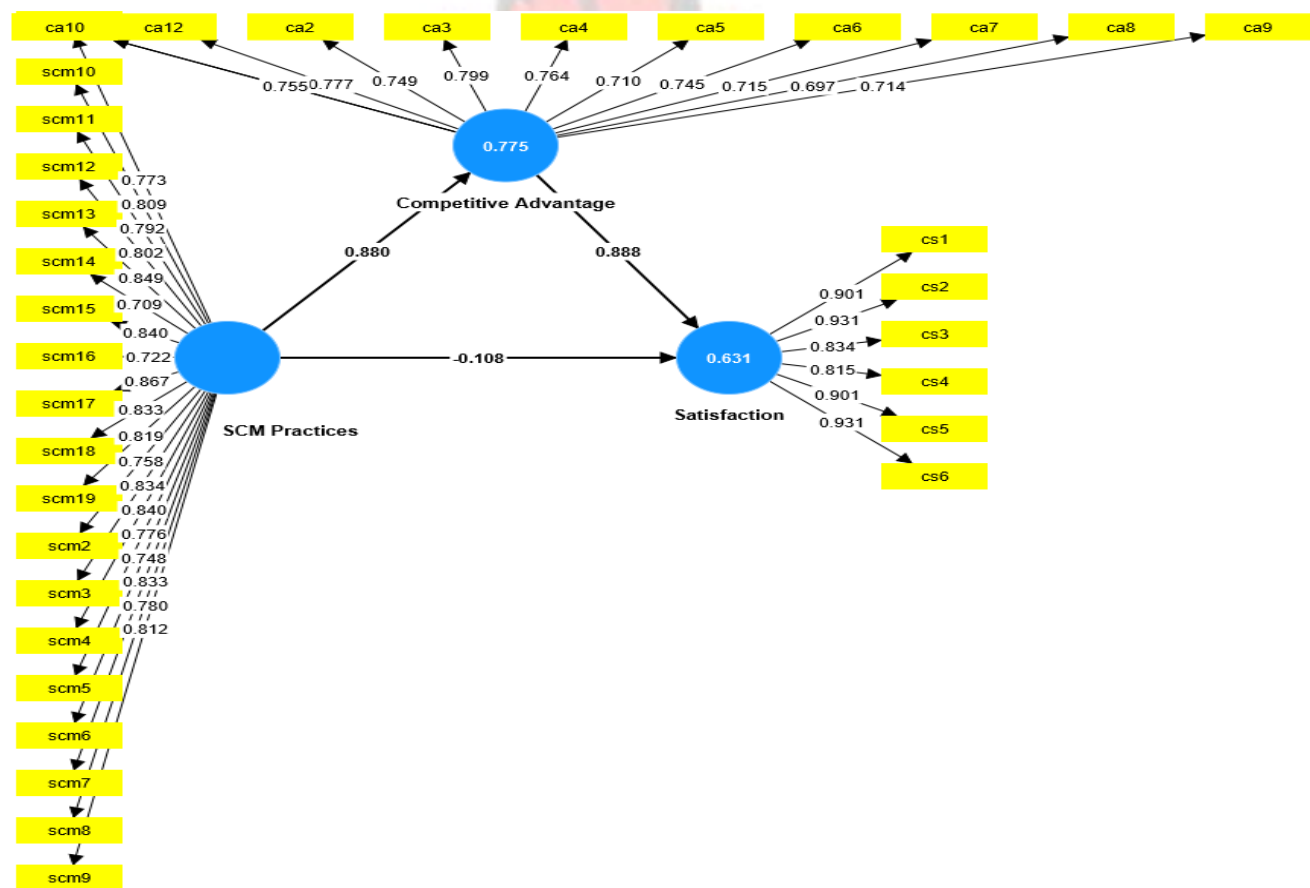
**Source: Field data, 2022**

Concerning the discriminant validity, Fornell-Larcker Criterion was used. Whereas convergent validity measures how accurately the latent variables measure the main variable, the discriminant validity measures ensure the latent factors do not measure the other variables compared to its own latent variables. With the Fornell-Larcker criterion, the square root of each variable's AVE must correlate with its self stronger than the correlations with other latent variables.

As shown in Table 4.3 above, Supply Chain Management Practices has a correlation coefficient of 0.880 with itself, and had a correlation of 0.801, and 0.673 with Competitive Advantage and Customer Satisfaction respectively. Also, Competitive Advantage had a correlation coefficient of 0.742 with itself and had a correlation of 0.627 with Customer Satisfaction. Finally, Customer Satisfaction had a correlation coefficient of 0.887 with itself. Thus, each of the variables had a higher correlation with itself than the correlation with other variables, hence, each variable is valid.

### 4.3.1 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is a statistical technique used to verify the factor structure of a set of observed variables. In assessing the validity of the data obtained, the study uses confirmatory factor analysis to determine the factor loadings of each item to its latent variable. Each item is expected to load above 0.50 to be valid. Furthermore, in measuring the convergent validity, the average variance extracted value (AVE) was used and the values are expected to be greater than the acceptable value of 0.5 (Hair et al., 2013).



**Figure 4.1: Confirmatory Factor Analysis**

It could be seen from Figure 4.1 above that, all measurement items for supply chain management practices, competitive advantage and customer satisfaction loaded above 0.5, therefore valid for the analysis.



#### 4.4 Descriptive Statistics

The score of each individual variable used to measure the study constructs are reported using descriptive statistics. A Likert scale of 1-7. Note: (1-1.99 = strongly disagree, 2.0-2.49 = disagree, 2.50-2.99 = somehow disagree, 3.0-3.99 = not sure, 4.0-4.99 = somehow agree, 5.0-5.99 = agree and 6.0-7.0 = strongly agree) was used to measure the extent and nature of the study constructs. Accordingly, any Mean score higher than 4.0 is considered acceptable.

##### 4.4.1 Supply Chain Management Practices

In this study, supply chain management practices are described as several management initiatives designed to enhance the performance of the supply chain (Li et al., 2017; Wong et al., 2018). To quantify and conceptualize supply chain management practices, the current study adopts three (3) key sub-variables, namely strategic supplier partnerships, customer relationships, and information sharing. Here, nineteen (19) items were used to measure the extent and nature of supply chain management practices. The result is presented in the table 4.4 below.

The descriptive statistics results for supply chain management practices are presented in Table 4.4 below. A composite mean score of 5.15 ( $M > 4$ ) and a standard deviation of 1.621 indicating that, the average firm that participated in the study scores higher. This suggests that, the extent of adoption of supply chain management practices is higher.

**Table 4.4: Descriptive Statistics Results for Supply Chain Management Practices**

	Measures	Mean	SD
1	We consider quality as our number one criterion in selecting suppliers	5.59	1.583
2	We regularly solve problems jointly with our suppliers	5.05	1.533
3	We have helped our suppliers to improve their product quality	5.14	1.645
4	We have continuous improvement programs that include our key suppliers.	5.07	1.578

5	We include our key suppliers in our planning and goal-setting activities	4.93	1.707
6	We actively involve our key suppliers in new product development processes	5.09	1.627
7	We frequently interact with customers to set reliability, responsiveness and other standards	5.16	1.830
8	We frequently measure and evaluate customer satisfaction	5.35	1.572
9	We frequently determine future customer expectations	5.03	1.560
10	We facilitate customers' ability to seek assistance from us	5.15	1.648
11	We periodically evaluate the importance of our relationship with our customers	5.28	1.615
12	Employing qualified staff facilitates the implementation of e-procurement	5.31	1.680
13	We inform trading partners in advance of changing needs	4.95	1.833
14	Our trading partners share proprietary information with us	4.95	1.877
15	Our trading partners keep us fully informed about issues that affect our business.	5.14	1.735
16	Our trading partners share business knowledge of core business processes with us	5.16	1.656
17	We and our trading partners exchange information that helps establishment of business planning	5.25	1.684
18	We and our trading partners keep each other informed about events or changes that may affect other partners	5.24	1.712
19	Information exchange between our trading partners and us is reliable	5.15	1.598
<b>Composite Score</b>		<b>5.15</b>	<b>1.621</b>

**Source: Field data, 2022**

#### **4.4.2 Competitive Advantage**

A firm has a competitive edge, according to Barney (2012), when its actions in a market or industry generate economic value and few other businesses are doing the same. Additionally, Tracey et al. (2019) contend that a company's competitive advantage is composed of a variety of competencies that set it apart from its rivals (Thatte, 2017). Twelve (12) measurement items were used to operationalize firm's competitive advantage. The statistical results are presented in the table 4.5 below.

**Table 4.5: Descriptive Statistics Results for Competitive Advantage**

	<b>Item</b>	<b>Mean</b>	<b>SD</b>
ca1	We offer competitive prices.	5.30	1.567
ca2	We are able to offer prices as low or lower than competitors	5.11	1.556
ca3	We are able to compete based on quality	5.43	1.472
ca4	We offer products that are highly reliable.	5.28	1.471
ca5	We offer high quality	5.43	1.373

ca6	We offer products that are very durable.	5.35	1.445
ca7	We deliver the kind of products needed.	5.66	1.191
ca8	We deliver the kind of products needed.	5.33	1.422
ca9	We deliver customer order on time.	5.16	1.562
ca10	We provide dependable delivery	5.09	1.498
ca11	We provide customized products.	5.52	1.410
ca12	We respond well to customer demand for new features	5.45	1.520
<b>Composite Score</b>		<b>5.34</b>	<b>1.391</b>

**Source: Field data, 2022**

The descriptive statistics results for competitive advantage are presented in Table 4.5 above. According to the table, the extent of competitive advantage amongst both the manufacturing and service firms operating within the Greater Accra region is high. Given a composite mean of 5.34 and standard deviation of 1.391 on a 7-point Likert scale.

#### **4.4.3 Customer Satisfaction**

Customer satisfaction can only be attained by operating firms that prioritize the demands of the client over those of the management team (Herrmann et al., 2022). It consistently outperforms client expectations by giving them more than they requested (Matzler and Hinterhuber, 2018). Small businesses gain from greater customer loyalty, increased cash flow, and decreased operating costs when their consumers are satisfied (Gosling et al., 2015). On a 7-point Likert scale, 6 items were used to measure the extent of firm customer satisfaction. The results are therefore presented in table 4.6 below.

**Table 4.6: Descriptive Statistics Results for Customer Satisfaction**

<b>Item</b>		<b>Mean</b>	<b>SD</b>
cs1	Our customers are satisfied with our product quality	5.35	1.445
cs2	Our customers are satisfied with the timely delivery of goods and services	5.34	1.416
cs3	Our customers are satisfied with our service delivery	5.35	1.395
cs4	Customer complaints have reduced to minimum	5.64	1.418
cs5	Our customers' loyalty has improved over time	5.35	1.445
cs6	Our firm provides appropriate platform for aggrieved customers to seek redress.	5.34	1.416
<b>Composite Score</b>		<b>5.39</b>	<b>1.423</b>

**Source: Field data, 2022**

Table 4.6 shows the descriptive statistics results for customer satisfaction. According to the table, the average firm that participated in the study agrees that, the level and extent of customer satisfaction is high, given a composite mean score of 5.39 and a standard deviation of 1.423.

#### 4.5 Inferential Statistics

This section analyses the relationship between the studies variables (customer satisfaction, competitive advantage and supply chain management practices).

##### 4.5.1 Correlation Analysis

The correlation results show that, all the variables in the hypothesised paths positively and significantly correlated among themselves with all p values < 0.01. Supply Chain Management Practices correlate positively and significantly with Competitive Advantage ( $r = .879$ ,  $p < .01$ ); and Customer Satisfaction ( $r = .664$ ,  $p < .01$ ). Also, Competitive Advantage correlates positively and significantly with Customer Satisfaction ( $r = .780$ ,  $p < .01$ ). In conclusion, it could be seen that, all the variables correlate positively and significantly with one another.

**Table 4.6: Correlation Results**

		SCMP	CA	CS
SCMP	Pearson Correlation	1		
CA	Pearson Correlation	.879**	1	
CS	Pearson Correlation	.664**	.780**	1

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

**Note:** N =100; SCMP = Supply Chain Management Practices; CA = Competitive Advantage; CS = Customer Satisfaction

##### 4.5.2 Regression Analyses

Regression analysis is an important statistical method that serves several purposes across various disciplines.



#### 4.5.2.1 Relationship between Supply Chain Management and Customer

##### Satisfaction

To determine how supply chain management practices affect customer satisfaction, a regression model was run with supply chain management practices as the independent variable while customer satisfaction as the dependent variable. The results of the regression model are presented in tables 4.7, 4.8 and 4.9 below.

**Table 4.7: Regression Model for Objective 1**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.664 <sup>a</sup>	.441	.435	.94678	.441	77.372	1	98	.0605

a. Predictors: (Constant), SCMP

Table 4.7 shows the regression model of the effect of supply chain management practices on customer satisfaction. It was found from the table that, supply chain management practices account for 44.1% in customer satisfaction, given an  $R^2$  of 0.4

**Table 4.8: ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	69.356	1	69.356	77.372	.000 <sup>b</sup>
	Residual	87.847	98	.896		
	Total	157.203	99			

a. Dependent Variable: CS

b. Predictors: (Constant), SCMP

The regression output suggests that, the model is statistically significant ( $p < 0.01$ ). From the results, it was found that, supply chain management practices explain 44.1 percent of the variation in customer satisfaction ( $R^2 = 0.441$ ). This suggests that, there is a little impact of supply chain management practices on customer satisfaction of firms used in this study. Even though most of the firms adopt supply chain management practices as indicated in the descriptive statistics results, however, it has not led to an increased level of customer satisfaction.

**Table 4.9: Coefficient**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.160	.380		5.686	.000
	SCMP	.627	.071	.664	8.796	.605

a. Dependent Variable: CS

Given the path coefficient values of  $\beta = 0.627$ ,  $t = 8.796$ ,  $p < .605$  indicates that, for every unit of supply chain management practices implemented, a proportionate increase in customer satisfaction (0.441) is achieved. However, the study showed an insignificant support for H1.

#### 4.5.2.2 Relationship Supply Chain Management Practices and Competitive

##### Advantage

This section sought to determine how supply chain management practices relate with firm competitive advantage. A regression model was therefore run with supply chain management practices as the independent variable and competitive advantage as the dependent variable. The results of the regression model are presented in tables 4.10, 4.11 and 4.12 below.

**Table 4.10: Regression Model for Objective 2**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.879 <sup>a</sup>	.772	.770	.51887	.772	332.755	1	98	.000

a. Predictors: (Constant), SCMP

Table 4.10 shows the regression model of the relationship between supply chain management practices on competitive advantage. It was found that, supply chain management practices account for 77.2% of competitive advantage, given an  $R^2$  of 0.772.

**Table 4.11: ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	89.587	1	89.587	332.755	.000 <sup>b</sup>
	Residual	26.384	98	.269		
	Total	115.971	99			

a. Dependent Variable: CA

b. Predictors: (Constant), SCMP

The regression output suggests that, the model is statistically significant ( $p < 0.01$ ).

From the results, it was found that, supply chain management practices explain 77.2 percent of the variation in competitive advantage ( $R^2 = 0.772$ ). This suggests that, there is a great impact of supply chain management practices on the competitive advantage of firms used in this study. Due to the increased level of implementation of supply chain management practices, firms are able to achieve an advantage over rival firms that do not implement supply chain management practices.

**Table 4.12: Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.665	.208		8.001	.000
	SCMP	.713	.039	.879	18.242	.000

a. Dependent Variable: CA

Given the path coefficient values of  $\beta = 0.713$ ,  $t = 18.242$ ,  $p < .01$  indicates that, for every unit of supply chain management practices implemented, a proportionate increase in competitive advantage (0.713) is achieved. This therefore lend supports for hypothesis 2 (H2), which stated that, supply chain management practices positively and significantly relate with competitive advantage.

#### 4.5.2.3 Competitive Advantage and Customer Satisfaction

This section sought to determine how competitive advantage affects customer satisfaction. A regression model was therefore run with competitive advantage being

the independent variable while customer satisfaction as the dependent variable. The results of the regression model are presented in tables 4.13, 4.14 and 4.15 below.

**Table 4.13: Regression Model for Objective 3**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics F Change	df1	df2	Sig. F Change
1	.780 <sup>a</sup>	.609	.605	.79223	.609	152.470	1	98	.000

a. Predictors: (Constant), CA

Table 4.13 shows the regression model of the relationship between competitive advantage and customer satisfaction. This suggests that, competitive advantage accounts for .609 percent of customer satisfaction, with an  $R^2 = 0.609$ .

**Table 4.14: ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	95.695	1	95.695	152.470	.000 <sup>b</sup>
	Residual	61.508	98	.628		
	Total	157.203	99			

a. Dependent Variable: CS

b. Predictors: (Constant), CA

The regression output indicates that, the model is statistically significant ( $p < 0.01$ ). The results found that, competitive advantage explain 60.9 percent of the variation in customer satisfaction ( $R^2 = 0.609$ ). This indicates that, there is a great impact of competitive advantage on customer satisfaction for firms selected in this study. Due to the increased the level of competitive advantage, a higher level of customer satisfaction is achieved.

**Table 4.15: Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig.
		B	Std. Error			
1	(Constant)	.542	.401		1.352	.180
	CA	.908	.074	.780	12.348	.000



a. Dependent Variable: CS

Given the path coefficient values of  $\beta = 0.908$ ,  $t = 12.348$ ,  $p < .01$  indicates that, for every unit of competitive advantage achieved, a higher level of customer satisfaction (0.908) is realized. This therefore lends support for hypothesis 3 (H3), which stated that, competitive advantage positively and significantly relates with customer satisfaction.

#### 4.5.2.4 Mediation Effect of Competitive Advantage

This study hypothesized that, competitive advantage played a potential mediating role in the relationship supply chain management practices and customer satisfaction. Up to now in the study, it has been found that, supply chain management practices have effect on customer satisfaction. Again, supply chain management practices have an effect on competitive advantage, and in the same vein, competitive advantage affects customer satisfaction. Nevertheless, there is the need for testing the mediation effect of competitive advantage.

**Table 4.16: Regression Output for Objective 4**

Path	Coefficient	R <sup>2</sup>	t	Sig.
1. SCMP---->CS	-0.108	0.441	0.517	0.605
2. SCMP---->CA	0.880	0.772	41.084	0.000
3 CA----->CS	0.888	0.609	5.326	0.000
4. SCMP--->CA--->CS	0.781	0.775	5.318	0.000

**Source: Field data, 2022 Note: SCMP = Supply Chain Management Practices; CA = Competitive Advantage; CS = Customer Satisfaction**

Lastly, the study sought to examine the mediating effect of green organizational climate. The SEM output shows a positive and significant mediating effect of competitive advantage in the relationship between supply chain management practices and customer satisfaction, given the path coefficient results  $\beta = 0.781$ ,  $t = 5.318$ ,  $p < 0.001$ . This indicates that, the mediation effect of competitive advantage positively and

significantly mediates between SCMP and CS. This therefore lends great support for H4.

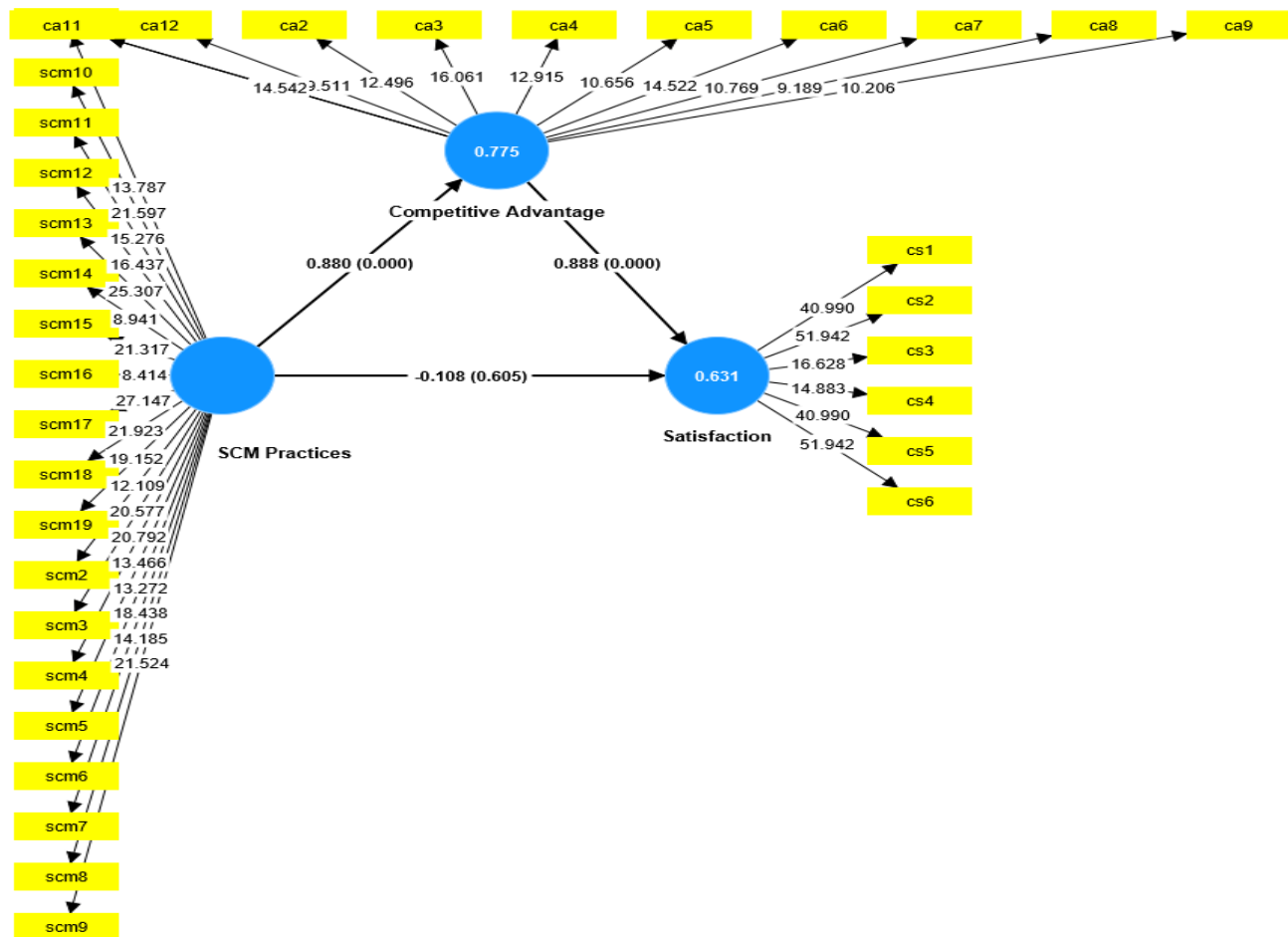


Figure 4.2: Mediation Path Analysis

#### 4.6 Hypotheses Confirmation

From the research analysis, four (4) hypotheses were developed for this study. It could be found that, both the direct and the mediation effect of the variables positive and significant, hence supported. The summary of the hypotheses' confirmation are thereby presented in table 4.17 below.

Table 4.17: Hypotheses' Confirmation

Hypothesis	Path	t-value	Coefficient (p-value)	Decision
H1	SCMP---->CS	0.517	-0.108 (p = 0.605)	Unsupported
H2	SCMP---->CA	18.242	0.880 (p < 0.001)	Supported
H3	CA----->CS	12.348	0.888 (p < 0.01)	Supported

<b>H4</b>	SCMP--->CA--- >CS	5.318	0.781 ( $P < 0.01$ )	<b>Supported</b>
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**Source: Field data, 2022** Note: SCMP = Supply Chain Management Practices; CA = Competitive Advantage; CS = Customer Satisfaction

#### **4.7 Discussions of Results**

The findings of this investigation are addressed in the context of the examined literature in this study. In accordance with the study's stated aims, a detailed discussion of the findings follows.

##### **4.7.1 Supply Chain Management Practices and Customer Satisfaction**

Based on the information provided, the study aimed to investigate the impact of supply chain management practices on customer satisfaction. The results showed that supply chain management practices account for 44.1% in customer satisfaction, given an  $R^2$  of 0.441, given a  $\beta = 0.627$  and  $t = 0.517$ . However, the statistical significance was only achieved at  $p = 0.0605$ , which is not considered statistically significant at the traditional level of  $p < 0.05$ . The theory of resource-based view (RBV) argues that a company's ability to leverage information is one of its strategic assets to improve customer satisfaction. Saeed et al. (2015) concurs that, firms are able to satisfy customer need if supply chain activities are coordinated and integrated. In support of the initial claims, Saeed et al. (2015) further posits that, the higher the adoption of supply chain management practices, the higher the level of customer satisfaction. Additionally, Wong et al. (2018) also agreed that, intangible assets are crucial for generating and collaborating with customers, enabling them to share their requirements with suppliers and produce accordingly, hence satisfying customer demand. The findings of the study seem to contradict the existing literature, hence, H1 is rejected.

However, other studies showed that, supply chain management practices if not properly implemented leads to customers been unsatisfied (Wu et al., 2015; Li et al., 2005). From the analysis, it could be argued that, poor communication between the different entities in the supply chain can lead to delays, mistakes, and other issues which negatively impact customer satisfaction. Overall, it is important for companies to carefully manage their supply chains to ensure that they are delivering high-quality products to customers in a timely and transparent manner (Li et al., 2005). Failure to do so can lead to a negative impact on customer satisfaction and ultimately, business performance.

#### **4.7.2 Supply chain Management Practices and Competitive Advantage**

Again, it was shown that, supply chain management practices positively and significantly regressed on competitive advantage, given the path coefficient results  $\beta = 0.713$ ,  $t = 18.242$ ,  $p < .01$ . This indicates that, supply chain management practices account for 71.3% increase in competitive advantage. In support of the above findings, Vencataya et al. (2016) posits that, good supply chain management has been shown to increase a company's profitability and competitiveness, since customer relationship management helps businesses better understand the loyalty and contentment of their customers. Again Srinivasan and Swink (2018) concurs that, businesses benefit from long-term relation with customer increasing revenue and giving it a competitive edge. This results therefore lends significant support for H2.

#### **4.7.3 Competitive Advantage and Customer Satisfaction**

The results again show that, competitive advantage positively and significantly relate with customer satisfaction, given the path coefficient results  $\beta = 0.908$ ,  $t = 12.348$ ,  $p < .01$ . This indicates that, an increase in 90.8 percent of customer satisfaction is accounted for by competitive advantage, hence, lending support for H3 which stated that, competitive advantage and customer satisfaction are positively and significantly



related. In agreement with the results findings, Carson et al. (2006) states that, a higher level of SCM practices implementation give businesses a significant competitive edge over rivals in the market environment. Again, when compared to its rivals, a firm with a competitive advantage typically possesses one or more of the following qualities: reduced costs, higher standards of quality and dependability leading to improved customer satisfaction.

#### **4.7.4 Mediation Effect of Competitive Advantage**

Lastly, the study sought to examine the mediating effect of competitive advantage. The study found a positive and significant mediating effect of competitive advantage in the relationship between supply chain management practices and customer satisfaction. This suggests that having a competitive advantage, which is a key goal for many firms, can help to enhance customer satisfaction, given the path coefficient results  $\beta = 0.147$ ,  $t = 5.318$ ,  $p < 0.001$ . This indicates that, the mediation effect of competitive advantage accounts for 14.7 percent on customer satisfaction. This therefore lend great support for H4. In support of the findings, prior studies suggest that, having a competitive advantage can help firms to improve their performance and customer satisfaction. By adopting and implementing supply chain management practices, firms can improve their operations and gain a competitive advantage, which can then be leveraged to enhance customer satisfaction. This can help firms to differentiate themselves from their competitors, attract more customers, and ultimately, improve their financial performance (Barney, 1991; Johnson and Whang, 2002; Wagner et al., 2010).

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of findings, conclusion, and recommendations.

#### **5.2 Summary of Findings**

The main objective of the study of the study is to examine the relationship between supply chain management practices and customer satisfaction and the mediation effect of competitive advantage. Based on the main objective of the study, four specific objectives were addressed.

##### **5.2.1 Relationship between Supply Chain Management Practices and Customer Satisfaction**

First and foremost, the first specific objective of the study was to examine the relationship between supply chain management practices and customer satisfaction. Upon the study's analysis and results, it was found that, supply chain management practices such as customer relationship management and information sharing negatively and insignificantly relate with customer satisfaction. This therefore contradicts the findings and results of the extant literature.

##### **5.2.2 Relationship between Supply Chain Management Practices and Competitive Advantage**

Again, the objective two of the study was to examine the relationship between supply chain management practices and competitive advantage. The results and analysis of the study shows that, supply chain management practices positively and significantly regressed on competitive advantage, hence, the study shows a positive and significant relationship between supply chain management practices and competitive advantage.

### **5.2.3 Relationship between Competitive Advantage and Customer Satisfaction**

Also, the study sought to examine the relationship between competitive advantage and customer satisfaction as the third specific objective. Upon the research analysis and results, it was found that, competitive advantage and customer satisfaction are positively and significantly related.

### **5.2.4 Mediating Effect of Competitive Advantage**

Lastly, the study sought to examine the mediating effect of competitive advantage between supply chain management practice and customer satisfaction. It was therefore found that, though supply chain management practices insignificantly relate with customer satisfaction, however, there is a positive and significantly mediation effect of competitive advantage between supply chain management practices and customer satisfaction.

### **5.3 Conclusion**

First and foremost, the study concludes that, both the service and manufacturing firms in Ghana implement supply chain management practices at a higher extent during procurement activities. Again, it could be concluded that, firms are able to achieve the highest competitive advantage in the industry for implementing and adopting supply chain management practices. Further, competitive advantage is said to have a great impact on customer satisfaction, hence increasing sales and revenue. Lastly, the study concludes that, competitive advantage has a great mediation impact on the relationship between supply chain management practices and customer satisfaction. The correlation results show that, all the variables in the hypothesised paths positively and significantly correlated among themselves. In conclusion, it could be seen that, all the variables correlate positively and significantly with one another.

## **5.4 Recommendations**

Based on the findings and conclusion of the study, the following recommendations are proposed.

### **5.4.1 Recommendations for Management**

Upon the study's analysis and results, it was found that, supply chain management practices such as customer relationship management and information sharing negatively and insignificantly relate with customer satisfaction due to poor communication between the different entities in the supply chain which leads to delays, mistakes, and other issues which negatively impact customer satisfaction. However, the study recommends that, management of firms must ensure that, there are proper and effective communication among their supply chain partners. Also, it is recommended that, there is the need for companies to carefully manage their supply chains to ensure that they are delivering high-quality products to customers in a timely and transparent manner.

The results and analysis of the study shows that, supply chain management practices positively and significantly regressed on competitive advantage, hence, the study shows a positive and significant relationship between supply chain management practices and competitive advantage. The study based on this findings recommends that, management of firms should continuously engage their supply chain partners in a collaborative manner to help satisfy customer demand.

Upon the research analysis and results, it was found that, competitive advantage and customer satisfaction are positively and significantly related. In view of this, it is recommended that, management of firms need to differentiate their operations so as to entice customers to meet their needs.



It was further found that, there is a positive and significantly mediation effect of competitive advantage between supply chain management practices and customer satisfaction. Hence, it is recommended that, there is the need for the firms to consider and implement which SCM practices positively results in achieving competitive advantage which in turn leads to customer satisfaction.

#### **5.4.2 Suggestions for Future Studies**

Firstly, the study indicated that, the insignificant relationship between supply chain management practices was accounted for by the size of the sample adopted for the study. However, future students are recommended to adopt a higher sample size that will help generalize the study's findings.

The study again conceptualized customer satisfaction as the predicted variable on the supply chain management practices being the predictor variable. However, future researchers must consider how supply chain management practices affect organizational performance and the moderation role of top management commitment.

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## APPENDIX A

### QUESTIONNAIRES

Dear Respondent,

I am currently researching on the topic “Assessing the effect of supply chain management practices on competitive advantage and customer satisfaction” as part of my final work towards my graduation. You have therefore been selected as a key respondent by reason of your great experience in the field of practice. I wish to state that, the research work is purely for academic purpose, and all information so collected will be treated with strict confidentiality.

#### **[PART ONE]: PROFILE OF RESPONDENTS**

For the following questions, kindly select by checking (✓) all that apply.

1. Gender: Male ☐ Female ☐
2. Age (years) of Respondents: 29 and below ☐ 30 to 39 ☐ 40 to 49 ☐ 50 or more ☐
3. Level of Education: Secondary school or related Certificate ☐ Diploma/HND ☐ 1st Degree ☐ 2nd Degree or more ☐
4. Working of experience: 0-5years ☐ 6-10years ☐ 11-15years ☐ above 15years ☐
5. Managerial level: Supervisor ☐ line manager ☐ Top level ☐
6. Position within the organisation: Supply chain manager ☐ logistics managers ☐ operations manager ☐

#### **PART TWO: SUPPLY CHAIN MANAGEMENT PRACTICES**

The respondents were asked to rate how much they agree or disagree with each statement on a 7-point Likert scale, where 1 = strongly disagree, 2 = slightly disagree, 3 = disagree, 4 = indifferent, 5 = slightly agree, 6 = agree and 7 = strongly agree.

	1	2	3	4	5	6	7
<b>Strategic Supplier Partnership</b>							
1. We consider quality as our number one criterion in selecting suppliers							



2. We regularly solve problems jointly with our suppliers							
3. We have helped our suppliers to improve their product quality							
4. We have continuous improvement programs that include our key suppliers.							
5. We include our key suppliers in our planning and goal-setting activities							
6. We actively involve our key suppliers in new product development processes							
<b>Customer Relationship</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1. We frequently interact with customers to set reliability, responsiveness and other standards							
2. We frequently measure and evaluate customer satisfaction							
3. We frequently determine future customer expectations							
4. We facilitate customers' ability to seek assistance from us							
5. We periodically evaluate the importance of our relationship with our customers							
6. Employing qualified staff facilitates the implementation of e-procurement							
<b>Information Sharing</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1. We inform trading partners in advance of changing needs							
2. Our trading partners share proprietary information with us							
3. Our trading partners keep us fully informed about issues that affect our business.							
4. Our trading partners share business knowledge of core business processes with us							
5. We and our trading partners exchange information that helps establishment of business planning							
6. We and our trading partners keep each other informed about events or changes that may affect other partners							
7. Information exchange between our trading partners and us is reliable							
<b>PART THREE: COMPETITIVE ADVANTAGE</b>							
The respondents were asked to rate how much they agree or disagree with each statement on a 7-point Likert scale, where 1 = strongly disagree, 2 = slightly disagree, 3 = disagree, 4 = indifferent, 5 = slightly agree. 6= agree and 7 = strongly agree.							
<b>Measures</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1. We offer competitive prices.							
2. We are able to offer prices as low or lower than competitors							
3. We are able to compete based on quality							
4. We offer products that are highly reliable.							
5. We offer products that are very durable.							
6. We offer high quality products to our customer							

7. We deliver the kind of products needed.							
8. We deliver customer order on time.							
9. We provide dependable delivery							
10. We provide customized products.							
11. We alter our product offerings to meet client needs							
12. We respond well to customer demand for new features							
<b>PART FOUR: CUSTOMER SATISFACTION</b>							
The respondents were asked to rate how much they agree or disagree with each statement on a 7-point Likert scale, where 1 = strongly disagree, 2 = slightly disagree, 3 = disagree, 4 = indifferent, 5 = slightly agree. 6= agree and 7 = strongly agree.							
<b>Measures</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1. Our customers are satisfied with our product quality							
2. Our customers are satisfied with the timely delivery of goods and services							
3. Our customers are satisfied with our service delivery							
4. Customer complaints have reduced o minimum							
5. Our customers' loyalty has improved over time							
6. Our firm provides appropriate platform for aggrieved customers to seek redress.							

