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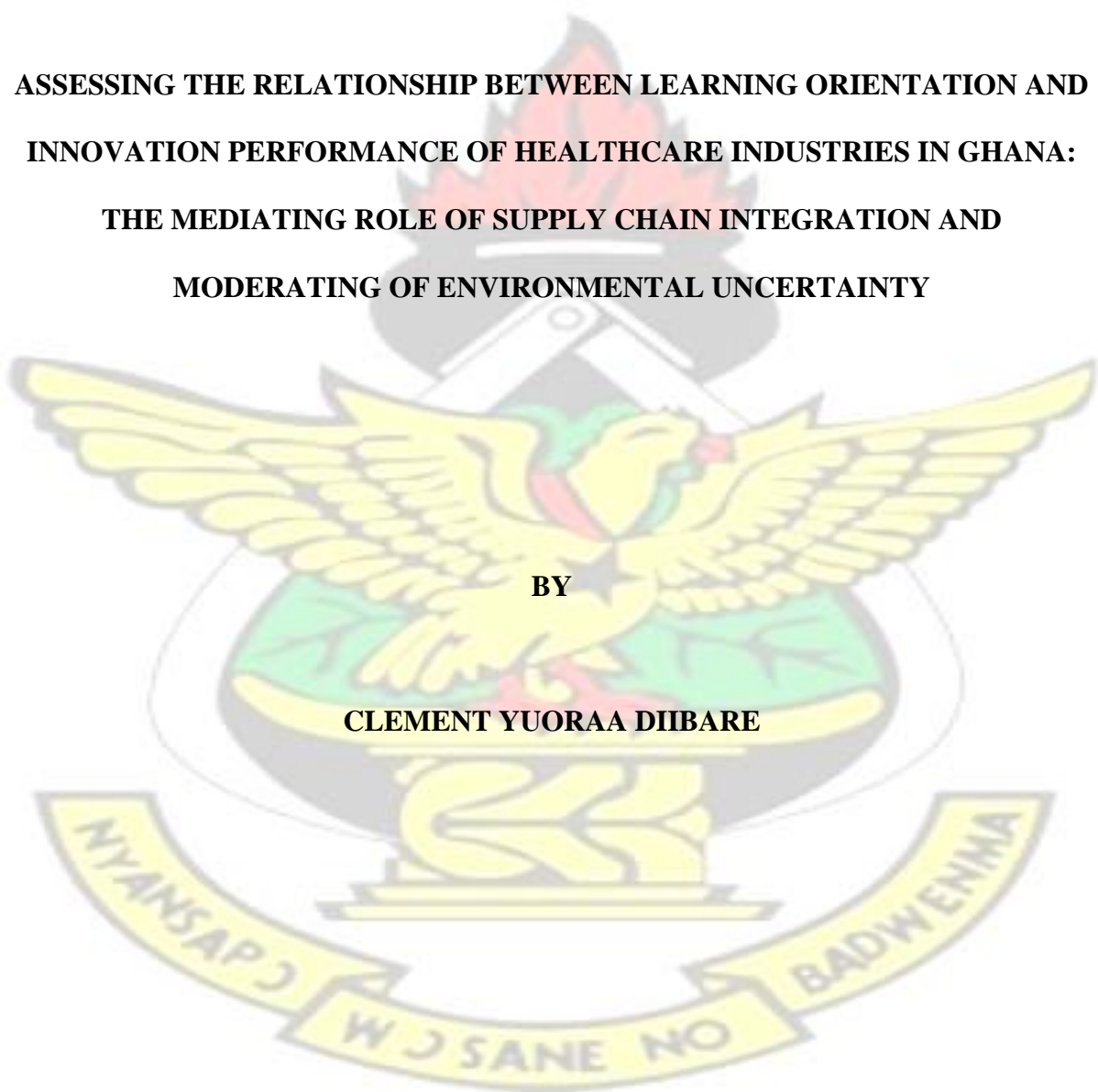
INSTITUTE OF DISTANCE LEARNING

DEPARTMENT OF SUPPLY CHAIN AND INFORMATION SYSTEM

**ASSESSING THE RELATIONSHIP BETWEEN LEARNING ORIENTATION AND
INNOVATION PERFORMANCE OF HEALTHCARE INDUSTRIES IN GHANA:
THE MEDIATING ROLE OF SUPPLY CHAIN INTEGRATION AND
MODERATING OF ENVIRONMENTAL UNCERTAINTY**

BY

CLEMENT YUORAA DIIBARE



NOVEMBER, 2023

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BY

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A THESIS SUBMITTED TO THE DEPARTMENT OF SUPPLY CHAIN AND
INFORMATION SYSTEM, SCHOOL OF BUSINESS,
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IN PROCUREMENT AND SUPPLY CHAIN MANAGEMENT

NOVEMBER, 2023

DECLARATION

I, Clement Yuoraa Diibare, declare that this Masters' Thesis work, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my original work and has not been submitted either in part or whole, for another Masters' degree in this University or elsewhere.

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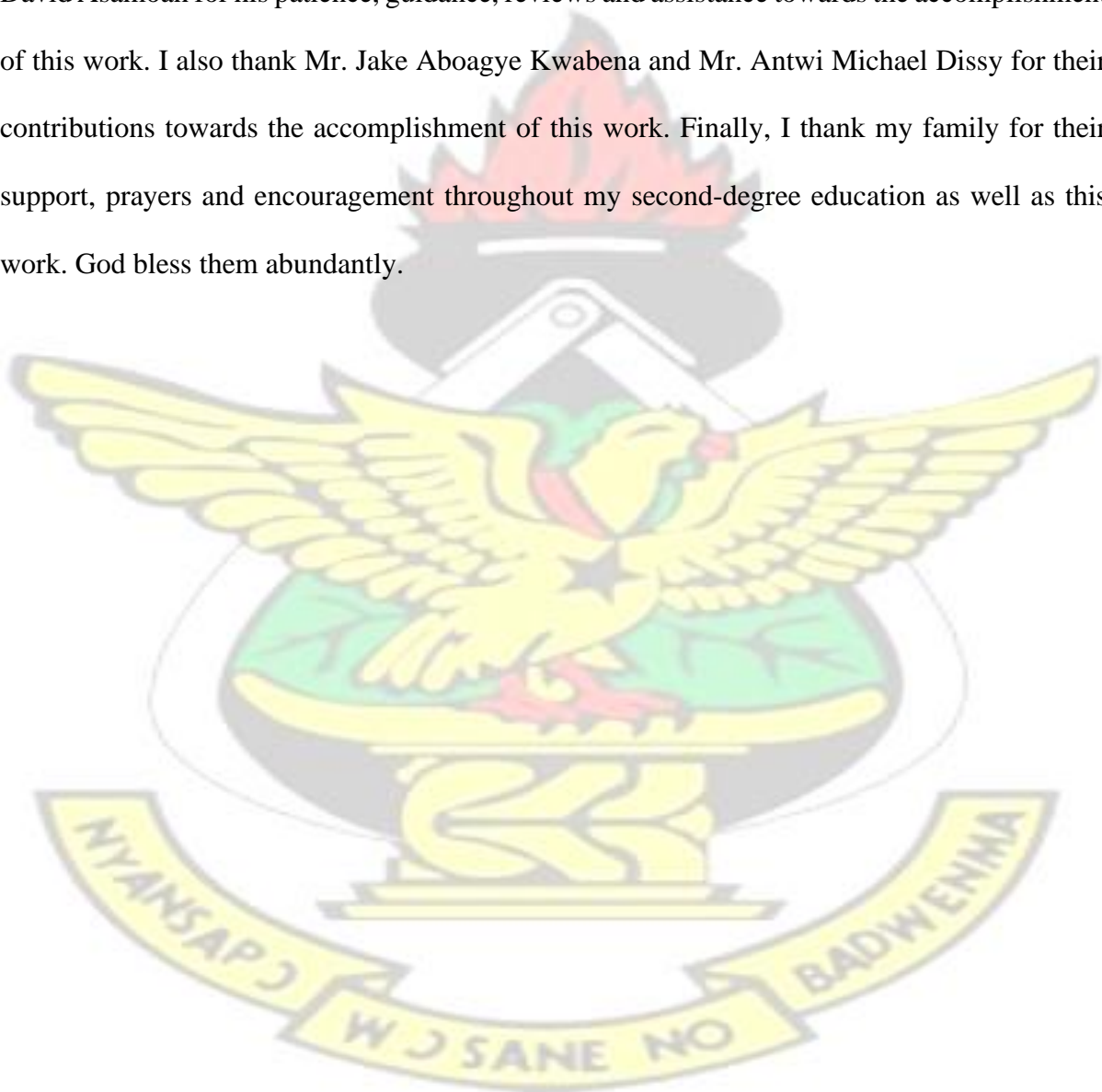
DEDICATION

First of all, I dedicate this Masters' thesis to the Almighty God whose grace kept me alive this far. It is with genuine and warm regards that I also dedicate this Masters' thesis to Mr. Jones Abekah Baah, Principal of the Community Health Nurses' Training School, Akim Oda. I also dedicate this work to my friends and family who assisted and counselled me throughout my second-degree education.



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I express my heartfelt gratitude to the Almighty God for his grace and favour that made this Masters' thesis a success. I express my very great appreciation to the staff of the Supply Chain and Information Systems of the Kwame Nkrumah University of Science and Technology School of Business especially my lecturers for their guidance and assistance during my second-degree education. I also offer my special thanks and appreciation to my Supervisor, Professor David Asamoah for his patience, guidance, reviews and assistance towards the accomplishment of this work. I also thank Mr. Jake Aboagye Kwabena and Mr. Antwi Michael Dissy for their contributions towards the accomplishment of this work. Finally, I thank my family for their support, prayers and encouragement throughout my second-degree education as well as this work. God bless them abundantly.



ABSTRACT

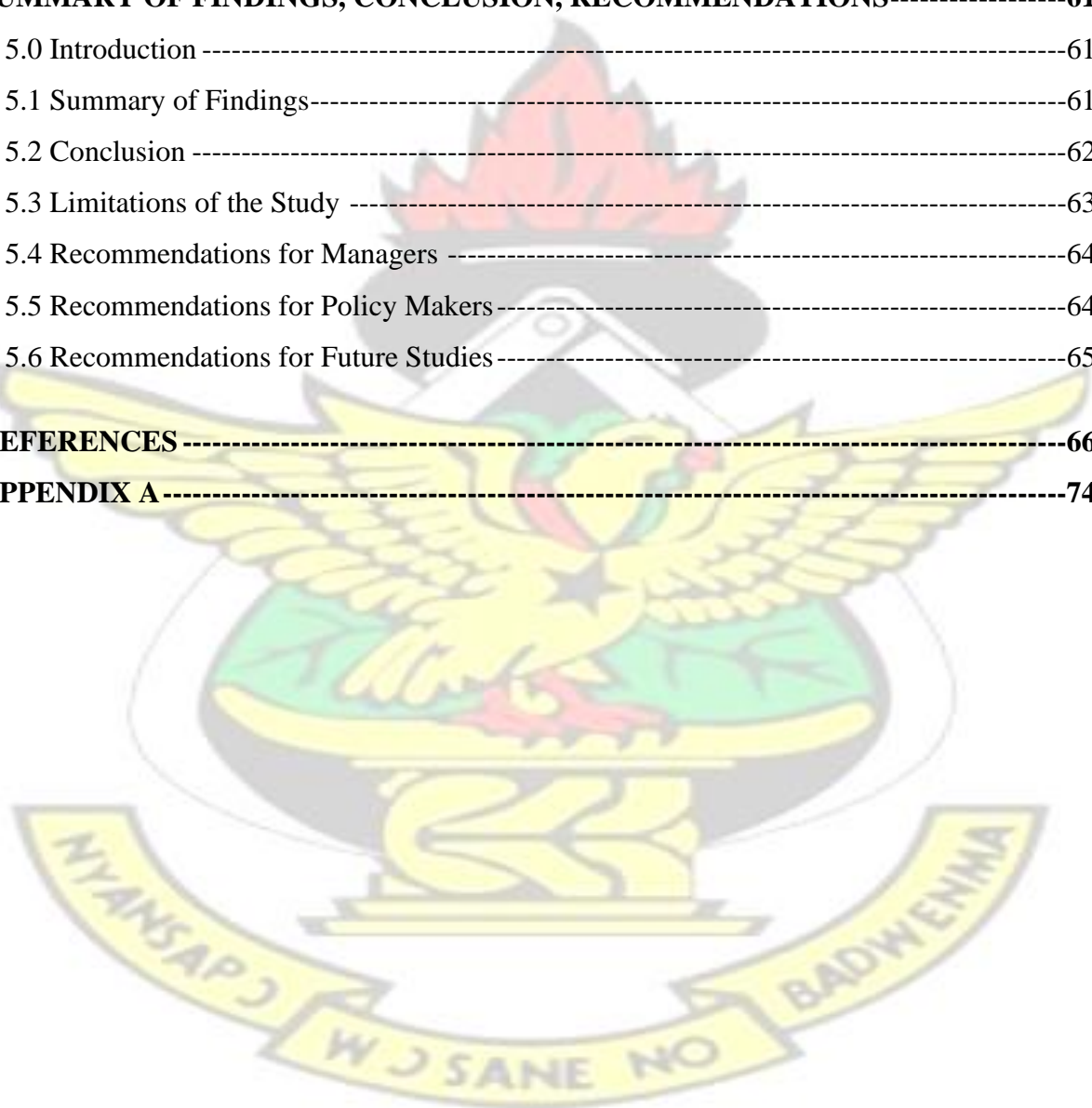
Intense international competition, rapid technological advances, and potential customer expectations can cause terrible turbulences in organisations therefore they try to differentiate and gain competitive advantage. Learning orientation orients organisations in the direction of creating and using knowledge, so it can improve the organization's desire to acquire, assimilate, transform and exploit the external knowledge. Learning occurs through interacting knowledge with action and leads to acquiring and disseminating knowledge and it influences innovation performance in organizations. This research sought to assess the effect of learning orientation on innovation performance of healthcare industries in Ghana coupled with the mediating role of supply chain integration and moderating of environmental uncertainty. This research was a quantitative study and an explanatory research design was employed to achieve the three objectives of the study. A developed questionnaire was used to collect data from selected healthcare industries in Ghana using 132 respondents. Data entry and analysis was conducted through Microsoft Excel Software, SPSS and Hayes Process Macro. Results were presented using descriptive, correlation and regression tables. Results showed that four out of the five proposed hypotheses were supported. Learning orientation had a positive and significant effect on Innovation Performance ($p < 0.05$). Also, the effect of Learning Orientation on Innovation Performance was mediated by Supply Chain Integration. Finally, Environmental Uncertainty did not moderate the effect of Supply Chain Integration on Innovation Performance. This research concludes that learning orientation play a key role in the improvement of innovation performance notwithstanding the critical contribution of environmental uncertainty and supply chain integration. As a result, organisations in Ghana must synchronise effective learning orientation, environmental uncertainties and supply chain integration in their strategic planning.

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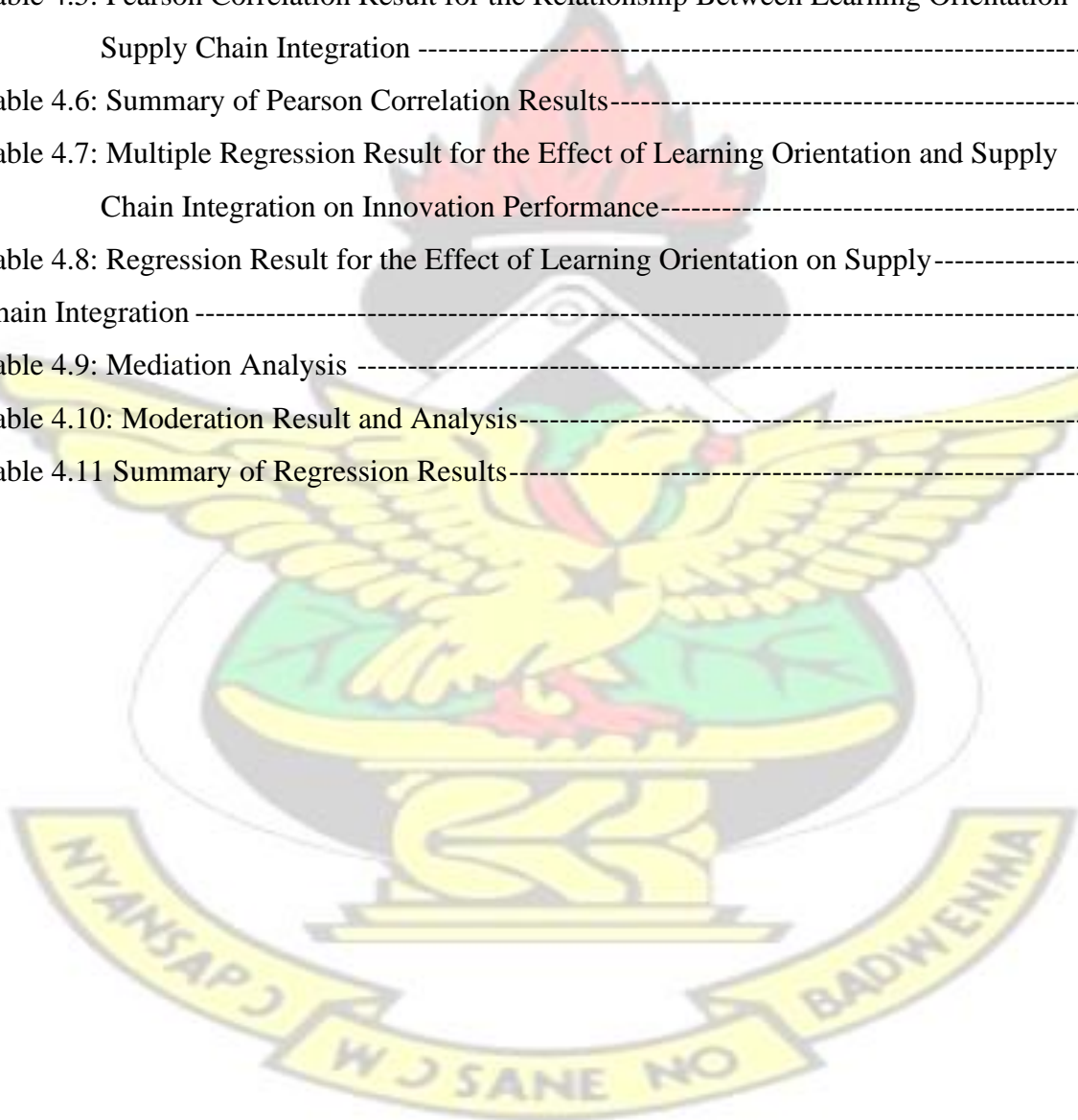
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LIST OF ABBREVIATIONS

SC	Supply Chain
SCI	Supply Chain Innovation
LP	Learning Orientation
IP	Innovation Performance
SMEs	Small and Medium Enterprises



CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Innovation has become crucial for the sustainability and competitive advantage of healthcare industries in the global healthcare market. Therefore, it has become essential for one to understand the various factors that influence innovation performance in the dynamic healthcare sector to achieve successful innovation outcomes. Nonetheless, the healthcare industry finds itself amidst fierce international competition, rapid technological advancements, and heightened customer expectations. These factors have stirred considerable turbulence within the sector, prompting healthcare organizations to embark on a quest for differentiation and the pursuit of competitive advantages. Prior research has firmly established that the performance of organizational innovation can play a pivotal role in shaping competitive advantages, as evidenced by Urbancova (2013).

Given that knowledge constitutes a pivotal ingredient in the innovation process, as indicated by Zhou and Li (2012), scholars are increasingly focused on delving into the resources and mechanisms of knowledge that can pave the way for competitive advantages rooted in service delivery innovation. Among the various knowledge-related factors and capabilities, one that stands out prominently is the concept of "learning orientation." This vital facet, highlighted by Laverie, Madhavaram, and McDonald (2008) and further explored by Yuan, Feng, Lai, and Collins (2018), pertains to an organization's fundamental attitude towards learning, as articulated by Gerschewski, Lew, Khan, and Park (2018). Notably, learning orientation plays a pivotal role in fostering the creation and utilization of knowledge, as demonstrated by Rhee, Park, and Lee (2010). In essence, it guides the organization towards actively seeking, absorbing, transforming, and harnessing external knowledge, thereby enhancing its capacity for growth and innovation.

Supply chain integration, on the other hand, involves collaboration and coordination among different entities within the supply chain to achieve common goals. Scholars have increasingly recognized the importance of learning orientation as a driver of successful supply chain integration. Many research studies have explored the correlation between a learning orientation and the integration of supply chains, providing valuable insights into this dynamic. For instance, Chen and Paulraj (2004) discovered that companies possessing a robust learning orientation demonstrated a higher propensity to participate in collaborative relationships and achieve higher levels of supply chain integration. Similarly, Wu and Chuang (2014) found that learning orientation positively influenced information sharing, as this noted to improve supply chain integration. Also, organizational learning capacity pertains to an organization's proficiency in acquiring, integrating, and effectively utilizing new knowledge, has a significantly impact supply chain integration (Vijayasathya et al., 2015). Additionally, individual and collective learning behaviours, such as knowledge sharing and openness to new ideas promote supply chain integration in an organization (Wu et al., 2015). Song et al. (2014) found that organizations with an intensive learning orientation to a large extent partake in collaborative activities that involves partners within their supply chain system, leading to enhanced supply chain integration and improved performance.

Rajaguru et al. (2017)., also added that a learning-oriented organization actively promotes knowledge sharing and information exchange among supply chain partners which facilitates the flow of reliable and accessible information through the supply chain, resulting into improved coordination, swift response rates and enhanced decision-making. Furthermore, Cao et al., (2015) in their studies state that, learning orientation fosters a culture of collaboration, trust, and mutual understanding among supply chain partners. This facilitates effective communication, joint problem-solving, and the development of long-term relationships, leading to higher levels of supply chain integration. By fostering continuous learning and

knowledge application, organizations can rapidly respond to evolving marketplace dynamics and client needs. A learning-oriented approach enables supply chain partners to collaborate in real-time, identify opportunities, and respond proactively to market disruptions (Gligor et al., 2013).

1.2 Statement of the Problem

In the current dynamic landscape of business, marked by constant technological and market shifts, the imperative for enhanced innovation performance to bolster organizational adaptability has become evident. In this context, information disparities showcasing that organisations are unable to count entirely on their internal knowledge creation mechanisms to produce adequate innovation outcomes (Chesbrough & Bogers, 2014). They must proactively seek external sources to facilitate the influx of knowledge (Ardito et al. 2018; Savinoet al. 2017). This heightened interest extends to firms operating within supply chains or networks, who recognize the strategic value of knowledge from suppliers and customers in shaping their innovation strategies (Soosay et al. 2008).

Nonetheless, investigations into the function and sources of supply chain as catalysts for innovation performance have primarily revolved around standard interactions with supply chain constituents (customer and supplier). Consequently, more comprehensive studies are needed to delve into higher-order interactions, such as integration with these stakeholders. In essence, there is a critical need to examine how SC integration impacts the innovation performance of entities.

Moreover, entities with a strong learning orientation are to a large extent engaged with external knowledge sources and may even contemplate integrating themselves with supply chain partners. A learning orientation represents businesses fundamental attitude towards acquiring

and utilizing knowledge (Gerschewski et al., 2018), a factor with significant influence on innovation (Mahmoud et al., 2016). Learning orientation, through the acquisition and dissemination of insights into the customers' needs, competitive advantages, dynamics of markets, and (Abdulai et al. 2012), plays a pivotal task in driving innovation (Tho et al. 2015). Nonetheless, its direct impact on innovation performance remains unexplored, as does its effect on supply chain integration.

Furthermore, while prior research has acknowledged the significance of knowledge in certain areas of strategic operations (Fang et al. 2016), none has delved into the ramifications of a learning orientation on SC integration. In essence, a learning orientation, reflecting an organization's fervour for knowledge creation and utilization, could potentially stimulate various facets of supply chain integration. Consequently, a comprehensive examination of the interplay between these factors holds promise from the perspective of operations and knowledge management. Hence, based on the preceding discourse, this study seeks to explore both the immediate and ongoing effects of a learning orientation on innovation performance, as mediated by supply chain integration (including internal customer and supplier integration) within healthcare institutions in Ghana. Additionally, environmental uncertainty, closely linked to organizational innovation performance (Freel, 2005), organizational strategic orientation (Swamidass et al., 1987), and knowledge capabilities, will be scrutinized to determine how well it exerts a facilitating influence on the connections between SC integration and innovation performance.

1.3 Objectives of the Study

The study sought to achieve the following objectives:

- i. To examine the relationship between learning orientation and healthcare innovation performance of healthcare industries in Ghana.

- ii. To examine how supply chain integration (supplier integration, customer integration, and internal integration), mediate the relationship between learning orientation and healthcare innovation performance of healthcare industries in Ghana.
- iii. To assess the moderating role of environmental uncertainty on the relationship between supply chain integration (supplier integration, customer integration, and internal integration) and healthcare innovation performance.

1.4 Research questions

The study was guided by the following questions:

- i. What is the relationship between learning orientation and healthcare innovation performance of healthcare industries in Ghana?
- ii. How does Supply Chain Integration mediate the relationship between learning orientation and healthcare innovation performance of healthcare industries in Ghana?
- iii. How does the moderating role of environmental uncertainty impact on the relationship between supply chain integration (supplier integration, customer integration, and internal integration) and healthcare innovation performance of healthcare industries in Ghana?

1.5 Significance of the Study

The study's discoveries will function as a wellspring of empirical information and a benchmark for fellow researchers exploring the same field, particularly those seeking to advance our understanding of the influence of a learning-oriented approach on healthcare innovation performance. Policymakers can leverage these findings to evaluate the effectiveness of current policies and implement necessary revisions and updates as deemed necessary. The study sought to identify supply chain integration practices used in healthcare industries and their impact on

healthcare innovation performance. This data will be most useful to healthcare managers in assessing their current supply chain integration strategies, if necessary, implementing more strategies.

1.6 Overview of research Methodology

The study is a quantitative study and an explanatory study design will be used as the framework to obtain data for the study. The study will be conducted among selected healthcare facilities in Kumasi and Accra cities of Ghana. Data will be specifically taken from healthcare Administrators, Supply Officers, Medical Directors/Superintendents, Executive Directors, and Procurement Managers in the selected healthcare facilities in the two cities. A closed ended questionnaire will be developed to solicit the relevant information from the respondents. Descriptive statistics, Pearson correlation and Multiple Regression will be used to analyse the Data obtained through the use of the SPSS and Process Macro software. All ethical issues pertaining to the study will be observed accordingly before the commencement of data collection.

1.7 Scope of the Study

The study sought to investigate the impact of learning orientation on healthcare innovation performance of Ghana's health industries. The research focused on investigating the mediating role of supply chain integration and the moderating impact of environmental uncertainty on the connection between supply chain integration and the performance of healthcare innovation within the healthcare sector of Ghana. Furthermore, the study concentrated on healthcare industries within the chosen metropolis. As a result, the study excludes existing health industries in other Ghanaian metropolises.

1.8 Limitation of the Study

The study setting was based on health industries in two (2) Ghanaian geographical regions with similar characteristics. As a result, the study's findings may not be applicable to other parts of Ghana.

1.9 Organization of the Study

The study is organised into five chapters., each serving a distinct purpose.

In Chapter One, we commence with an introduction, setting the stage by delving into the study's background, articulating the problem under investigation, and elucidating the study's objectives. This chapter also encompasses the formulation of pertinent research questions, pivotal in guiding our exploration, and concludes by delineating the study's organizational framework.

Chapter Two is dedicated to review of pertinent literature, focusing on the concepts of Learning Orientation, SC Integration, and Organizational Innovation Performance. This section also draws upon the Dynamic Capabilities Theory (DCT) to provide a robust theoretical foundation for our study.

Chapter Three is where we divulge our research methodology, elucidating the research design, study site, target population, sampling technique, and the methodologies employed for data collection and analysis.

Chapter Four unveils the study's findings, offering a comprehensive analysis and interpretation of the collected data. These results are juxtaposed with the existing literature to derive meaningful insights and implications.

In Chapter Five, our final chapter, we encapsulate the study with a succinct summary of key findings, present our conclusions, and provide practical recommendations based on our

research. This chapter also lays the groundwork for future research directions, ensuring the continual expansion of knowledge in this domain.

1.10 Chapter Summary

This chapter serves as an introduction to the study, offering insight into its contextual background, the underlying problem, and both its overarching and specific objectives. Furthermore, this chapter explores the study's extent, significance, and its overall organizational structure. Moving forward, Chapter Two will delve into a comprehensive literature review, while Chapter Three will outline the methodology. Chapter Four will present the study's results and findings, and, finally, Chapter Five will encompass the discussion, conclusions, and recommendations.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, we delve into a comprehensive exploration of viewpoints and insights drawn from various authors, publications, magazines, websites, and an array of potential sources, forming the bedrock upon which this research study is built. The chapter is structured into two main sections: the first part establishes the definitions of key variables, while the subsequent sections align with the research questions outlined below.

2.1 Conceptual Review

2.1.1 Learning Orientation

The goal of learning orientation is to promote knowledge productivity processes, produce and assimilate new information relevant to products, processes, and services, and integrate it inside the organization (Huang and Wang, 2013; Verdonshot, 2005). It also aims to contribute to successful innovation. Four sub processes of learning orientation—creation of knowledge, transfer of knowledge, assimilation, and organizational memory— allow businesspersons to watch foreign market advances and predict how they will be essential to the corporation (Dixon, 1992). Utilizing organizational learning involves making it easier to obtain market data, share market knowledge, and use that information to convert an organization into one that is market- and entrepreneurial-oriented. The literature on organizational learning helps scholars comprehend how market knowledge is created. According to earlier studies (Huang et al. 2013), market processes were understood using an organizational approach. To motivate behaviour inside the business environment toward preserving and disseminating employees' newfound knowledge and expertise towards a common goal, utilizing a system idea, is known as "learning orientation" (Bulut et al., 2009).

According to Hurley and Hult (1998), learning orientation is a collection of cultural norms that expresses an organization's propensity for producing new knowledge and turning it into useful innovations. Companies that have effectively implemented a learning culture are those that are able to think outside the box and offer fresh perspectives by challenging preconceived preconceptions. Additionally, empirical research has demonstrated that organizational learning has a substantial and immediate positive influence on how well firms' information systems and purchasing systems operate (Hult et al., 2000). In order to support learning, organizational approaches leverage market data. Organizations will see a rise in sales and profit as a result of the learning orientation, as well as improved customer satisfaction and more successful launch of new lines of product (Slater et al., 1995). Results observed from some case studies illustrate that the cultivation of a learning-centric ethos within an organization yields tangible enhancements in both innovation performance and overall firm performance. According to the research of Hult et al. (2004), certain core values—namely, a steadfast dedication to learning, a shared vision, receptiveness to new ideas, and the active exchange of knowledge within the organization—have emerged as pivotal prerequisites for the successful adoption of a learning-oriented approach within corporate settings. To truly embody the essence of a learning-oriented firm, it is imperative to embed principles of systematic thinking and foster a culture of collaborative team learning, as emphasized by Lee et al. (2005).

Learning orientation is reliant on principles like (1) dedication to learning, (2) open-mindedness, and (3) a common goal. These ideals empower employees to express their feelings, which strengthens the business culture. Their shared sense of purpose inspires them to learn and grasp long-held views and assumptions (Celucha et al., 2002). Organizational learning cultures encourage innovation and the pursuit of new ideas and information. As it improves the capacity to comprehend and apply new concepts, it benefits organizational performance (Aragon-Correa et al., 2007).

2.1.2 Supply Chain Integration

Flynn et al., (2010) considered Supply Chain Integration (SCI) as the extent by which a company partner strategically with its supply chain partners while managing both intra-firm as well as inter-firm operations. The fundamental purpose of such partnership is to enable the effective flow of information, materials, products, and services, resulting in the delivery of the highest possible value at reduced cost and timely to customers (Migdadi et al., 2018). As organisations integrate inwardly and internationally, operating as one unit, the chance of performance gains across their supply chains increases (Kannan and Handfield, 1998). As a result, more integration leads to better performance (Ataseven et al., 2017). Lower levels of supply chain integration, on the other hand, result in high costs associated with inventory, procurement delays, poor product quality, and incorrect product and demand projections, which not only jeopardize the firm but also negatively impact its supply chain partners, thereby harming the experience of customers (Seo et al., 2014).

Supply chain integration comprise a variety of aspects, addressing both external and internal integrations. Nevertheless, prior research has revealed discrepancies in these aspects based on how they are defined and measured, as pointed out by Flynn et al. (2010). For instance, Devaraj et al. (2007) stressed the importance of integrating with a supplier and customer. On the other hand, Lau et al. (2010) defined SP integration in terms of the sharing of information, collaboration in developing products and coordination of all units and departments of a firm. Different studies have adopted narrower perspectives, with Rosenzweig (2009) highlighting the significance of e-collaboration, while Sanders (2008) considered both operational and strategic coordination.

In contrast, more recent research has demonstrated a relatively consistent framework for supply chain integration. This consistency is evident in studies conducted by Wong et al. in 2011; Seo

et al. in 2014; Flynn et al. (2010), and, all of which identify three core dimensions: internal, customer and supplier integrations.

Internal integration comprises a plan of action that promotes cooperation and common duties across departments, with the goal of breaking down functional silos (Lu et al., 2018; Wong et al., 2011). Its absence leads to wastage, duplicated efforts, increased cost of production, and increased inflexibility in manufacturing processes (Flynn et al., 2010). likewise, internal integration encourages knowledge sharing among functional divisions, assisting supply chains in fostering integration with both customers and suppliers (Narasimhan and Kim, 2002).

External integration is divided into two parts: customer and supplier integration. Customer integration is the cooperative interchange of information and resources between a firm and its customers with the goal of increasing visibility and encouraging collaborative planning (Wong et al., 2011). This collaborative strategy enables organisations to get a deeper understanding of market dynamics and customer expectations, allowing for more precise and fast responses to customer demands through supply-demand alignment (Ngo et al., 2018; Ataseven et al., 2017;

Similarly, supplier integration implies a firm's strategic partnership with its suppliers, with a focus on the management of various business processes such as knowledge and sharing of information, development of product jointly, cooperative planning, and the formation of long-term strategic alliances (Flynn et al., 2010). Recognizing that supply chain integration involves both intra-firm and inter-firm aspects, Alfalla-Luque et al. (2015) propose including External Integration Orientation (EIO) alongside supplier internal and customer, as components of integration. EIO can be summed up as certain behaviours or a business culture that encourages external integration with downstream customers and upstream suppliers within the supply chain, recognizing that strong partnerships lead to operational and financial incentives. Alfalla-Luque et al. (2015) define EIO as a entities' commitment to fostering

cooperation with relevant customers and suppliers, instead of adopting adversarial approaches. All four components of supply chain integration are crucial for creating value within supply chains.

2.1.3 Innovation Performance

Innovation plays a pivotal role in securing a competitive edge and is indispensable for the sustained success of organizations. It empowers organizations to convert ideas into tangible improvements in their services. Innovation is widely recognized as the key to enhancing products, services, and processes, enabling organizations to thrive, compete effectively, and distinguish themselves within their markets (Baregheh et al., 2009).

Thakur (2011) characterizes innovation as the changes that enable organizations to efficiently focus on their customers and operate more cost-effectively. Similarly, Omachonu and Einspruch (2010) perceive innovation as an idea or concept, aimed at enhancing services, with the ultimate goal of improving cost-effectiveness, safety, quality, efficiency, productivity. Akenroye (2012) emphasizes the necessity of innovative capabilities for organizations to adapt to unexpected challenges, particularly within the context of supply chains, where innovation is crucial for maintaining competitiveness. They identify various driving forces for innovation in organizations, including supply chain complexities, societal concerns, sustainability commitments, volatile operational environments, technological advancements, budget constraints, and evolving customer needs. Consequently, innovation can be harnessed as a means to address supply chain challenges, address societal concerns, and ensure sustainability. Moreover, some researchers have undertaken initiatives to explore and evaluate innovation in the context of supply chains. Supply Chain Innovation (SCI) was outlined by Arlbjorn (2011) as any transformation, whether gradual or radical, that occurs inside a company's SC procedures, SC network, or SC technology. These changes aim to create new value for

stakeholders. Additionally, innovation within the supply chain context can manifest as improvements in services processes or products that either reduce costs or elevate efficiency, leading to greater end-to-end customer satisfaction (2004). Consequently, SCI has a strong positive influence on organizations by ensuring the efficient delivery of products and services to customers. To implement SCI successfully, Arlbjorn (2011) recommends that organizations concentrate on enhancing their SC processes SC network and SC technology to drive continuous improvement.

2.1.4 Environmental Uncertainty

Environmental uncertainty encompasses a broad spectrum of factors that can disrupt an organization's operations and strategies. Scholars have highlighted its multi-dimensional nature, often categorizing it into several dimensions. Zheng and Jeppesen (2019) emphasize three primary dimensions: complexity, dynamism, and munificence of the environment. Complexity refers to the diversity and interconnectivity of external factors, dynamism to the frequency and intensity of changes, and munificence to the availability of resources. Additionally, Prajogo and Ahmed (2020) introduce the concept of technological uncertainty, recognizing the influence of rapid technological advancements on organizations. Complexity is a central dimension of environmental uncertainty, characterized by the heterogeneity and diversity of environmental factors (Zheng & Jeppesen, 2019). Organizations operating in complex environments face challenges in comprehending the interactions and interdependencies among various factors, affecting their ability to forecast and plan effectively. Moreover, technological uncertainty has gained prominence due to the accelerating pace of technological innovation, leading to shifts in markets and industry landscapes (Prajogo & Ahmed, 2020). The impacts of environmental uncertainty are far-reaching and can affect various organizational aspects. Firms facing high environmental uncertainty may experience reduced innovation due to limited information and resource availability (Zheng & Jeppesen,

2019). Additionally, these organizations may adopt conservative strategies to mitigate risks, leading to decreased flexibility and adaptability. Technological uncertainty can lead to resource misallocation as firms struggle to align resources with changing technological trajectories (Prajogo & Ahmed, 2020).

Organizations adopt various strategies to manage environmental uncertainty effectively. Zheng and Jeppesen (2019) propose the use of network ties and alliances as mechanisms for reducing complexity and improving access to resources. Firms can enhance their responsiveness by building flexible and modular organizational structures that can adapt to changing conditions (Prajogo & Ahmed, 2020). Furthermore, technological uncertainty can be managed through continuous scanning of technological landscapes, fostering innovation, and developing capabilities to rapidly adopt emerging technologies (Prajogo & Ahmed, 2020).

2.2 Theoretical framework of the Study

The Dynamic Capabilities Theory (DCT) governs this research. As stated by Eisenhardt and Martin (2000), a company's dynamic capabilities refer to its capacity to effectively blend, enhance, and restructure internal as well as external assets through organisational practices. This enables the firm to take action to shifts in the competitive landscape and formulate innovative value-enhancing strategies. In other words, dynamic capability looks at how well businesses can see opportunities, grasp them, and then adjust their resource allocations to gain a sustained competitive edge in a challenging market (Singh et al., 2019). Therefore, dynamic capabilities steps outside the use of priceless, uncommon, imperfectly replicable, and irreplaceable resources, placing more emphasis on the capacity of entities to build competencies for rearrangement of resources and continual innovation in reaction to dynamic contexts (Asamoah et al., 2021).

According to Sinha and Van de Ven (2005), businesses have an internal environment, whereas the external environment consists of the customer and suppliers. Uncertainty caused by an entity's external environment, or EU, is the primary concern of this research. All internal actions relating to product quality, product production, product development, and product adaptability are included in the operation improvement and performances of firms. An organization can improve the efficiency of its SCs by taking any actions it sees fit to increase its capacity to reduce inventory cycle times and to reinforce its supply chain operations to handle unforeseen demand without incurring additional costs. Similar to this, efforts made by an organization to increase its ability to meet customer expectations through accurate and on-time order fulfilment increase SC effectiveness (Wong et al., 2011).

Organisations can achieve successful SC responsiveness and long-term competitive advantage by sensing their environments, anticipating what consumers or suppliers need, and quickly reconfiguring resources to fulfil those demands. (Asamoah et al., 2021). Organisations must develop specific dynamic SC capabilities that will allow them to incorporate reconfigure, and allocate resources effectively and quickly to accommodate the ever-evolving requirements of customers, given that customer or supplier needs do not remain constant but may vary considerably within a brief length of time. (Lin & Chen, 2017). When using this approach in the healthcare environment, hospital or health facilities are guided to scan the environment, detect what patients or suppliers require, and reorganize resources to swiftly meet their ambiguous demands (Asamoah et al., 2021).

Because patient or supplier needs do not remain constant and may change significantly and quickly in a brief period of time, organisations must establish specific dynamic inventory capabilities that will allow them to quickly and effectively incorporate, reconfigure, and devote resources in order to satisfy the ever-evolving demands of patients who visit healthcare facilities for medical services.

2.3 Empirical Literature review

A quantitative and deductive approach was used to study the impact of operations strategy (including; delivery, flexibility, quality, and cost) and SC integration on innovation performance within the context of a learning orientation. Using structural equation modelling, the researchers constructed and evaluated a conceptual framework by analysing the responses to a survey questionnaire issued to 243 manufacturing enterprises in the UK. The findings demonstrated that learning orientation exerted influence on SC integration and operations strategy, but not on innovation performance. Furthermore, quality and versatile strategies had a good impact on innovation performance and SC integration, whereas delivery and cost strategies had no effect on these variables. In conclusion, the study suggested that the enhancement of innovation performance in manufacturing firms could be achieved through the integration of supply chains, provided managers incorporate flexibility and quality capabilities into their operations while fostering a learning-oriented culture (Emerald, 2016).

A study was undertaken to explore the interrelationships among market orientation, learning orientation, and innovativeness within SMEs in developing countries. The research involved a survey employing questionnaires distributed to managers of small-sized firms operating in Turkey, yielding 157 responses. The gathered data underwent analysis using structural equation modelling (SEM). The findings revealed a favourable connection between a company's innovativeness and its performance. Furthermore, the company's orientation toward learning was found to have a positive influence on its innovativeness, while its market orientation positively affected its learning orientation.

Additionally, it was observed that the company's learning orientation played a mediating role in the relationship between its market orientation and innovativeness. Furthermore, the impact of the firm's market orientation on its performance was indirect, primarily through its influence on innovativeness and learning. This study holds practical significance for small and medium-

sized enterprises (SMEs) seeking ways to improve their performance and innovativeness (Keskin, 2006).

There has been a burgeoning interest in exploring the organizational landscape in relation to the learning process. This heightened curiosity stems from the realization that learning and innovation hold paramount importance for survival in fiercely competitive and ever-changing environments. While there have been numerous publications dedicated to innovation and organizational learning, there still exists a notable gap in empirically connecting these two vital aspects.

In 2003, a research endeavour delved into the intricate relationship between innovation and organizational learning. This study placed a particular focus on the concept of "learning orientation," dissecting it into three key dimensions: (i) commitment to learning, (ii) shared vision, and (iii) open-mindedness. A theoretical model was meticulously crafted to depict the hypothetical connections among these constructs, and it was put to the test using structural equation modelling. The research was conducted within the context of the Brazilian Electro-Electronic Industry, yielding compelling findings. These results underscored a commendable alignment with the tested structural model, shining a light on the profound influence of learning orientation on product innovation. Moreover, it hinted at the potential for achieving a competitive edge for organizations immersed in robust learning processes.

Of particular significance was the revelation that the dimension of open-mindedness exhibited a particularly robust association with innovation and overall performance. This finding underscores the critical role of an open-minded attitude, reinforced by the concept of unlearning, in fostering the creation of ground-breaking products and the disruption of established market norms (Sampaio & Penin, 2003).

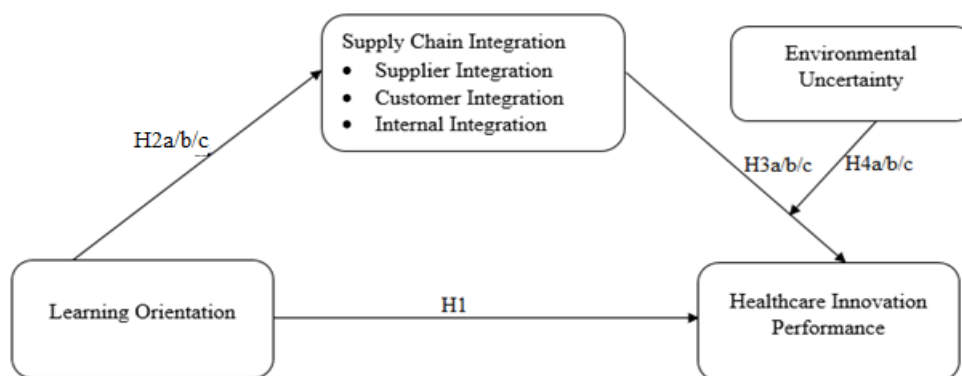
In 2007, a study with a focus on exploring the connections between market orientation, learning orientation, organizational innovation, and organizational performance employed structural equation modelling. This research centred on 143 companies located in the Pearl River Delta region of China. The study yielded several significant findings: Directly impacting organizational performance, market orientation was not observed. Market orientation exerted a direct influence on learning orientation. Administrative and technical innovation were directly affected by learning orientation. Market orientation influenced organizational innovation through its impact on learning orientation. Administrative innovation demonstrated a positive direct effect on organizational performance, while technical innovation did not directly influence organizational performance. Technical innovation had a positive impact on administrative innovation. Organizational performance was indirectly influenced by learning orientation through its impact on organizational innovation. Ultimately, organizational performance was influenced by market orientation, which affected both learning orientation and organizational innovation (Hongming, Changyong & Chunhui, 2007).

In the context of the evolving production industry, achieving excellence is imperative for companies aiming to survive and maintain a competitive edge in the ever-changing business landscape. Therefore, Jeihoony et al. (2019) carried out study to investigate how learning orientation influence innovation performance, with operational strategy playing a mediating role. Environmental uncertainty was explored as a moderator in this model. The study collected data from 243 UK production companies through a questionnaire to measure variables, and employed Structural Equations Modelling for the analysis of obtained data and testing of hypothesis. The findings confirmed nine of the thirteen research assumptions (hypothesis). Specifically, the study found that learning orientation influenced innovation performance, with two dimensions of operations strategy (delivery and quality) mediating this relationship.

Furthermore, the association between quality and flexibility strategies and innovation performance was positively modified by environmental volatility.

2.4 Research Model and Hypothesis Development

The following model describes how Ghana's learning-oriented healthcare sectors and SC integration affect healthcare innovation performance. The performance of SC integration and healthcare innovation will thus be examined, as well as the mediating role of supply chain



Source: Author's own construct, 2023.

2.4.1 Learning orientation and innovation performance

According to Tajeddini, et al. (2017), learning is a set of values and ideas that promote the development of knowledge, understanding, and consciousness. Organizational learning orientation is a derivative of organizational learning theory and drives the organization in the direction of learning, according to Fang et al. (2014). It covers a broad variety of actions involved in the production and use of knowledge. It consists of four elements: a commitment to learning, a shared objective, an open mind, and the sharing of knowledge within the company (Jyoti & Dev, 2015). An organization's commitment to learning is reflected in its willingness to offer learning activities and has a significant influence on the amount of money it invests in education and training as claimed by Calantone et al. (2002). A shared vision that places a large emphasis on the creation and use of information leads to the development of knowledge sharing

inside a company (Baba, 2015). The openness of an organization, which also pertains to the acceptance of fresh concepts, is used to assess its operations. Additionally, it makes a corporation align with its stated objectives (Gill, 2009). Intra-organizational knowledge sharing can help firms thrive by transferring information between different organizational functions and obtaining knowledge and data from multiple sources (Baba, 2015). (Abdulai Mahmoud and Yusif, 2012).

Learning is supposed to result in new, creative projects and ideas because it is fundamentally novel and blends previously held knowledge with newly acquired ones. According to Serrano-Bedia, et al. (2012) and Baumol (2002), innovation is regarded as an essential element of a company's long-term growth and survival. According to other studies (Sheng et al., 2016; Rhee et al., 2010), there is a direct association between an organization's commitment to innovation and its learning orientation. In reality, the learning process synchronizes an entity's with both its external and internal settings (Abdulai 2012) and also significantly contributes to the company's capacity to adapt to the complex and quick environmental changes (Huang & Li, 2017). This procedure aids the business in gathering, analysing, and disseminating crucial data and knowledge, which can encourage the growth of abilities such as creativity, strategic decision-making, and the creation of new services and goods (D'Angelo & Presutti, 2018). It is anticipated that new information would improve performance in terms of process speed and the success rate of new products, in addition to the introduction of new goods and services. The dynamic capabilities theory can be used to augment this proposition that learning orientation improves innovation performance. Thus, the ability of healthcare facilities to make it a conscious effort or priority to learn or know of new ideas, processes, systems or concepts for improving healthcare delivery activities in their organization in addition to sharing their newly acquired knowledge in their organization will improve their innovation performance. The healthcare needs of patients are dynamic, complicated and uncertain; hence, it is the

requirement of healthcare facilities to navigate their dynamic patient environment and identify opportunities grasp them, and then adjust their resource allocations to gain a sustained competitive edge in a challenging market through the use of their learning orientation capabilities or strategies. In all, using newly acquired knowledge to move through the stages of developing a new product in a more effective and efficient manner, organizations can improve their performance in innovation. In light of the foregoing debate, I posit the following connection:

H1: Learning orientation has a positive and significant impact on innovation performance.

2.4.2 Learning Orientation and Supply Chain Integration

The performance of a firm can be improved by integrating with its supply chain, which is made up of a web of connections between numerous other organizations (Wook Kim, 2006). The management of capital services, goods, and information in organizations could possibly be effectively and efficiently handled as a result of their support in managing the organization's internal and external activities. According to Feng et al. (2015), this is referred to as supply chain integration. The two basic classifications for supply chain integration used in earlier studies were external and internal integration (Mustafa et al. 2014). External integration is the process by which entities establish interorganizational strategies, processes, and procedures in conjunction with their external partners. On the other side, internal integration indicates how well an entity organizes actions, strategies and processes into collaborative and coordinated operations in order to meet the needs of its clients (Huo, et al. 2014). In accordance with past studies (Ataseven et al. 2017; Flynn, et al 2010), we examine three elements of supply chain integration: internal, customer and supplier integration. Due to the significant impact that SC integration has on corporate success, extensive research has been done on its causes.

On the other hand, learning occurs when an organization interacts with both its internal and external environments (Weerawardena, O'Cass, & Julian, 2006). Organizations with a strong focus on learning expand their avenues for acquiring fresh knowledge by actively incorporating both internal and external sources. Indeed, to advance their learning initiatives and excel in the realm of innovation, companies must adopt an open innovation strategy instead of solely depending on their internal knowledge reservoirs, as emphasized by Chesbrough and Bogers in their 2014 work. By recognizing that both internal and external supply chain partners are key knowledge sources, learning orientation can foster an organizational drive for more connection and integration (Wu, 2008). As demonstrated by Paiva et al. (2008), knowledge can assist the healthcare sector in achieving higher degrees of integration with other activities. On the other hand, shared vision, one of the fundamental elements of learning orientation (Calantone et al., 2002), calls for a number of organizational activities to be completed in order to remove barriers that prevent departments from communicating with one another and to promote information flow and action coordination (Brown & Eisenhardt, 1995). For learning to truly occur, lessons and learning must be disseminated among numerous organizational divisions, structured, and regularly re-evaluated (Calantone et al., 2002). It has been confirmed in order to find and absorb new knowledge, learning-oriented organisations widen their sources to encompass both internal and external sources. As a result, rather than relying entirely on their own knowledge sources, businesses need to adopt to an open innovation approach if they want to advance their learning processes while functioning effectively in the field of innovation. Therefore, to make good use of learning orientation, it must be well-integrated in the internal and external sources or environments of healthcare facilities for maximum absorption of the knowledge. Thus, with reference to the dynamic capability's theory, the ability of organisations to incorporate, build, and redesign both internal and outside assets by means of organisational procedures allows them to adapt to fluctuations in the healthcare

jurisdiction's competitive setting and create new value-adding strategies. This will enhance their supply chain innovation performance and their overall organisational performance. In other words, dynamic capability looks at how well businesses can see opportunities, grasp them, and then adjust their resource allocations to gain a sustained competitive edge in a challenging market (Singh et al., 2019).

If an organization has a learning orientation, it emphasizes the need for internal integration. The following connection seems to exist based on the aforementioned justifications:

H2a, b, c: Integration of the supply chain (including supplier, customer, and internal integration) is positively and significantly impacted by learning orientation.

2.4.3 Supply Chain Integration and Innovation Performance

Researchers have looked for ways to improve organizational innovation performance because it has been found to be a key driver of competitiveness (Covin, et al, 2000; Gamal Aboelmaged, 2012; Lemon et al. 2004). The knowledge-based view holds that knowledge significantly contributes to the expansion of innovation (Jin et al., 2015). This data may come from both internal (organization's staff) and external (government, consultancies, universities, and research organizations) sources (Zieba et al., 2017; JimenezJimenez et al., 2018;). Numerous research (Knoppen et al. 2015; Dyer & Hatch, 2004; Flint et al. 2008) have shown that supply chain partners of organizations are seen as important sources of fresh knowledge and play a key role in the realization of innovation in businesses. In this case, knowledge development and acquisition are significantly influenced by the closest SC partners, the customers and suppliers (Jimenez-Jimenez et al., 2018). The terms "internal" and "external" supply chain integration have already been mentioned. Suppliers are given access to this information together with design specifications for products through supply chain integration with upstream parties, which is important if the integration is taking place downstream (Griffin & Hauser,

1996). The success of new service is increased by early supplier involvement in product development and coordinated development of new services with them (Ragatz, Handfield, & Scannell, 1997). This is because they engage in reciprocal procedures that encourage rich information exchange and because they launch information technology infrastructures that make it simpler to get information from their partners (Wu, 2008; Malhotra et al., 2005). As a result, integration with supply SC can enhance the flow of information inside the company, and these vital components can encourage innovation. On the other side, through enhanced internal integration in businesses, cooperation across functions can be encouraged and barriers between them removed (Flynn et al., 2010).

The field of SC innovation or concept is ineffective if it lacks proper integration in any organization. A properly integrated supply chain innovation or concept ensures that the adaptation of new systems, processes or technologies are fully utilized by all partners or components of any organization to drive the expected innovation performance. With respect to the changing nature of healthcare needs of patients, it is prudent that organisations, integrate, develop, and restructure internal and external resources such as supply chain innovation in order to be able to adapt to changes in the competitive environment of the healthcare jurisdiction as stipulated by the dynamic capability theory. This will enhance their supply chain innovation performance and their overall organisational performance. With this better cooperation, the service development process's speed, cycle time, and responsiveness are all increased (Droge, Jayaram, & Vickery, 2004). In addition to encouraging product innovation, these two types of integration work even better together (Wong, 2013). In light of the arguments above, I surmise the following connection:

H3a/b/c: Supply chain integration (supplier integration, customer integration, internal integration) has a positive and significant impact on healthcare innovation performance.

2.4.4 Mediating role of Supply Chain Integration

SC integration plays a pivotal role in shaping the operational performance of businesses. This integration stems from their capacity for innovation and serves as a means for firms to enhance the efficiency, flexibility, order fulfilment, and lead times within their supply chain cycles. Consequently, fostering integration and cultivating an orientation towards it are poised to elevate the effectiveness and efficiency of supply chains, ultimately nurturing supply chain innovation. As articulated by Panayides and Lun (2009), innovativeness not only sparks increased interaction between firms, their suppliers, and customers, but also propels firms towards investment in novel systems and processes.

In the dynamic healthcare landscape, learning orientation and supply chain integration are two critical drivers of innovation performance. While learning orientation stimulates the generation of novel ideas and approaches, supply chain integration facilitates the translation of these ideas into tangible innovations that can be effectively distributed and implemented throughout the healthcare ecosystem. As healthcare organizations cultivate a learning orientation, they are more likely to seek and adopt innovative practices and technologies. These organizations, when integrated into the broader supply chain network, can facilitate the dissemination of innovative solutions and practices (Hu et al., 2020). Supply chain integration acts as a bridge, channelling the insights gained from a learning orientation into actionable innovations that benefit patients, providers, and stakeholders.

In light of the arguments above, I surmise the following connection:

H4a/b/c: Supply Chain integration mediates the relationship between learning orientation and innovation performance.

2.4.5 Moderating role of Environmental Uncertainty

According to Duncan (1972), uncertainty occurs when a firm finds it challenging to make judgments with limited information or accurate future projections. To improve their capacity for information analysis and to be adaptable in the face of unpredictability, businesses are pouring a lot of money into information technology (Huang et al., 2014). The success or failure of originations is reportedly determined by managers' actions, which are based on their perceptions and the information at hand (Wong et al., 2011). Like in other operational aspects of businesses, supply chains also experience uncertainty due to interactions between different companies and the utilization of diverse channels for the exchange of information, products, and materials (Lu et al., 2018). As a result, it can be difficult to predict how events will unfold. The primary focus of this essay is uncertainty caused by the EU, or the firm's external environment. Environmental Uncertainty (EU) is assumed to act as a moderator in this analyses' relationship between SC integration and innovation performance.

From a reductionist standpoint, organizations possess an internal environment, whereas consumers and suppliers are categorized as components of the external environment (Sinha et al., 2005). All internal development, quality, production, and adaptability-related actions are included in a company's operation performance and improvement. By improving its ability to shorten inventory turnaround times and reinforce its SC operations to meet unforeseen demand without incurring additional costs, a company can raise the effectiveness of its SCs. According to Wong et al., (2011), in a manner similar to this, a company's efforts to increase its ability to meet customer expectations through timely and correct order fulfilment increase SC effectiveness. Koufteros et al., (2005), however, noted that the knowledge, help, and collaboration of suppliers and consumers, who are situated in the external environment, are necessary for these responsibilities to be successful. The quantity, quality, and integration of such information are all impacted by the external environment's uncertainty.

The contingency hypothesis states that firms must adjust their organizational structures and operational procedures in response to their environment in order to realise the set objectives. According to this theory, businesses commonly change their corporate environments by utilizing a variety of externally focused techniques when they are faced with environmental uncertainty (Huang et al., 2014). Excessive uncertainty encourages businesses to integrate more deeply so they can "fit" into both their internal as well as external settings (Miller, 1992).

Galbraith (1973) claimed that as a supplement to the contingency theory and OIPT, organizations should endeavour to advance their information processing competencies so as to gather data for market analysis and demand forecasting. This is due to the fact that under circumstances of high uncertainty, there is unquestionably a need for the acquisition and processing of extra and rich information (Eisenhardt et al., 2010). Additionally, SCs need integrative techniques to compile data, oversee and coordinate company operations, and support quick choices (Koufteros et al., 2005).

I claim that the efficiency and efficacy of SC are significantly influenced by a firm's internal and external inputs, such as the timely and accurate availability of information on demand and supply. Both the degree of cross-functional performance gained through such integrations and the degree to which SC partner firms integrate across functional lines will be influenced by EU (Flynn et al., 2010; Huang et al., 2014). According to Eisenhardt et al. (2010), the analysis and synthesis of various data will enable integration and orientation for integration across various SC functions, enabling the development of new resources to boost innovation performance. Organizations will strive for strong integration across the SC in high EU environments with the intention to improve inventory control, boost operational versatility, minimise turnaround times, and foster timely operations, and enhance inventory control, eventually increasing SC efficiency. Integration orientation will push businesses to obtain information on market demands in order to increase responsiveness, same like high EU will encourage businesses to

target high SC integration. High degrees of cooperation between the EU and the SC boost corporate response, which will enable the creation of capabilities that will allow them to reduce order cycle times, reduce the likelihood of wrong order fulfilment, and boost innovation performance. Literature posits that uncertainty occurs when a firm finds it challenging to make judgments with limited information or accurate future projections. To improve their capacity for information analysis and to be adaptable in the face of unpredictability, businesses are pouring a lot of money into information technology. Within the field of healthcare organisations, the healthcare needs or demands of patients are dynamic, complicated and uncertain; hence, it is the requirement of healthcare facilities to navigate their dynamic healthcare environment and identify opportunities grasp them, and then adjust their resource allocations to gain a sustained competitive edge in a challenging healthcare market through the use of organization environmental uncertainties. Not differently, it is prudent that healthcare organisations, integrate, develop, and restructure internal and external resources such as supply chain innovation in order to be able to adapt to changes in the environment uncertainties of the demand of healthcare services from patients in the healthcare jurisdiction as stipulated by the dynamic capability theory.

As a result, it is advised that the following premises be drawn:

H5a/b/c/: Environmental uncertainty moderates the relationship between supply chain integration and innovation performance.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter delves into an investigation of how environmental uncertainty influences the connection between SC integration and healthcare innovation performance within Ghana's healthcare sector. Additionally, it explores the mediating influence of a learning orientation in this context. Within this chapter, we comprehensively discuss the research design, study location, target population, sampling methodology, data collection tools, data acquisition processes, ethical considerations, and data processing and analysis methods.

3.1 Research Paradigm

All scientific study must adhere to the research paradigm (Crewell, 2014). Research philosophy is the process through which research hypotheses, knowledge, and nature are developed (Saunders, Lewis, & Thornhill, 2015). In the context of research, scientists apply a philosophy known as scientific investigation to transform concepts into knowledge. In this field, there exist four primary research orientations: Positive research philosophy, Interpretivist research philosophy, Pragmatic research philosophy, and Realistic research philosophy.

According to Rao (2019), most researches prefer the application of precise and comprehensive data to be analysed, in addition to competency assessment, data gathering, theory formulation, and testing of hypotheses for inferences that constitute part of a component scientific analysis and which may explain the prominence of positivism. Objective ontology frequently corresponds nicely with positivist epistemology (Gorman and Macintosh 2015). This study is being motivated by positivism. Positivists support quantitative approaches such as structured questionnaires, sociological surveys and official statistics since they're reliable and the conclusions are of excellent generalization (Thompson 2015).

The research was conducted in accordance with the positivist school of thought, which maintains that only knowledge that is "factual" and derived from observation and measurement is trustworthy (Taylor & Medina, 2011). Taylor and Madina continued by stating that research outputs are typically observable and quantifiable and that the researcher's involvement in positivism is restricted to data gathering and objective data interpretation. There are also no provisions inside the study for human concerns, and the researcher is not connected to it. Statistical analysis is based on quantitative observations in positivism. The positivist worldview, which has an atomistic, ontological worldview, has also been recognized to be consistent with the empiricist idea that human experience is the source of knowledge (Collins, 2010).

Positivism holds in the objectively analysing and evaluating quantitative data and giving actual quality scientific evidence that is unaffected by socio- cultural factors (Neuman, 2006). The study argued that positivists logically tie abstract knowledge to concrete measurements of social reality and assert independence and impartiality during the evaluation of evidence and reproducing other researches. This research utilizes the positivists' paradigm as it intended to objectively establish the degree of outsourcing activities and its influence on organisational performance within the local government set up in the Ahafo region by employing methodologies which can be replicated. Collins (2010) claims that positivism is composed of distinctive, verifiable phenomena and occurrences which communicate in a predictable, regular, and observable way. The positivist concept was adopted because, in regard to the study's objectives, it asserts that anything that exists can be confirmed through experiments and observation.

3.2 Research Approach

Without a description of the research approach, a research design cannot be applied in the study. There are three approaches to a study namely: quantitative, qualitative and mixed approach as per Creswell (2014). The qualitative technique centres on the narrative as it tries to present the account of a given group's views in their own words. Most of qualitative studies follow an explanatory philosophy therefore the inductive technique whereby the researcher obtains data before seeking to derive insights from it.

According to Queiros, Faria and Almeida (2017), the quantitative approach is centred on numerical figures and gaining understanding of a subject; thus, this strategy will provide an improved study forum to evaluate the perceptions, attitudes and understanding of staff of local government service within the Ahafo Region through self-administered questionnaires. To this purpose, the researcher appreciated and acquired deeper insight into the issue under study by adopting a quantitative technique that delivers an in-depth and practical information.

The objective of quantitative research is to build and apply mathematical models, concepts and hypotheses in an effort to understand events. In quantitative research, the measuring technique is crucial because it makes the connection between real data and mathematical explanations of quantitative correlations. Based on this concept, the quantitative research strategy was taken into consideration. The use of quantitative methods, such as descriptive and inferential statistics, to describe the study's core topics is permitted under the quantitative approach (Hoover & Donovan, 2010). In order to investigate a relationship based on numerical values, the study adopted a quantitative methodology, which required the use of quantitative instruments like correlation. This study further uses quantitative research approach to achieve its objectives as the quantitative approach makes it possible to make a statistical generalisation of a study's findings (Saunders et al., 2009). The adoption of this approach hinges on its ability to give explanation to the relationship existing between two or more variables

3.3 Research Design

Research design is the blueprint for undertaking a study and it specifies the processes required to collect the needed data to structure and unravel the study's problems (Cooper and Schindler, 2003). It indicates where, how and when data can be obtained and analysed to meet a study's objectives (Parahoo, 2006). A research design, according to Burns and Groove (2003), is a framework for doing research with maximum control over factors that could impact the findings' validity. Polit, Hungler and Beck (2001, p.167), considered research design as "holistic approach for addressing a study's problem by obtaining answers to the research questions or hypothesis". The research design to be used in a study is typically decided by the topic under investigation and the research questions to be answered (Pansiri, 2009).

The study used an explanatory research design and a quantitative research methodology. Explanatory research also known as causal research on the other hand is applied for the studying of a phenomenon to examine its nature and level of cause-and- effect interactions (Yousaf, 2018). Explanatory design focuses on the investigation of a phenomena or circumstance or a specific issue to determine and explain the complexion of the relationship between the variables. Explanatory research attempts to scrutinize the validity of a principle or theory. It investigates what among the refuting explanations is satisfactory, provide ideas about a fundamental procedure, juxtapose issues by generalization, compose and expound a theory to either repudiate or certify an explanation (Neuman 2006).

A detailed and accurate explanation of an existing phenomena or issue is what an explanatory research design aims to collect. It provides benefits including gathering many responses from a wide spectrum of respondents, delivering accurate statistical data, and being used with greater assurance when posing specific questions of interest that require further explanation (Kothari, 2013).

3.4 Study Area and Population

The focus of the investigation was Ghana's healthcare facilities. The study focused on facilities in the metropolitan districts of Kumasi and Greater Accra. These two cities were the focus of the study because it was determined that they have the most health facilities in Ghana. In 2022, the Greater Accra Metropolis comes in second with 438 health facilities, trailing only the Kumasi metropolis with 530 facilities overall.

3.5 Target Population

According to Creswell (2012), a population is an entire set of things that have certain traits in common. Procurement managers, supply officers, Administrators, Executive Directors, and Medical Directors/Medical Superintendents of the healthcare industries in the chosen metropolises were the study's target demographic.

3.6 Sample Size and Sampling Technique

In order to guarantee the possibility of high accuracy, the study required sampling. This is a reference to the method of choosing respondents who are typical of the entire population. The study scientifically employed a sample to represent the full population because of time restrictions and the challenges of getting data from a big group. Based on the availability and willingness of the participants, a practical sampling strategy was adopted to include as many as possible.

Using the Cochran's formula for an unknown population shown below, the sample size for the study was determined;

$$N_o = \frac{z^2pq}{e^2},$$

Were,

N_o = sample size

Z = statistical parameter that depends on the confidence level (95%, 1.96)

P = estimated proportion of the population (40% = 0.4)

q = estimate of variance (1-p, 1-0.4 = 0.6)

e = margin of error (5% = 0.05)

$$N_o = \frac{(1.96)^2(0.4)(0.6)}{(0.05)^2}$$

$$N_o = \frac{(3.8416)(0.4)(0.6)}{(0.0025)}$$

$$N_o = 369$$

Thus, 369 individuals were sampled from selected healthcare facilities in the Kumasi and Accra cities of Ghana for the study. This group was made up of healthcare Administrators, Supply Officers, Medical Directors/Superintendents, Executive Directors, and Procurement Managers.

3.7 Data Collection Instrument

Based on the study's aims and methodology, a structured questionnaire was utilized as the main tool for gathering data from respondents. Each participant is required to respond to the same set of structured questionnaires in a specified sequence (Saunders & Lewis, 2012). Comparing it to other techniques like observation and interviews, which are suitable for qualitative research, it is the most suited because it is a significant data gathering tool used in quantitative research. In order to develop the questionnaire, it was necessary to research pertinent literature in light of the study's goals.

There were two components to the questionnaire, with section 'A' collecting data on the respondent's demographics and company characteristics. The objectives were covered in Section 'B's' questions.

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Table 3.1: Constructs/Measurement table

Construct	Measure Items	Sources
Learning orientation	<ul style="list-style-type: none"> • Our managers unanimously concur that the organization's capacity to acquire knowledge is paramount in gaining a competitive edge. • Within our organization, there is a prevailing belief that investing in employee education is an asset, not a liability. • Learning is perceived as an essential resource required for ensuring the survival of our organization. • Embedded within our organization's core values is the recognition of learning as a fundamental driver of improvement. • We actively engage in continuous dialogue within our organization to keep the insights garnered from our history alive. • We consistently evaluate unsuccessful organizational initiatives and disseminate the knowledge acquired on a broad scale. • We have established specific mechanisms for sharing insights gained from organizational activities across departments, units, and teams. • The senior management consistently underscores the significance of knowledge sharing within our organization. • Our organization's suppliers furnish us with information pertaining to production and procurement processes 	Kumar, V. et.al. (2020)
Supply Chain Integration (Supplier integration)	<ul style="list-style-type: none"> • Our organization's suppliers furnish us with insights on production and procurement processes • Our organization engages closely with our suppliers in the product development process. • We maintain a strong strategic partnership with our suppliers. 	Masood, N. K. et.al. (2019)

	<ul style="list-style-type: none"> • We collaborate extensively with our suppliers to establish efficient inbound ordering processes, ensuring rapid responses. • We utilize information technologies to share crucial information with our major suppliers. 	
Supply Chain Integration (Customer integration)	<ul style="list-style-type: none"> • We prioritize sharing market information with our major customers and employ information technologies for this purpose. • We engage in comprehensive joint planning and forecasting with major customers to enhance demand visibility. • Our customers actively provide us with information during the procurement and production processes. • Our customers play a role in our product development processes. 	Masood, N. K. et.al. (2019)
Supply Chain Integration (Internal integration)	<ul style="list-style-type: none"> • We prioritize high responsiveness within our plant to meet the needs of various departments. • We have implemented an integrated system that spans across different functional areas of plant control. • Within our plant, we emphasize the seamless flow of information among the purchasing, inventory management, sales, and distribution departments. • Within our plant, we emphasize the smooth flow of physical processes among production, packing, warehousing, and transportation departments 	Masood, N. K. et.al. (2019)
Environmental Uncertainty	<ul style="list-style-type: none"> • Our customers frequently alter their service preferences throughout the month. • The performance of our organization's suppliers can be quite unpredictable. • The marketing promotions undertaken by our organization's competitors often exhibit unpredictability. • Our organization's plant utilizes core production technologies that frequently undergo changes 	Masood, N. K. et.al. (2019)
	<ul style="list-style-type: none"> • Our organization have a high level of newness of the its new service 	

Healthcare Innovation Performance	<ul style="list-style-type: none"> • Our organization has a high speed of new service development • Our organization's speed with which it adopts the latest technological innovations in its processes and service delivery is great 	Kumar, V. et.al. (2020)
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Source; Author's construct, 2023

3.8 Data Collection Procedure

Before the data collection exercise, an introduction letter was issued by the Department of Supply Chain and Information System prior to the data collection exercise, and it was subsequently sent to various healthcare industries. This was done in order to obtain permission from the appropriate management to carry out the data collection exercise. The respondents received the questionnaire after receiving permission to do so.

The research, however, ran into a number of difficulties, including some respondents' reluctance to take part due to concerns about confidentiality and rigid scheduling. Additionally, some responders objected to the activity because it violated stringent facility's norms and moral standards. By making sure that the activity was only for academic objectives, these problems were reduced. It was also possible for respondents to complete the questionnaires at their convenience if they so wanted. These measures were put in place to motivate respondents to take part in the survey because their input is crucial in determining the outcome of the study.

3.9 Data Processing and Analysis

To guarantee the reduction or elimination of inaccuracies resulting from incomplete or incorrectly filled-out questionnaires, a thorough examination was conducted on the data collected during the exercise. To prevent missing values, the data was then carefully coded and corrected. IBM SPSS Statistics version 21 was used to process the data, and tables and figures were used to show the findings. Statistical tools for both descriptive and inferential analysis

were used to examine the produced data. The descriptive statistics utilized to analyse the study's findings were frequencies, percentages, and means.

3.10 Reflective and Formative indicators

According to Navarro, Losada, Ruzo, and Diez (2010), traditional measurement in business and business marketing research is based on reflecting indicators, where observable indicators reflect changes in latent variables. As per Diamantopoulos, the presumption is that alterations in the latent variable will manifest as modifications in all observable indicators, encompassing the multi-item scale. Consequently, the direction of causality is posited to flow from the latent variable toward the observed indicators.

This implies that formative indicators do not need to be internally consistent, whereas reflective indicators in classical test theory do (Coltman et al., 2008). Therefore, the decision rules should help the researcher choose whether to model a latent variable reflectively or formatively (Jahns & Moser, 2007). The operationalization of the variables is reflective for the purposes of this study since the observed indicators capture variations in latent variables and the path of causality extends from the latent variable to the seen indicators. All observable indicators, including a multi-item scale for the independent variables (Supply Chain innovations; supplier development; information technology; and quality management practice), are projected to alter in response to changes in the latent variable (HC Supply Chain Performance).

3.11 Validity and Reliability

Collecting empirical data that accurately reflect reality is essential for study. Data must be readily available and pertinent to the study questions (Saunders & Lewis, 2009). As a result, the ideal method for assessing a primary source is to use the validity and dependability ideas. According to Ronkko and Evermann (2013), the reliability level gauges how reliable the data

gathering process is. In the study, the reliability of the instrument will be evaluated using Cronbach's alpha. According to Cohen (2008), a reliability coefficient of 0.70 or higher was considered appropriate. The findings are displayed in the chapter after that.

While external validity covers the extent of generalizability, validity deals with reliability, or how well a study's findings correspond with reality (internal validity) (Ronkko and Evermann, 2013). How successfully data approaches measure what they are designed to measure is determined by the degree of validity. The fact that validity only considers a small sample size, which restricts the study's findings, is one of its main weaknesses. This has an effect on the findings since it limits the study's ability to draw definitive conclusions that apply to the entire population. Through questionnaire pilot testing, expert review, and peer review, the study's validity was demonstrated.

3.12 Ethical Considerations

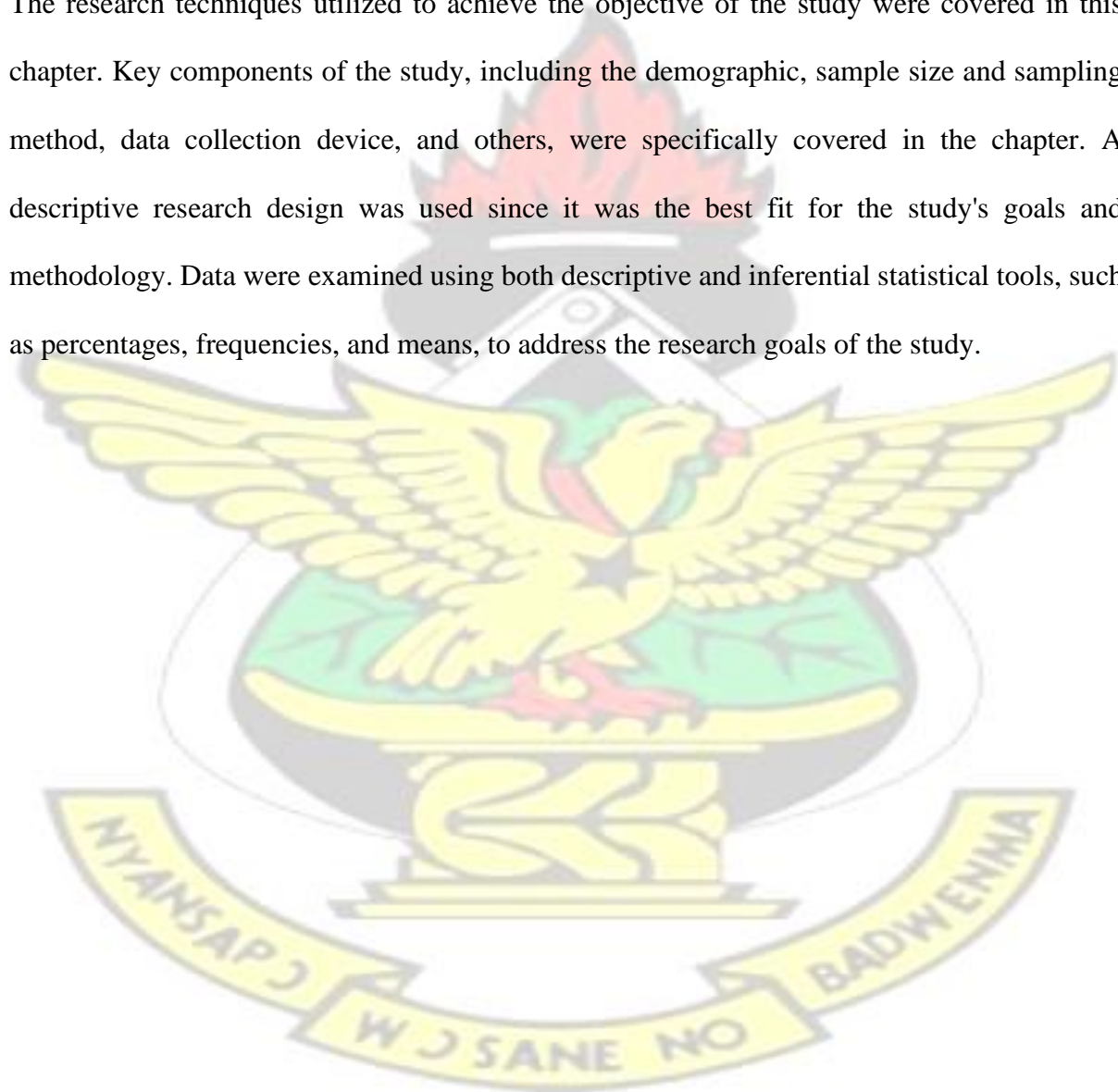
The main ethical concerns that need to be taken into account in any research, according to Patten and Newhart (2017), are informed consent, anonymity, and the right to privacy. Therefore, every effort was made to ensure that all ethical concerns were addressed. For instance, with voluntary participation, all responders will be permitted to take part willingly in the data collection process. Additionally, possible privacy concerns will be addressed by letting respondents finish the survey on their own and by instructing them to leave questions blank in order to provide additional information through a convenient media of their choosing.

In order to protect respondents' anonymity, the questionnaire did not allow them to enter their names or phone numbers. This will provide respondents peace of mind knowing that their identities won't be shared with the public or utilized in the study for any other purpose. Respondents were assured that all information will be kept private as part of the study's commitment to confidentiality. Additionally, respondents received guarantees that no

information they provided would be disclosed to the public or used against them. Last but not least, all pertinent materials acquired for the study will be appropriately referenced in order to avoid an ethical problem of plagiarism. Given this, the study included all significant ethical problems and considerations.

3.13 Chapter Summary

The research techniques utilized to achieve the objective of the study were covered in this chapter. Key components of the study, including the demographic, sample size and sampling method, data collection device, and others, were specifically covered in the chapter. A descriptive research design was used since it was the best fit for the study's goals and methodology. Data were examined using both descriptive and inferential statistical tools, such as percentages, frequencies, and means, to address the research goals of the study.



CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

This chapter of the research encompasses the presentation of collected data and its corresponding analysis. The analysis was carried through the use of descriptive statistics for the demographic characteristics of respondents and the items for the constructs as well as Pearson correlations, multiple regression, mediation and moderation analysis for the four objectives of the study. Data was presented using descriptive tables, correlation tables, regression tables, mediation and moderation tables.

4.1 Demographic Characteristics of the Respondents

The study sampled 132 respondents from selected healthcare facilities in two cities of Ghana (Kumasi and Accra) for the research. Out of the 132 respondents, most were working in district hospitals (41.7%), followed by respondents from regional hospitals (40.2%), teaching hospitals (11.4%) and finally, healthcare centres (6.8%). With regards to the profession of the respondents, most of the respondents were procurement managers (31.8%), followed by supply chain managers (20.5%), hospital administrators (32.6%), head of finance (7.6%) and finally, hospital accountants and hospital account officers were also equal in number (n=5, 3.8%). Most of the respondents (54.5%) had their healthcare facility earning an annual revenue of over 120,000 cedis, followed by respondents whose healthcare facility earns from 80,000-120,000 per year (20.5%), followed by respondents whose healthcare facility earns from 40,000-80,000 per year (17.4%) and few of the respondents (7.6%) had their healthcare organization earning an annual revenue of less than 40,000 cedis.

Concerning the work experience of the 132 respondents, majority of them (65.2%) had 6-10 years of work experience and almost one-third of the respondents (31.1%) had 0-5 years of

work experience. Few of the respondents (3.8%) had work experience of 10 years and over.

Table 4.1 summarises the demographic characteristics of the respondents.

Table 4.1: Demographic characteristics of the Respondents

Characteristics	Frequency	Percentage
Hospital Type		
Regional hospital	53	40.2
Healthcare centre	9	6.8
District hospital	55	41.7
Teaching hospital	15	11.4
Profession of Respondents		
Hospital accountant	5	3.8
Hospital account officer	5	3.8
Hospital administrators	43	32.6
Procurement managers	42	31.8
Supply chain managers	27	20.5
Head of finance	10	7.6
Work experience of the Respondents		
	41	31.1
0-5 years	86	65.2
6-10 years	5	3.8
10 years and over		
Annual revenue of the facilities		
Less than 40,000 cedis	10	7.6
40,000-80,000 cedis	23	17.4
80,000-120,000 cedis	27	20.5
120,000 cedis and over	72	54.5

Source: Field Survey, June-July, 2023

4.2 Reliability Test for Study Constructs and Corresponding Items

The SPSS software was employed to test the reliability of study constructs through the corresponding construct items used using the Cronbach alpha reliability analysis. The results showed that all corresponding construct items used met the minimum requirement (0.70 coefficient) for the acceptance of reliability of study construct and items.

Table 4.2: Reliability Test for Study Constructs and Corresponding Items

Construct	Number of items Used	Cronbach Alpha Coefficient
Learning Orientation	9	0.939
Supply Chain Integration	13	0.979
Environmental Uncertainty	4	0.877
Innovation Performance	3	0.949

4.3 Descriptive Statistics of Study Constructs and Corresponding Items

This research employed four constructs to accomplish its goal. They were learning orientation, SC integration, environmental uncertainty and innovation performance. The research employed a seven-point Likert scale (strongly disagree, disagree, somewhat disagree, neither agree nor disagree, somewhat agree, agree and strongly agree) to solicit the relevant information from the 132 respondents using the research construct items. Learning orientation comprised of 9 corresponding items, supply chain integration comprised of 13 corresponding items, environmental uncertainty was made up of 4 corresponding items and innovation performance was comprised of 3 corresponding items. The overall mean score for learning orientation was 5.79 and that of its standard deviation (SD) was 1.409. The overall mean score for supply chain integration was 5.13 and that of its standard deviation (SD) was 1.622. The overall mean score for environmental uncertainty was 4.33 and that of its standard deviation (SD) was 1.402. The overall mean score for innovation performance was 54,96 and that of its

standard deviation (SD) was 1.442. The skewness and Kurtosis for each construct was computed and represented using histograms respectively in figure 2, figure3, figure 4 and figure 5.

4.4 Descriptive Statistics of Study Constructs and Corresponding Items

CONSTRUCT AND CORRESPONDING ITEMS	MEAN	SD
LEARNING ORIENTATION		
Our managers unanimously concur that the organization's capacity to acquire knowledge is paramount in gaining a competitive edge.	6.11	1.24.
Within our organization, there is a prevailing belief that investing in employee education is an asset, not a liability.	5.92	1.51
Learning is perceived as an essential resource required for ensuring the survival of our organization.	5.68	1.33
Embedded within our organization's core values is the recognition of learning as a fundamental driver of improvement.	6.14	1.28
We actively engage in continuous dialogue within our organization to keep the insights garnered from our history alive.	5.67	1.45.
We consistently evaluate unsuccessful organizational initiatives and disseminate the knowledge acquired on a broad scale.	5.71	1.55
We have established specific mechanisms for sharing insights gained from organizational activities across departments, units, and teams.	5.51	1.69
The senior management consistently underscores the significance of knowledge sharing within our organization.	5.59	1.57
Our organization's suppliers furnish us with information pertaining to production and procurement processes	5.62	1.60
SUPPLY CHAIN INTEGRATION		
Our organization's suppliers furnish us with insights on production and procurement processes	6.04	1.28
	6.09	1.37

Our organization engages closely with our suppliers in the product development process.	5.94	1.33
We maintain a strong strategic partnership with our suppliers.	5.83	1.48
We collaborate extensively with our suppliers to establish efficient inbound ordering processes, ensuring rapid responses.	5.80	1.46
We utilize information technologies to share crucial information with our major suppliers.	5.74	1.62
We prioritize sharing market information with our major customers and employ information technologies for this purpose.	5.92	1.40
We engage in comprehensive joint planning and forecasting with major customers to enhance demand visibility.	5.73	1.29
Our customers actively provide us with information during the procurement and production processes.	5.80	1.46
Our customers play a role in our product development processes.	5.94	1.33
We prioritize high responsiveness within our plant to meet the needs of various departments.	5.92	1.40
We have implemented an integrated system that spans across different functional areas of plant control.	6.64	1.62
Within our plant, we emphasize the seamless flow of information among the purchasing, inventory management, sales, and distribution departments.	5.74	1.55
Within our plant, we emphasize the smooth flow of physical processes among production, packing, warehousing, and transportation departments.		
ENVIRONMENTAL UNCERTAINTY		
Our customers frequently alter their service preferences throughout the month.	6.0	1.29
The performance of our organization's suppliers can be quite unpredictable.	5.62	1.60
The marketing promotions undertaken by our organization's competitors often exhibit unpredictability.	5.69	1.61
Our organization's plant utilizes core production technologies that frequently undergo changes	5.86	1.41
INNOVATION PERFORMANCE		
Our organization have a high level of newness of the its new service	5.58	1.70
		1.68

Our organization has a high speed of new service development	5.70	1.41
Our organization's speed with which it adopts the latest technological innovations in its processes and service delivery is great	5.86	

Source: Field Survey, June-July, 2023

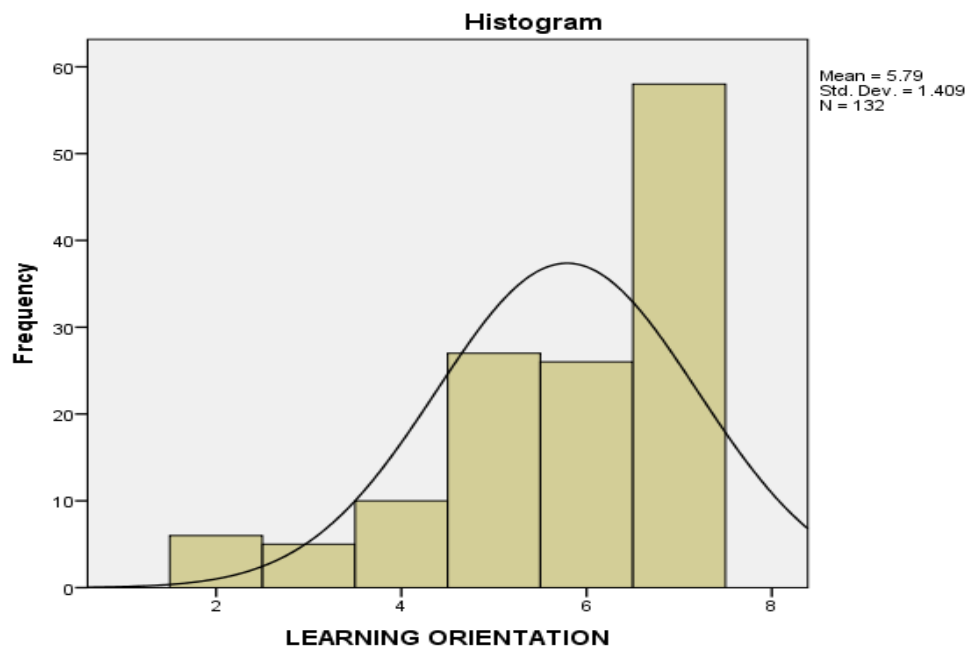


Figure 4.1: Skewness and Kurtosis for learning orientation

Skewness = -1.112 Kurtosis = 0.529

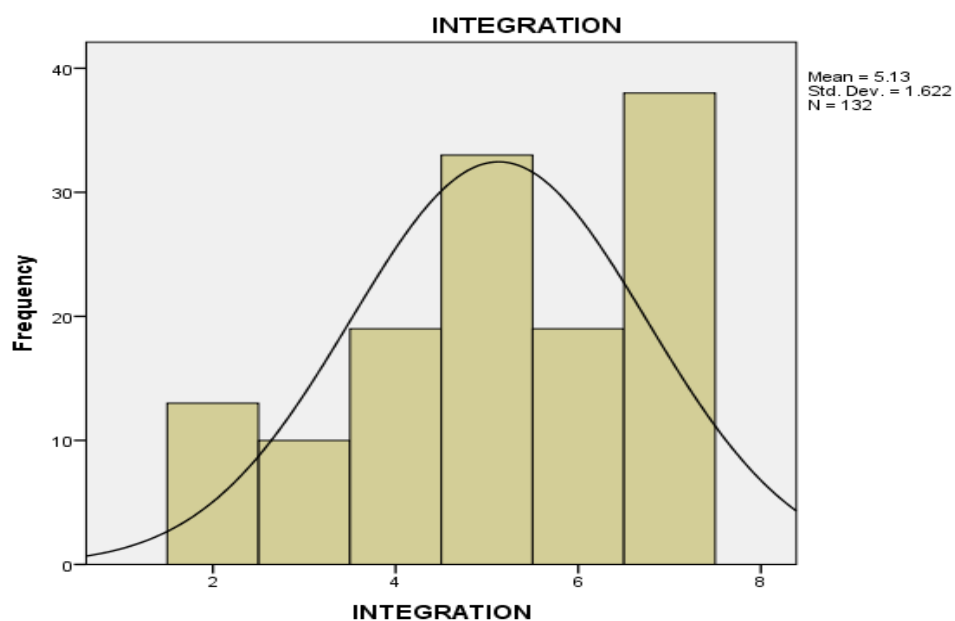


Figure 4.2: Skewness and Kurtosis for Supply Chain Integration

Skewness= -0.473 Kurtosis = -0.810

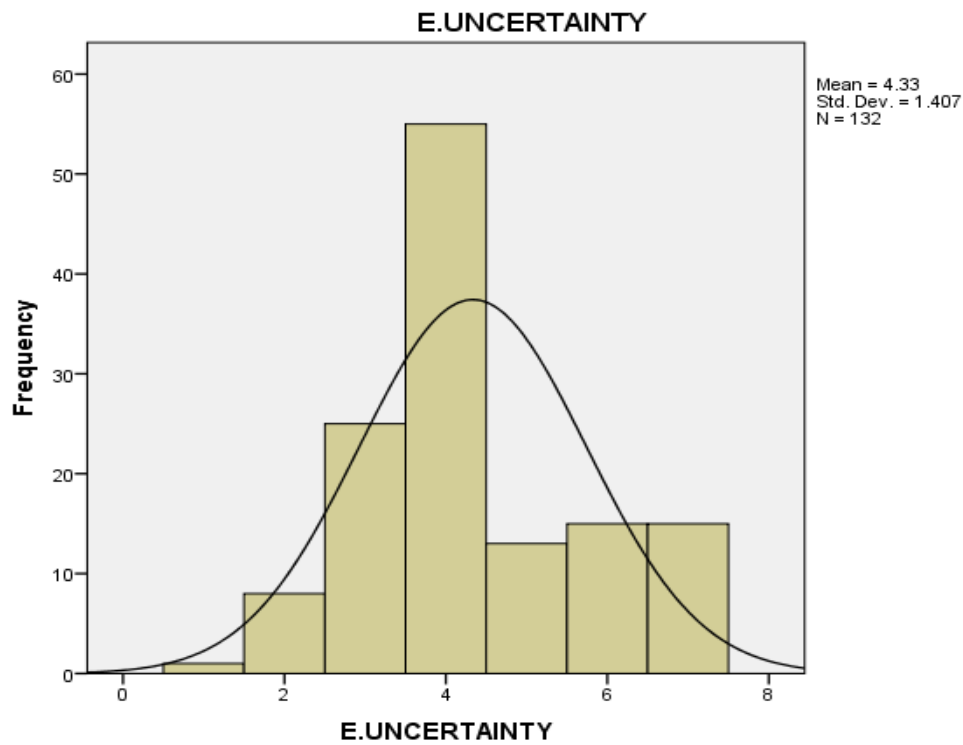


Figure 4.3: Skewness and Kurtosis for Environmental Uncertainty

Skewness = 0.439 Kurtosis= -0.384

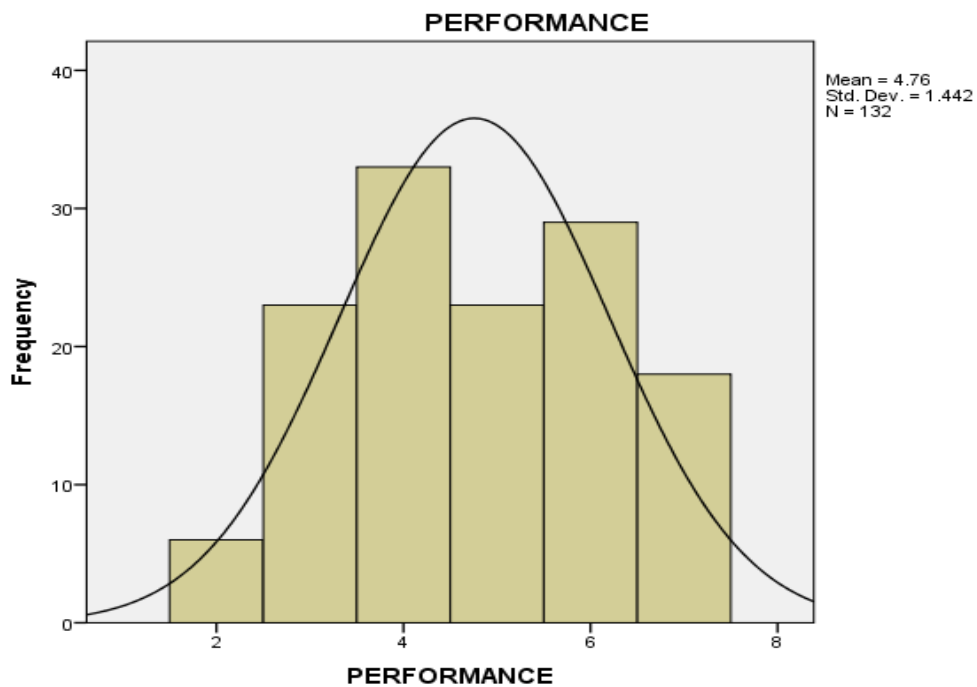


Figure 4.4: Skewness and Kurtosis for Innovation Performance

Skewness = -0.016 Kurtosis = -0.419

4.4 Pearson Correlation Test and Analysis

The research employed the Pearson correlation test in SPSS to examine the result of two of the proposed hypotheses. They were the relationship between learning orientation and innovation performance (H1), the relationship between learning orientation and SC integration (H2) and the relationship between SC integration and innovation performance (H3). The Pearson correlation test results revealed that the relationship between learning orientation and innovation performance was positive and significant ($p < 0.05$) thus H1 is supported. Also, the relationship between learning orientation and SC integration was positive and significant ($p < 0.05$) thus H2 is supported and finally, the relationship between SC integration and innovation performance was also positive and significant thus H2 was also supported ($p < 0.05$).

Table 4.3: Pearson Correlation Result for the Relationship Between Learning Orientation and Innovation Performance.

		Correlations	
		LEARNING ORIENTATION	PERFORMANCE
LEARNING ORIENTATION	Pearson Correlation	1	.908**
	Sig. (2-tailed)		.000
	N	132	132
PERFORMANCE	Pearson Correlation	.908**	1
	Sig. (2-tailed)	.000	
	N	132	132

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

Table 4.4: Pearson Correlation Result for the Relationship Between Supply Chain Integration and Innovation Performance

Correlations		INTEGRATION	PERFORMANCE
INTEGRATION	Pearson Correlation	1	.889**
	Sig. (2-tailed)		.000
	N	132	132
PERFORMANCE	Pearson Correlation	.889**	1
	Sig. (2-tailed)	.000	
	N	132	132

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

Table 4.5: Pearson Correlation Result for the Relationship Between Learning Orientation Supply Chain Integration

Correlations		L.ORIENTATION	INTEGRATION
L.ORIENTATION	Pearson Correlation	1	.894**
	Sig. (2-tailed)		.000
	N	132	132
INTEGRATION	Pearson Correlation	.894**	1
	Sig. (2-tailed)	.000	
	N	132	132

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

Table 4.6: Summary of Pearson Correlation Results

	LO	INT	IP
LO	1	.894**	.908**
INT	-	1	.889**
IP	-	-	1

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

LO= Learning Orientation INT= Supply Chain Integration IP= Innovation Performance

4.5 Regression Test and Analysis

The research employed the Regression test in SPSS to examine the proposed hypotheses. They were first, to examine the effect of LO on innovation performance (H1). Second, to examine the effect of LO on SC integration (H2) and finally, to examine the effect of SC integration on innovation performance (H3). Results revealed that the effect of LO on IP was positive and significant ($\beta = 0.563$, $p < 0.05$) thus H1 is supported. Also, the effect of LO on SC integration was positive and significant ($\beta = 0.894$, $p < 0.05$) thus H2 was also supported and finally, the effect of SC integration on IP was also positive and significant ($\beta = 0.386$, $p < 0.05$) thus H3 was also supported.

Table 4.7: Multiple Regression Result for the Effect of Learning Orientation and Supply Chain Integration on Innovation Performance

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1.033	.250		-4.125	.000
LEARNING ORIENTATION	.701	.094	.563	7.489	.000
SC INTEGRATION	.461	.090	.386	5.143	.000

a. Dependent Variable: INNOVATION PERFORMANCE

Table 4.8: Regression Result for the Effect of Learning Orientation on Supply Chain Integration

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.429	.242		1.771	.079
LEARNING ORIENTATION	.934	.041	.894	22.808	.000

a. Dependent Variable: SC INTEGRATION

4.6 Mediation Result and Analysis

The third hypothesis for this research was on mediation. The research sought to examine the mediating role of SC integration on the effect of LO on IP. The research employed the Hayes Process Macro to carry out this examination. The Hayes Process Macro mediation results showed that the total effect of learning orientation on innovation performance was positive and significant ($p < 0.05$). Also, the direct effect of LO on IP was positive and significant ($p < 0.05$). Furthermore, the indirect effect of LO on innovation performance through SC integration (the mediator) was positive and significant (LLCI= .1564; ULCI=.9462). Mediation results showed that SC integration mediated the effect of LO on innovation performance. Thus, the third hypothesis (H4) was supported.

Table 4.9: Mediation Analysis

Model Summary

R	R-sq	MSE	F	df1	df2	p
.9081	.8246	.4103	611.3060	1.0000	130.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.8354	.2706	-3.0868	.0025	-1.3707	-.3000
L.ORIENT	1.1309	.0457	24.7246	.0000	1.0404	1.2214

Standardized coefficients

coeff
L.ORIENT .9081

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI	c'_cs
1.1309	.0457	24.7246	.0000	1.0404	1.2214	.9081

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI	c'_cs
.7005	.0935	7.4889	.0000	.5155	.8856	.5625

Indirect effect(s) of X on Y:

Effect	BootSE	BootLLCI	BootULCI
INTEGRAT	.4303	.1981	.1564 .9462

4.7 Moderation Result and Analysis

The fourth and final hypothesis for this research was on moderation. The research sought to examine the moderating role of Environmental Uncertainty on the effect of supply chain integration on IP. The research employed the Hayes Process Macro to carry out this examination. The Hayes Process Macro moderation results showed that the moderator (Environmental Uncertainty) did not moderate the effect of SC integration on IP (Interaction effect = .0309; $p = 0.4569$). Thus, H5 was not supported.

Table 4.10: Moderation Result and Analysis

Model Summary

R	R-sq	MSE	F	df1	df2	p
.8906	.7931	.4916	163.5930	3.0000	128.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	5.6617	.0910	62.1836	.0000	5.4815	5.8419
INTEGRAT	1.2671	.1954	6.4858	.0000	.8806	1.6537
E.UNCERT	-.1531	.1436	-1.0666	.2881	-.4372	.1309
Int_1	.0309	.0415	.7462	.4569	-.0511	.1130

Product terms key:

Int_1 : INTEGRAT x E.UNCERT

Table 4.11 Summary of Regression Results

Hypothesis	Hypothesis path	Beta	P-value	Decision
H1	Learning Orientation → Innovation Performance	.563	0.000	Supported
H2	Learning Orientation → Supply Chian Integration	.894	0.000	Supported
H3	Supply Chian Integration → Innovation Performance	.368	0.000	Supported
H4	Learning Orientation → Supply Chian Integration → Innovation Performance		LLCI=.1564 ULCI=.9462	Supported
H5	SC Integration → L. Orientation ↑ Environmental Uncertainty	.0309	0.4569	Rejected

4.8 Discussion of Results

4.8.1 The Effect of Learning Orientation on Innovation Performance

The first objective of this study was to investigate the effect of LO on IP. Thus, this research postulated that learning orientation has a positive effect on IP (Hypothesis 1). Regression results carried out revealed that the effect of learning orientation (LO) on innovation performance (IP) was positive and significant ($\beta = 0.563$, $p < 0.05$) hence H1 was supported. Researchers have posited that organizational LO is a derivative of organizational learning theory and drives the organization in the direction of learning, according to Calantone et al., (2002) and Fang et al. (2014). More so, learning orientation covers a variety of actions involved in the production and use of knowledge. It has four elements: a commitment to learning, a shared objective, an open mind, and the sharing of knowledge within the company (Calantone et al., 2002; Jyoti & Dev, 2015).

Within the context of healthcare facilities, LO plays an essential role in the provision of a variety of healthcare services to patients. The healthcare needs of patient continue to change and new ones continues to evolve due to the constant changes in disease patters or forms in addition to healthcare problems that confront individuals. As a result, it is prudent that management of healthcare institutions make it a deliberate attempt to learn of new systems or services to develop innovations to tackle these dynamic and emerging healthcare issues among individuals. Therefore, healthcare organisations that fail to acquire new knowledge of healthcare regimen and share it among their staff, stakeholders, suppliers, clients and departments within their organization for innovation development rationale will not be able to satisfy their clients always and consistently. An example of such LO in healthcare organisations is the learning of better ways of providing healthcare to create the Electronic Medical Records technology to offer better and efficient healthcare services to their clients or patients (Campanella et al., 2016). Particularly, electronic health records have been shown to reduce medical errors and enhance information sharing between management and clinicians, ensuring improved coordination among healthcare workers. Studies have also shown that Electronic Medical Records could reduce mortality among the severely sick (Manaktala & Claypool, 2017; Lammers et al., 2018) and also enhances patient satisfaction (Campanella et al., 2016). Therefore, LO in healthcare organizations for instance, led to IP through the introduction of Electronic Medical Records. This assertion has been confirmed by other researchers in other organisations. For instance, according to other studies (Calantone et al., 2002; Rhee et al., 2010; Sheng et al. 2016), there is a direct association between an organization's commitment to innovation and its LO. In reality, the learning process synchronizes the organization with both its internal and external settings (Abdulai et al. Yusuf, 2012) and also significantly contributes to the company's capacity to adapt to the quick and complex environmental changes (Huang & Li, 2017). This procedure aids the business in gathering, analysing, and disseminating crucial

data and knowledge, which can encourage the growth of abilities such as creativity, strategic decision-making, and the creation of new services and goods (D'Angelo & Presutti, 2018).

It is anticipated that new information would improve performance in terms of process speed and the success rate of new products, in addition to the introduction of new goods and services. By using newly acquired knowledge to move through the stages of the new product development process in a more effective and efficient manner, organizations can improve their performance in innovation. Thus, acquiring new knowledge and sharing it in the entire organization will enable the organization to create new ideas, systems or products to satisfy their customers or clients thus signifying an improvement in their IP as well as the overall performance of the entire organization. With regards to this information, the outcome of this research supports the claim in literature that learning orientation in organisations improves their IP (D'Angelo & Presutti, 2018; Hongming, Changyong & Chunhui, 2007; Jeihoony et al., 2019). However, on the contrary, findings differ from a prior study that showed that learning has no direct effect on innovation performance. (Emerald, 2016). Discrepancies in methodologies, sample size, eligibility criteria and organisation type and strategies could influence this variation.

4.8.2 The Mediating Role of Supply Chain Integration on The Effect of Learning Orientation on Innovation Performance

The third hypothesis for this research was on mediation. This research sought to examine the mediating role of supply chain integration on the effect of LO on innovation performance. Thus, the study postulated that supply chain integration mediates the effect of learning orientation on IP (Hypothesis 4). Results showed that the indirect effect of LO on innovation performance through SC integration (the mediator) was positive and significant (LLCI= .1564; ULCI=.9462). Thus, the fourth hypothesis (H4) was supported. Thus, suggests that the SC integration influenced the effect of LO on IP or the effect of learning orientation on innovation

performance depends on the nature or extent of SC integration. This finding was highly expected as the effect of LO on IP was positive and significant ($p < 0.05$), the effect of learning orientation on supply chain integration was positive and significant ($p < 0.05$) and the effect of SC integration on IP was also positive and significant ($p < 0.05$). This result implies that for a successful IP to be achieved through an effective LO mechanism in organisations or firms, LO process has to be properly or effectively integrated within the supply chain components of these firms or organisations. In this research concerning healthcare organisations, it could be asserted that all LO mechanisms or systems of these organisations have been effectively integrated or shared with their stakeholders, clients, customers or suppliers and as such, their suggestions given, assessments, feedbacks, views and stance have enabled the healthcare organisations to have a better and effective innovative strategy implemented and utilized. This ensures that the innovation performance of the healthcare organization is improved or enhanced. Research have pointed out that LO covers a broad variety of actions involved in the production and use of knowledge. It consists of four elements: a commitment to learning, a shared objective, an open mind, and the sharing of knowledge within the company (Calantone et al., 2002; Jyoti & Dev, 2015).

During the integration of innovation in organisations for instance, suppliers are given access to information together with design specifications for products through SC integration with upstream parties, which is important if the integration is taking place downstream (Griffin & Hauser, 1996). Moreover, the success of new service is increased by early supplier involvement in product development and coordinated development of new services with them (Ragatz, Handfield, & Scannell, 1997). This is because they engage in reciprocal procedures that encourage rich information exchange and because they launch information technology infrastructures that make it simpler to get information from their partners (Malhotra et al., 2005; Wu, 2008). As such, integration with vendors in the supply chain can improve the circulation

of information inside the company, and these vital components can encourage and sustain innovation of organisations. This confirms that for organisations or firms to witness an improvement or enhancement in their innovation achievements, it is very important for them to effectively integrate their learning orientation that yields innovation with their various stakeholders such as customers, suppliers, stakeholders and workers. This strategy will improve the performance of their innovation prospects.

4.8.3 The Moderating Role of Environmental Uncertainty on The Effect of Supply Chain Integration on Innovation Performance

This research finally sought to examine the moderating role of Environmental Uncertainty on the effect of supply chain integration on innovation performance. The study posited that environmental uncertainty moderates the effect of SC integration on IP (Hypothesis 5). Results showed that the moderator (Environmental Uncertainty) did not moderate the effect of SC integration on IP (Interaction effect = .0309; $p = 0.4569$). Thus, H5 was not supported. This finding suggests that environmental uncertainty did not influence the level or direction of the relationship or effect of SC integration on IP in this study. However, it is expected that within healthcare organization where this research was carried out, due to the dynamic situation of healthcare needs of patients as well the unpredicted nature of strategies used by competitors, these organisations will factor environmental uncertainty especially the unpredictable nature of healthcare demands from their clients or customers in their SC integration and innovation prospects. As a result, these healthcare organisations are likely to witness decline or dip in their innovation achievements due to failure to recognize the role environmental uncertainty plays in the provision of requisite service to patients or clients as well as in the competitive market when for instance, their customers or clients often change their service preference over the month or when their organization competitors' actions regarding marketing promotions are unpredictable.

On the contrary, research have posited that the degree of cross-functional performance gained through integrations and the degree to which SC partner firms integrate across functional lines will be influenced by EU (Flynn et al., 2010; Huang et al., 2014). Not differently, according to Eisenhardt et al. (2010), the analysis and synthesis of various data will enable integration and orientation for integration across various SC functions, enabling the development of new resources to boost innovation performance. More so, organizations will strive for strong integration across the SC in high environmental uncertainties environments in order to increase production flexibility, reduce cycle times, promote just-in-time operations, and enhance inventory control, eventually increasing SC efficiency. Furthermore, integration orientation will push businesses to obtain information on market demands in order to increase responsiveness, same like high environmental uncertainties will encourage businesses to target high SC integration. High levels of environmental uncertainties- SC integration will increase firm responsiveness, which will enable the creation of capabilities that will allow them to reduce order cycle times, reduce the likelihood of wrong order fulfilment, and boost innovation performance (Eisenhardt et al., 2010). Hence, the finding of this research in this regard was contrary to prior researches that established that environmental uncertainty influences the direction or level of the effect of SC integration on IP in organisations. Perhaps, the management of the healthcare organisations where the research was carried out have not effectively prioritized the incorporation of environmental uncertainty within their SC integration and innovation prospects or dimension.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION, RECOMMENDATIONS

5.0 Introduction

This section presents a summary of the research findings, the author's concluding remarks as well as recommendations for organisations involved in the study likewise other similar ones and the research world for further studies.

5.1 Summary of Findings

This research sought to assess the effect of learning orientation (LO) on innovation performance (IP) of healthcare industries in Ghana coupled with the mediating role of SC integration and moderating of environmental uncertainty. This research was conducted among selected healthcare industries in Ghana using 132 respondents.

This research sought to examine the effect of LO on IP as the first objective. Thus, this research postulated that learning orientation has a positive effect on innovation performance (Hypothesis 1). Regression results carried out revealed that the effect of learning orientation on innovation performance was positive and significant ($\beta = 0.563$, $p < 0.05$) hence H1 was supported.

This research also sought to examine the mediating role of supply chain integration on the effect of learning orientation on innovation performance. Thus, the study postulated that supply chain integration mediates the effect of learning orientation on innovation performance (Hypothesis 4). Results showed that the indirect effect of learning orientation on innovation performance through supply chain integration (the mediator) was positive and significant (LLCI = .1564; ULCI = .9462). Thus, the third hypothesis (H4) was supported. Thus, suggests that the supply chain integration influenced the effect of learning orientation on innovation

performance or the effect of learning orientation on innovation performance depended on the nature or extent of supply chain integration.

This research finally sought to examine the moderating role of Environmental Uncertainty on the effect of supply chain integration on innovation performance. The study posited that environmental uncertainty moderates the effect of supply chain integration on innovation performance (Hypothesis 5). Results showed that the moderator (Environmental Uncertainty) did not moderate the effect of SC integration on innovation performance (Interaction effect = .0309; $p = 0.4569$). Thus, H5 was not supported. This finding suggested that environmental uncertainty did not influence the level or direction of the relationship or effect of SC integration on innovation performance in this study.

5.2 Conclusion

The process of innovation entails acquiring, sharing, and applying new knowledge to improve the performance of organizations. Literature has also discovered that there is a wide agreement that learning orientation and firm innovation are highly correlated. Companies thriving in emerging markets with efficient supply chains have come to recognize that innovation, specifically a firm's ability to innovate within its supply chain, is a critical factor for their sustained success and continued existence. The concept of innovativeness encompasses a multifaceted process, involving the management of technological and environmental uncertainties (EU) while striving to generate fresh, unique, and valuable products, procedures, and concepts to meet customer requirements. This capacity empowers companies to address the ever-evolving demands of swiftly changing markets, as they actively strive for innovation. Hence, learning orientation play a key role in the improvement of innovation performance notwithstanding the critical contribution of environmental uncertainty and supply chain integration. This research contributes to the supply chain management literature through the

development of an integrated framework that expands understanding of how learning orientation contributes to improving innovation performance in healthcare organisations and how supply chain integration mediates this relationship.

5.3 Limitations of the Study

The study's findings and recommendations, while insightful within the health sector, possess limitations in terms of applicability and generalization to a broader context due to the constrained sample size and focus of the research. To enhance the external validity of future studies, it is imperative to broaden the sample size by incorporating diverse industries and countries. This approach would facilitate a more comprehensive understanding of the subject matter and contribute to the feasibility of generalization beyond the health sector.

In terms of research methodology, the study employed quantitative techniques for data collection and analyses, utilizing a questionnaire to gather valuable insights. While this approach provided essential information, the study could benefit from a more comprehensive examination through the inclusion of qualitative data, such as interviews. Integrating qualitative methods would offer a more nuanced understanding of the topic, potentially uncovering additional layers of insight and enriching the overall research findings. Therefore, for future research endeavors, a dual-method approach incorporating both quantitative and qualitative data collection techniques could provide a more holistic perspective on the subject. This multifaceted approach would not only bolster the robustness of the findings but also enable a more comprehensive exploration of the intricacies surrounding the variables under investigation.

5.4 Recommendations for Managers

a. This research discovered that learning orientation impacts positively on innovation performance. Therefore, this research recommends that healthcare organisations whether public or private who wishes to improve upon their innovation performance must ensure that effective learning orientation mechanism or process in their organization is instituted, promoted and sustained consistently in all situations. This strategy will ensure that their innovation performance witnesses growing trends which will in turn positively impact on their overall performance.

This research discovered that environmental uncertainty (EU) did not mediate the effect of supply chain integration on innovation performance for which it is contrary to what literature holds on the influence of environmental uncertainty on innovation performance. Due to this discovery, this research recommends that healthcare organisations must pay rapt attention to uncertainties particularly those emerging from their suppliers, clients or competitors. This strategy will significantly enable healthcare organisations to remain competitive in the market irrespective of their innovation performance.

5.5 Recommendations for Policy Makers

a. This research found that supply chain integration impacted positively on innovation performance as well as mediating the effect of learning orientation impacts positively on innovation performance. As a result, this research advocates that learning orientation must be properly and effectively integrated with customers, supplier and other stakeholders of healthcare organisations. This venture when successfully implemented will contribute immensely to improve innovation performance of healthcare organisations.

b. From a policy perspective, this research finding suggests that regulatory bodies and policymakers may not need to tailor specific policies or interventions based on environmental

uncertainty to foster innovation performance through supply chain integration. Instead, efforts could be directed towards creating a conducive overall business environment that encourages and facilitates supply chain integration, as the study indicates that the relationship between SC integration and innovation performance remains robust despite variations in environmental uncertainty.

5.6 Recommendations for Future Studies

The study, while contributing valuable insights, is not without its limitations, thereby underscoring the need for future research avenues. It is crucial to note that this research focused exclusively on health sector in Ghana, limiting the generalizability of its findings to other industries. To enhance the applicability and robustness of the results, it is recommended that the scope of future studies be expanded to encompass diverse countries and sectors. Different industries and nations may exhibit distinct concerns and needs, potentially influencing the outcomes of similar studies. A promising direction for future research involves conducting a comparative study across various countries to discern whether the findings observed in Ghana hold true in different international contexts. This approach would enable researchers to identify commonalities or variations in the relationships under investigation, shedding light on the universality or specificity of the proposed relationships across diverse settings.

Furthermore, an important aspect overlooked in the current study is the role of information technology (IT) as a crucial element that can facilitate learning orientation. To address this gap, future research endeavors should incorporate IT as an antecedent of learning orientation, exploring how technological advancements influence the development of organizational learning capabilities. This inclusion could provide a more comprehensive understanding of the factors shaping learning orientation and, subsequently, organizational responsiveness.

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KNUST



APPENDIX A

RESEARCH QUESTIONNAIRE

<p>My name is Yuoraa Clement Diibare. I am a Postgraduate student at Kwame Nkrumah University of Science and Technology School of Business, Department of Supply Chain and Information System, Kumasi. This survey instrument has been designed to enable me carry out research on <i>The Impact of learning orientation on the performance of healthcare innovation among healthcare industries in Ghana.</i> The purpose of the research is to provide an understanding of Supply Chain Integration Dimensions (mediator) and Environmental Uncertainty (Moderator) which influence healthcare innovation in Ghana. Any information provided will <u>ONLY</u> be used for general information, and it will be treated as <u>HIGHLY CONFIDENTIAL</u>.</p>								
<p>INSTRUCTIONS: Please kindly write in ink in the box which corresponds to the statement, which in your opinion is the most appropriate answer to the related question. For the following questions, kindly select by checking (✓) all that apply.</p>								
<p>Title or Job Position in the Organization: _____</p>	<p>How long have you worked in this company <input type="checkbox"/>0-5yrs <input type="checkbox"/>6-10yrs <input type="checkbox"/>10+yrs</p>							
<p>Please place a check in your organization's corresponding type</p>	<p><input type="checkbox"/>Health Centre <input type="checkbox"/>Private Clinic and Maternity; <input type="checkbox"/>District Hospital; <input type="checkbox"/>Nursing Training College <input type="checkbox"/>Teaching Hospital; <input type="checkbox"/>District Health Directorate <input type="checkbox"/>Other (specify) _____</p>							
<p>Please indicate the Revenue of the Organization in New Ghana Cedis</p>	<p><input type="checkbox"/> <40,000; <input type="checkbox"/> 40,000-80,000; <input type="checkbox"/> 80,000-120,000; <input type="checkbox"/> 120,000-160,000; <input type="checkbox"/> 160,000-200,000; <input type="checkbox"/> 200,000-500,000; <input type="checkbox"/> 500,000-1,000,000; <input type="checkbox"/> >1,000,000</p>							
<p>Instructions: Indicate your opinion for the following statement by placing a checkmark (✓) in the right column under the 7-point Likert Scale.</p>								
		<p>7-point Likert Scale</p>						
		Strongly Disagree	Moderately Disagree	Disagree	Neither Agree nor Disagree	Agree	Moderately Agree	Strongly Agree
<p>LEARNING ORIENTATION</p>								
<p>Our managers unanimously concur that the organization's capacity to acquire knowledge is paramount in</p>								

gaining a competitive edge							
Within our organization, there is a prevailing belief that investing in employee education is an asset, not a liability							
Learning is perceived as an essential resource required for ensuring the survival of our organization							
Our organization's basic values include learning as key to improvement.							
Embedded within our organization's core values is the recognition of learning as a fundamental driver of improvement							
We actively engage in continuous dialogue within our organization to keep the insights garnered							

from our history alive							
We consistently evaluate unsuccessful organizational initiatives and disseminate the knowledge acquired on a broad scale							
We have established specific mechanisms for sharing insights gained from organizational activities across departments, units, and teams.							
The senior management consistently underscores the significance of knowledge sharing within our organization							
Our organization's suppliers furnish us with information pertaining to production and procurement processes							

SUPPLY CHAIN INTEGRATION							
Our organization's suppliers furnish us with insights on production and procurement processes							
Our organization engages closely with our suppliers in the product development process.							
We maintain a strong strategic partnership with our suppliers							
We collaborate extensively with our suppliers to establish efficient inbound ordering processes, ensuring rapid responses							
We utilize information technologies to share crucial information with our major suppliers.							
We prioritize sharing market information with							

our major customers and employ information technologies for this purpose							
We engage in comprehensive joint planning and forecasting with major customers to enhance demand visibility							
Our customers actively provide us with information during the procurement and production processes							
Our customers play a role in our product development processes							
We prioritize high responsiveness within our plant to meet the needs of various departments.							
We have implemented an integrated system that spans across different							

functional areas of plant control.							
Within our plant, we emphasize the seamless flow of information among the purchasing, inventory management, sales, and distribution departments							
Within our plant, we emphasize the smooth flow of physical processes among production, packing, warehousing, and transportation departments							
ENVIRONMENTAL UNCERTAINTY							
Our customers frequently alter their service preferences throughout the month.							
The performance of our organization's suppliers can be quite unpredictable.							
The marketing promotions undertaken by our organization's competitors often							

exhibit unpredictability							
Our organization's plant utilizes core production technologies that frequently undergo changes							
INNOVATION PERFORMANCE							
Our organization have a high level of newness of the its new service							
Our organization has a high speed of new service development							
Our organization's speed with which it adopts the latest technological innovations in its processes and service delivery is great							