KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

AN INVESTIGATION INTO THE MANAGEMENT OF SUPPLY CHAIN RISKS OF SELECTED HOSPITALS IN THE WESTERN REGION OF GHANA

BY

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DECLARATION

I, Emmanuel Bo-ib, hereby declare that this submission is my own work towards the Masters of Science in Procurement and Supply Chain Management and that to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any degree of the University, except where due acknowledgement has been made in the text.

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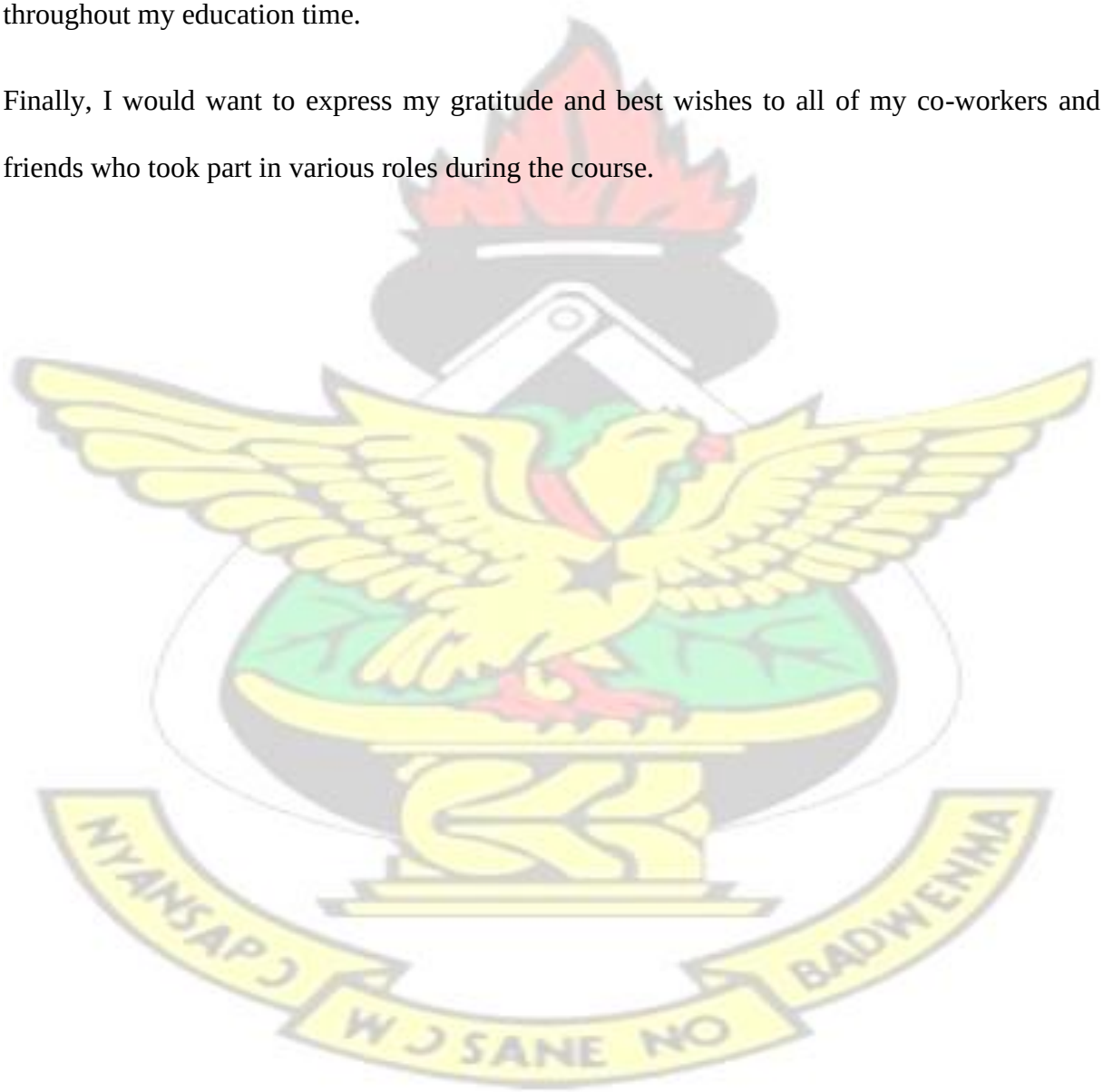
DEDICATION

This project is dedicated to the Almighty God for the strength He bestowed on me.

ACKNOWLEDGEMENT

I want to express my sincere gratitude to the All-Powerful God for giving me the gift of life, health, and the willpower to finish the program. My sincere appreciation is extended to my supervisor and two other incredibly gifted individuals who contributed to and oversaw my work. I'd want to express my sincere gratitude to my family for their encouragement and support throughout my education time.

Finally, I would want to express my gratitude and best wishes to all of my co-workers and friends who took part in various roles during the course.



ABSTRACT

A country's health is a leading indication of its economic progress and growth. As a result, using the wrong supply chain risk management techniques to manage the healthcare supply chain might have a negative impact on how well hospitals function and result in the loss of many lives. Therefore, the study looked at how supply chain risk management practices affected how well hospitals in Ghana's Western Region performed. More importantly, the study explored how healthcare supply chain performance is affected by supplier management strategy, inventory management strategy, and final mass distribution strategy and how it may affect patients' happiness with the hospitals under investigation. The network hypothesis and asset-based perspective hypothesis were used to assist the investigation. The positivist thinking, quantitative approach, and logical strategy are all applied to the assessment. Organized surveys were administered to unit heads of emergency hospitals and patients in the Western Region, utilizing the enumeration and basic arbitrary examination procedures. Using the Partial Least Square - Structural Equation Modelling, the investigation discovered that store network hazards the board techniques including provider the executives, stock administration, and last mass circulation the board have a critical effect on medical care inventory network execution, which prompts patients' fulfilment. As a result, the research suggests that hospitals in the Western Region implement all of the aforementioned management practices in order to enhance hospital performance.

LIST OF ABBRAVETIONS

CMS	Central Medial Store
CSM	Cerebal Spinal Meningitis
GHIs	Global Health Initiatives
GHS	Ghana Health Service
HC	Health Care
HCD	Healthcare Delivery
HCSC	Healthcare Supply Chain
HP	Hospital Performance
HSCP	Hospital Supply Chain Performance
IMS	Inventory Management Strategy
LMDM	Last Mass Distribution Management
NT	Network Theory
RBV	Resource Based View
RMS	Regional Medical Store
SCM	Supply Chain Management
SCMP	Supply Chain Management Performance
SCR	Supply Chain Risk
SCRM	Supply Chain Risk Management
SCRMS	Supply Chain Management Strategies
SDP	Service Delivery Strategy
SMS	Supplier Management Strategy

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Improving people's health is a crucial part of development, and many nations' efforts to advance their economy and the lives of their people depend on doing so. Improved access to high-quality health care and nutrition services acts as a method to attaining all other personal and social goals since health is a key indicator of economic growth and development of a nation. This is due to the fact that medical care is one of the United States' highest out-of-pocket expenditures. A large body of high-quality research dating back to antiquity shows that health is crucial to promoting both long-term and fair development. The roots of this inquiry go back to antiquity.

Weil (2014) and Bloom and Canning argue that better health is directly linked to longer life spans, higher rates of workforce engagement, and more economic output (2018). Hospitals, using the network paradigm, should implement appropriate medical supply management measures to reduce supply chain risk. The strategies may be broken down into five categories: supplier management, inventory management, ultimate bulk quantity distribution, risk sharing, and knowledge sharing.

Throughout the past decade, substantial resources have been allocated to global health projects in developing nations to tackle diseases including TB, HIV/AIDS, and malaria (Storeng, Prince and Mishra, 2019). In the long term, a nation's economic and social progress depend on the health of its citizens, thus it's crucial that healthcare access be promoted (World Health Organization, 2010). Therefore, expanding access to high-quality healthcare services is a crucial step in the process of accomplishing any and all other individual and social objectives.

The third Sustainable Development Goal's (SDG) focus on ensuring and promoting the health and well-being of all people throughout their lives explains why this issue has attracted attention from people all around the world. This goal necessitates that all individuals, families, and communities have ready access to the comprehensive, high-quality healthcare services they need to facilitate the shift toward more productive and equitable society and economies. Universal health care coverage is also required to achieve this objective. Numerous causes, including increasing expenses, a rise in government restrictions, intensifying rivalry, and pervasive diseases, have put a severe strain on the healthcare business (Acharyulu and Shekbar, 2012). As a consequence, healthcare companies should work to provide value all throughout the health logistics supply chain. The term "supply chain" is often used to describe the series of steps involved in getting goods and services to the end user.

Healthcare supply chain management may be complex and disorganized at times (Moons, Waeyenbergh and Pintelon, 2018). Donato, Roth, and Parry (2017) argue that the growing demand for healthcare and logistics services places additional strain on public and private supply chains because stricter regulatory oversight is needed to ensure the quality of these more numerous products. This is due to the fact that the demand for these services is increasing quicker than the pace at which they can be regulated. Lenin (2014) argues that the management of risk in the supply chain is the primary barrier that must be surmounted if the healthcare delivery system is to improve its performance and service. It appears that the industry will face challenges, such as the rising demand for high-quality treatment, the advancement of technology, and the alteration of disease patterns, all of which contribute to rising healthcare costs.

Supply chain risk management should incorporate a framework that helps management assess and rank concerns about ongoing and prospective service delivery (Mentzer, 2008). In spite of geographical variation, the difficulties encountered by healthcare professionals are universal. Breen's research shows that in the event of customer dissatisfaction, rising healthcare costs, increased competition, and fewer worries about the necessity of service reimbursement, supply chain management in the United Kingdom becomes an essential and fundamental component of supply chain management (2008). Research conducted by Munyuko in 2005 at Nairobi's Jomo Kenyatta University of Agriculture and Technology demonstrates a correlation between supply chain risk management and business success.

The authors of another study, Wieland and Wallenburg (2012), found that supply chain risk management provides useful tools and techniques for reducing the effects of uncertainty and complexity in the health industry. When the supply chain was managed properly, this was shown to be the case. In addition, healthcare delivery relies heavily on supply chain risk management, the failure of which might lead to the company's demise (Kumar, Ozdama and Zhang 2008; Kayoma and Khomba, 2013). Burns (2008) argues that manufacturers, purchasers, suppliers, and payers are all weak links in the hospital supply chain, and that each of these influences the level of patient satisfaction with their treatment.

Burns claims it is made up of two distinct supply chains: the inside hospital supply chain and the outward patient supply chain (producers, purchasers, distributors and payers). The goal of supply chain risk management is to coordinate and control every step of the production process, from acquiring raw materials to reselling finished goods. This includes everything from determining customer needs to resolving conflicts between different departments (Wang, 2018). Supply chain management (SCM) is a system that helps original suppliers integrate key

end-user activities, such as providing clients and other stakeholders with products, services, and information with added value. Supply chain management is often abbreviated as "SCM."

Due to the large number of potentially applicable types and procedures in varying quantities, the medical services manufacturing network is inherently unique and different from that of conventional production network executives. This is because the supply chain for providing healthcare services is quite different from the one managed by CEOs in other industries (Wang, 2018). As a result, it seems that the medical care sector, as opposed to the manufacturing sector, is the recipient of a greater number of multi-complexity coordinations. There are a number of key differences between standard mechanical stock networks and the emergency clinic supply chains that are in use today. It's a structure rife with unpredictability that requires a buildup of resources like manpower and goods to meet the needs of patients (Schneller and Smeltzer, 2006).

The quality of healthcare services provided in hospitals has long been the subject of intense scrutiny, despite the fact that Ghana spends billions of Ghanaian cedis on the healthcare sector to ensure that the general public receives high-quality healthcare services by providing medical logistics. This is according to Adu-Poku, Asamoah, and Abor (2011). It's been like this despite the fact that Ghana spends billions of cedis on healthcare every year. As a consequence, Ofosu-Kwarteng (2012) argues, public hospitals are able to deliver worse care and treatment compared to their private counterparts. When compared to the public's expectations for Ghana's performance, this indicates a decline in the quality of healthcare services. A following research was conducted by Adrinah, Awuah, Aikins, and Dush in the Ashanti area of Ghana's Ashanti Province (2014). Even though their populations are just 60-80% of those in affluent countries,

impoverished countries spend a disproportionately large amount of money on health-related commodities, according to this research.

By using these methods, medical centers can monitor stock, anticipate patient needs, and make appropriate preparations (Leendertse, van den Bemt, and Egberts, 2006). In their study, De-Vries and Huijsman (2011) analyzed the effects of collaboration between healthcare professionals. They reasoned that suppliers could be reluctant to band together due to a lack of defined demand and high operational expenses, and that even if they did, the move would have little effect on their net profit. Contrarily, Alexander et al. (2017) noted that supply chain integration in the healthcare industry may save costs and improve the quality of services. To perform their main and secondary duties, healthcare service providers rely on a wide variety of instruments, including syringes, prescription medicine, instructions, plumes, paperwork, computers, hearing aids, nasal masks, aprons, boots, and hand gloves. Plumes, paperwork, and listening devices are among more tools.

Supply chain structure (Kwon, Kim, & Martin, 2016) has a substantial impact on the timeliness, reliability, and cost of these inputs, which in turn affects hospital performance metrics like patient satisfaction, operational effectiveness, and care quality in Ghana's private and public healthcare facilities (Nartey, Aboagye-Otchere and Simpson, 2020). Many researchers have examined the relationship between hospital supply networks and supply chain risk management. Many of these studies have shown that supply chain risk management solutions have a direct impact on the efficiency of hospital supply chains and the level of satisfaction felt by patients.

1.2 Statement of the Problem

Over the course of the last several years, Ghanaian executives, medical professionals, and academics have identified the provision of health care in the public sector as one of the most pressing issues facing the nation. This progression may be linked, at least in part, to the industry's function as suppliers of medical care because of how it has evolved. In the course of their major and secondary tasks, medical professionals make use of a wide variety of instruments. Some examples of these items are prescription medications, needles, pens, gloves, paperwork, and computers. In the course of their employment, they are required to wear a variety of protective gear, including hearing aids, nasal masks, aprons, boots, and hand gloves. Access to these resources is heavily dependent on the availability of a trustworthy supply chain system (Kwon, Kim, and Martin, 2016), which always has an influence on operational efficiency, and the quality of treatment in both commercial and public hospitals in Ghana.

The provision of healthcare in the healthcare industry was exposed to a number of dangers as a result of the dependency of the business practices of the companies that made up the supply chain for health resources. These dangers were present due to the fact that the failure of a single component or organization could bring the entire system of providing medical care to patients to a halt. This would put the lives of medical professionals in jeopardy and lead to deaths that could have been prevented within the healthcare facilities. According to the explanation that was provided by Munyuku (2015), risk is an unavoidable component of companies, and it is the responsibility of each firm to manage it in a manner that is suitable for its size and the way in which it conducts its operations. Because of this, risk management in the supply chain is an essential component of the whole health care system, as well as an essential component of the successful functioning of hospitals on a global scale.

The medical supply chain of Ghana seems to be plagued with breaches, which may be partially caused by the use of centralized storage systems. For instance, Adu-Poku, Asamoah, and Abor (2011) pointed out that there is a lack of coordination of patient demands throughout the process of procurement planning, a delay in paying suppliers, poor delivery time by suppliers, and delayed procurement processes. On the other hand, Oware, Samanhyia, and Ampong (2016) found that hospital suppliers are not adequately involved in their procurement processes. This causes a disruption in the supply chain of hospitals' supplies and opens the door to the possibility of drug theft, drug shortages, and drug expiration. In addition to this, Oware,

Pandemic illnesses such as cerebrospinal meningitis, cholera, malaria, and tuberculosis have persisted in the Western Region for an abnormally extended length of time throughout the whole of the course of human history. CSM was the cause of 103 fatalities in the Western Region during the years of 2010 and 2013, 25 maternal deaths in 2016, and 43 CSM deaths that were recorded in the year 2020. (WR GHS, annual report for 2016, as well as annual report for 2020) However, the essential emergency reaction to these reoccurring pandemics, both in the present and in the past, has been inappropriate and just too dreadful. This is the case in both the present and the past. In most cases, there are problems with inadequate medical supplies, delays in supply chains, or chain theft. As a consequence of this, medical professionals have been helpless to prevent the deaths of productive individuals, and hospitals, in general, have been unable to meet their basic operational needs.

SCRM is still in its infancy; hence, the authors and the vast majority of the researchers working in this topic often come from other disciplines that are already well established. Despite the fact that this variety can make it more difficult for researchers to interface with business and to work

together with other academics, The three primary areas in which scholars have the most divergent opinions are as follows:

1. a lack of clarity over the definition of SCRM, with some people believing that its applicability should be limited to rare but major incidents while others believe that it should encompass demand-supply uncertainty;
2. a process gap: there is a shortage of research on an important component of risk management, notably the response to supply chain risk occurrences; and 3. a process gap: there is a dearth of research on an important part of risk management.
3. a deficit in methodological understanding: the discipline of SCRM has only a limited amount of empirical research available.

There are now three voids that need to be filled in order for research on supply chain risk to reach any kind of consensus. The researcher is worried about these problems because they have a significant impact on the likelihood of achieving the overall aims and objectives associated with the change. In addition, there is a severe lack of empirical study on the potential dangers posed by supply chains in hospitals located in the western area. The current study, which will explore both the potential and the inherent problems that hospital administration faces in reference to supply chain risks, will ideally address this gap in knowledge. The research will look at both the potential and the inherent obstacles.

It is necessary to carry out a network theory assessment of the effect that theory has on hospital performance in order to get an understanding of the challenges that are associated with supplying the basic supplies to the hospitals located in the Western Region. This is as a result of the fact that previous studies, such as the ones that were published in WHO (2009) and Manso

et al. (2013), have shown that supply chain risk management is still an essential component in deciding the quality of medical care that is provided in Ghana. This is the reason why this is the case. It is vital to conduct this study in order to determine the influence that pharmaceutical supply management has on the degree of happiness experienced by patients in the area as well as the effectiveness of the delivery of healthcare.

1.3 Research Objectives

The investigation's underlying purpose led to the development of the subsequent objectives. In particular, the probe aimed to find:

i. determine the impact of supplier management strategy on patient satisfaction and hospital supply chain performance in the Western Region;

ii. examine how hospital supply chain performance and patient satisfaction in the Western Region are affected by inventory management strategy;

iii. evaluate the impact of the most recent mass distribution management strategy on patient satisfaction and hospital supply chain performance in the Western Region;

iv. analyze the impact of patient satisfaction in the Western Region on hospital supply chain performance.

1.4 Research Questions

i. What is the impact of supplier management strategy on patient satisfaction and hospital supply chain performance in the Western Region?

ii. What is the supply chain performance and satisfaction in the Western Region affect the inventory management strategy?

iii. What is the impact mass distribution management strategy on patient satisfaction and hospital supply chain performance in the Western Region?

iv. What is the impact of patient satisfaction in the Western Region on hospital supply chain performance?

1.5 Significance of the Study

The results of this study will be useful for public and private hospitality management and management in the High West area and Ghana as a whole in addressing the quality of service shortcomings and developing a road map for the development of quality in health service. Moreover, the study's findings will serve as a road map for future studies on the effects of medical supply management practises on healthcare service quality on the part of academics and researchers. This is useful not just for patients, but also for healthcare providers, buyers, and administrators. In terms of theoretical ramifications, the study's findings would be a substantial addition to the current body of knowledge.

The findings of this study will be useful to both government agencies and non-profits as they work to develop and implement policies for better managing the medical supplies used to maintain public health. Finished product might put researchers in jeopardy in terms of hospital efficiency and supply chain management if an appropriate procedure wasn't followed. Knowledge gaps might be filled using the study's findings to inform policy and practise changes in medical supply management. The results of the research would explain this. Simply put, this study was conducted to add to the current literature on the subject. This means that it may serve as a resource for other scholars to learn from and build upon. The study's results will ultimately be used as a springboard for more research.

1.6 Summary of Research Methodology

A thorough literature review was performed as part of the research approach to provide context for the study's findings. Both the choose network theory and the theory based on available resources are discussed in this section. Additionally, there was a debate of ideas, detailed audits, and a well-thought-out method of assessment. The second part of this analysis will focus on the research strategies that were used over the course of the investigation.

1.7 Ethical Considerations

Several ethical considerations were present in my thoughts when I carried out my action study. In conducting this study, I will not provide any information that might be used to identify individual patients, nurses, or physicians. We take these measures to ensure the privacy of our users and to ensure that they feel secure in our system.

In addition, I will meticulously document and arrange all of the data. All information must be gathered and used in its unaltered form, including results, findings, methods, and processes. This is done so that the final results of the study are completely accurate and not the result of any manipulation. In addition, I will approach the hospital administration to see whether I need their permission to do my research. Patients, as well as the doctors and nurses caring for them, need to be made aware that they are taking part in a research study. A letter of authorization will be given to the hospitals for this purpose.

I will brief the hospital administration about the study in a manner that is easy to understand. The purpose of this is to protect the participants' rights while they are receiving medical care. Therefore, students will be able to comprehend the goals and purposes of the training. Further, I will neither push or scare the hospitals into taking part in this study. And, of course, anybody

may leave anytime they like. The participants are given the chance to provide input and take part in the inquiry and study.

1.8 Limitations

Specifically, only Western Region hospitals were included in the analysis. This included the Western Region's Regional Hospital as well as its constituent District Hospitals. This means that the study can only generalise about a subset of W/R hospitals when drawing conclusions and making recommendations. In addition, the poll will focus only on the opinions of influential respondents. Any action taken on the basis of such false information might be misleading. Information gathering from participants was limited, particularly in relation to the study's concept, due to the research's reliance on closed-ended question items and rating scale question items. This is because the respondents provided no further commentary beyond answering the questions on the survey. None of the interviewers, the lack of questions, or the inaccessibility of interviewees impacted the results.

1.9 Organization of the Study

It was planned that there will be a total of five sections covering various topics on this chapter. The report's first chapter lays the groundwork for the rest of the work by detailing the investigation's background, the problem's specifics, the rationale for conducting the inquiry, the study's overarching goals, the questions to be answered, the terminology used, and the broader context in which the study was conducted. The second chapter analysed the supporting materials obtained in the investigation. A fictitious survey, a mock audit, and a convincing control structure were highlighted. In Chapter 3, we discussed tactics that included the exploratory strategy. information on sample size, types of tests administered, geographic scope, study areas, data sources, data cleaning and analysis procedures, and more Chapter 4 discussed

the findings and discussion, while Chapter 5 provided an overview of the analysis, its findings, and its suggestions for further research. Some suggestions for further research were presented in Chapter 5.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This study set out to see whether there was a correlation between the efficiency with which the Western Region's hospitals managed their medical supply chains and the quality of care that their patients received. For the research section of the study, an extensive literary analysis is presented in relation to the study's aims. Focusing on the study's theoretical framework, empirical research, and overall conceptual framework, this chapter provides extensive coverage of those topics.

2.1 Theoretical Review

The study's foundations were network theory and resource-based vision because of how closely they related to its research goals. The study's research objectives were outlined in this part, which also included network and resource-based theories.

2.1.2 Network Theory

As a means of investigating the relationships between people, Jocob Moreno introduced the network theory in 1930. (Andridge & Little, 2010). Time passed, and the notion was ultimately clarified to the point where it could be included into the preeminent behavioural and social sciences (Bellamy & Basole, 2013). A great deal of written work has made use of the network theory to build logical connections between individuals, teams, and organisations (Nagurney, Cruz, Dong & Zhang, 2005; Bellamy & Basole, 2013). In its most fundamental form, network theory examines the cooperative relationships that exist between firms and their suppliers, customers, and other organisations throughout the supply chain. This idea postulates that strong

bonds between people may be formed via open and honest dialogue, mutual dedication, the willingness to adapt to one another, and the pooling of strengths (Scott, 2011).

Study relevance comes from the theory's emphasis on the importance of hospitals' ability to work together with their supply chain partners to maximise resource utilisation (Cheng et al., 2012). Hospitals' performance improves when they build relationships with supply partners like hospital suppliers, with whom they may share risks and duties, get access to valuable resources, and establish mutual trust. The two parties benefit equally from this kind of partnership. Hospitals may reduce their exposure to supply chain risk by building strong, mutually beneficial relationships with important players in the supply chain, including as manufacturers, distributors, retailers, and hospital pharmacies.

Because of this, Western Region hospitals may use supply chain risk management strategies like strategic supplier relationship management and supplier cooperation to better manage supply chain risk. Supply chain management techniques that prioritise developing strong connections between hospitals and suppliers provide evidence of the applicability of network theory to this investigation.

2.1.3 Resource Based-View Theory

The RBV hypothesis is a central financial hypothesis that emphasises the importance of developing one's own resources as a source of competitive advantage. This theory gained popularity mostly in the 1990s and latter 1980s, thus it has been revised to include new findings (Bohnenekamp, 2013). One of the most surprising financial theories was used to defend the asset-based strategy, which ensured that internal assets prevailed. The RBV, as described by Dierickx and Cool (1989), Barney (1991), and Petraf, explores the connection between an organization's core competences and its performance as a whole (1993).

When firms adopt an asset-based strategy, assets may be moved from one project to another, and asset differences can persist over time to serve as a source of competitive advantage (Barney, 1991). Many innovations and partnerships may be seen as RBV-based efforts to acquire a financial edge over competitors.

The firm's assets should be sizable, unique, unreplicable, and irreplaceable in order to provide it a competitive advantage. The RGV also relied on the constant upkeep and reevaluation of minor details inside its own exchanges to give its executives a leg up in stock management and ultimate mass appropriation (Bohnenekamp, 2013). Focusing on one's abilities and sharing critical skills with external partners are essential for reassessing options or managing provisions (Halldorsson et. al., 2007). This makes the current research very significant and vital for testing the RBV theory.

Top limits of SCM include items like using current mass appropriation, data innovation, and central ability, all of which are part of these asset supply chains. in comparison to the storage network's capacity, the SCMP's (Blome et. al, 2014). An experienced member of the production network board will evaluate a company's SSP building skills, inventory network involvement, and force-like information communication skills in the same way as RBV would. A company's ability to leverage data innovation to forecast demand, implement inventory network strategies, mitigate risk, and strategically choose high-quality suppliers are also considered. The network's ability to work together to produce goods is itself a resource that might be regarded unique, crucial, and difficult to replicate. As a result, the network would gain an advantage (Fawcett et al., 2011; Hartmann and De Grahl, 2011).

Improving healthcare delivery and performance requires a strong emphasis on risk sharing and the transfer of knowledge, both of which may be fostered by better management of all human resources at hospitals in the UWR. The concepts highlighted the importance of each link in the health logistics supply chain in the Western Region and the interconnected nature of its main players. The concepts also highlighted the interconnected nature of the Eastern Region's health logistics' main players. There is significance in every step, from the farmers to the hospital patients who ultimately benefit.

There is a genuine threat. The board responsible for monitoring supply chains must consider not only the actual risks but also the potential resources and competencies that may be used at various points in the cycle. Asset-based approach was used for this study because it highlights the differences in risk management and board capabilities of the stock network performance. In addition, this method has the potential to highlight which aspects of therapeutic administration need the most attention.

2.2. Conceptual Review

A conceptual review is a type of research that examines and synthesizes existing knowledge on a particular topic. It is different from a traditional literature review, which focuses on summarizing the findings of individual studies. Instead, a conceptual review aims to develop a deeper understanding of a concept or phenomenon by exploring different theoretical perspectives and identifying key themes and patterns.

Conceptual reviews are often used in academic research to inform new studies or to develop new theoretical frameworks.

2.2.1. Healthcare Performance Evaluation

Every organizational activity entail risk that must be controlled. In addition to the risk inherent in providing healthcare, healthcare institutions must meet community expectations for safety and effective service delivery (Mishra, 2019; Vilko, 2012). To this aim, patients anticipate high levels of quality service delivery whenever they visit a hospital, especially in the healthcare industry. In order to satisfy every patient that visits these hospitals, it is essential for the administration of hospitals in the Western Region to provide services diligently.

Yap and Tan (2012) define performance measurement as the degree to which a firm satisfies its financial objectives, clientele, and market requirements. Therefore, the degree of patient satisfaction, organisational coordination, and supply chain integration are all possible metrics to consider when evaluating a hospital's medical supply chain management.

Typical measurements of organisation success include financial performance, customer satisfaction, learning and growth product sales performance, and shareholder returns, as stated by Pinna, Carrus, and Marras (2015) and Yap and Tan (2012), respectively. In addition to product sales, other KPIs include employee development and shareholder returns. For this reason, the Western Region's primary hospitals' annual performance reports might be used to evaluate how they stack up against one another in terms of providing patients with access to care and necessary support services.

2.2.2 Ghana's Healthcare Delivery System's Supply Chain

In order to better organise the country's medical supply infrastructure, the Ghanaian Ministry of Health has created a Master Plan on the Supply Chain. The plan's objective was to boost supply levels by improving operational demand estimations, streamlining administrative procedures, and boosting leadership performance (Ministry of Health, 2012). Because of this,

the Ghana Health Service is focusing its efforts on developing a more efficient logistical delivery system with the ultimate goal of enhancing healthcare in the country as a whole.

The Ghana Health Service's Department of Logistics, Clearing, and Warehousing has developed the following vision statement: The first part of our mission statement is as follows: 1) "Transportation and Logistics: Our aim is to provide our clients an edge in their respective markets by offering outstanding services in each of these areas." Customers' expectations for service are our first priority, therefore we'll keep them updated and provide just the best information at all times. Furthermore, we will reach our objective by committing to providing first-rate service, service with added value, and constant management innovation: The second function of warehouses is to stock medical supplies so that hospitals and clinics always have access to them at reasonable costs. We are committed to being a hub of excellence and a secure and reliable supplier of health commodities, and we use only the best practises while storing and transporting pharmaceuticals and protective gear (Ministry of Health, 2012, p.2).

Pharmaceutical companies that sell ingredients, procurement organisations including government health departments, non-profits, and even the United Nations are all integral links in the health logistics supply chain. Distributors include shippers, regional distributors, neighbourhood pharmacies, and retail service locations, as stated by Manso, Annan, and Anane (2013). Most hospitals in Ghana and the Western Region are public, hence this model is essential to the distribution of medical supplies. Producers (including wholesalers, distributors, and retailers), Suppliers (including wholesalers, distributors, and retailers), Regional Medical Facilities (RMF), Central Medical Facilities (CMF), Service Delivery Points (SDP), and Transportation Networks all make up the Supply Chain (Labi et al., 2018; Manso, Annan & Anane, 2013).

This supply chain strategy illustrates that medical goods including pharmaceuticals and personal protective equipment (PPE) are sent to hospitals in the Western Region. The Central Medical Store is responsible for receiving, storing, and distributing all commodities purchased by the Ministry of Health in the domain of logistics to the many major Regional Medical Stores. After that, the lowest rung is supplied by the Western Regional Medical Store. Medical suppliers in the region should be able to meet the demands of nearby hospitals since they cater specifically to that area.

The Western Region of Ghana is home to a wide variety of medical facilities, including: the Father Thomas Alan Rooney Memorial Hospital, the Nagel Memorial Hospital, the Nana Hima Dekyi Hospital, the Saint John of God Hospital, the Saint Martin de Porres Hospital, the Seventh-Day Adventist Hospital, and the Sycamore Medical Centre. Every one of these major facilities may get the medical supplies they need from the Effia Nkwanta Regional Hospital Store. Each location has its own method for storing and transporting vaccines using a cold storage network and a variety of refrigerators. Most of them are situated inside the same regional healthcare centre.

In each location, a different Regional Health Administration (RHA) oversees a medical supply warehouse that serves as a stock organisation for local businesses (Labi et al., 2018). If a hospital receives money from the Ministry of Health, it may then buy supplies and equipment from the firms that make them. The Central Medical Supply is where they receive all of their materials. Healthcare delivery operates on a four-tiered structure that includes the central medical store, regional medical stores, and service delivery points, while the management of healthcare services and healthcare supplies is handled on a three-tiered structure.

Drugs and vaccinations, which are often paid for by private donors, must be obtained via the Central Medical Store. On rare situations, the Teaching Hospitals and Regional Hospitals may make purchases directly from suppliers without first obtaining approval from the Ministry of Health (Mathew, John & Kumar, 2013). Thus, healthcare delivery is decentralised, but logistics and supply management are centralised. Medications and medical supplies are supplied via a global network of wholesalers, distributors, and retailers, as well as transportation and other distribution systems.

2.3. Empirical Review

The purpose of this chapter was to offer a synopsis of the literature that was consulted in pursuit of the study's objectives. This was done so that the results of previous studies could be compared and analysed for efficacy.

2.3.1 Patient satisfaction, healthcare supply chain efficiency, and supplier management strategy

The importance of suppliers' capacity to deliver cutting-edge materials is growing (Lowry & Treiblmaier, 2020). Many hospitals have trouble keeping their supply chains under control because of the complexity of risk management involved. One of the most crucial parts of supply chain risk management is building rapport with vendors, since they are the ones that bring in most of the hospitals' most valuable assets. Effective supplier communication, strategic supplier relationship management, and collaboration throughout the supply chain may all contribute to this goal (Kim & Kim, 2019). Kang, Li, and Park (2018) examined the influence of risk management on performance after taking into account the moderating role of supplier integration on firm performance. The 2013–2014 International Manufacturing Strategy Survey data is used in this study. Most of the information was gathered via the use of a standardised

questionnaire. The reliability of the data utilised to develop the various components of the measurements has been empirically verified. We used both email and phone calls to reach out to potential respondents across 22 nations, eventually collecting 652 completed surveys for statistical purposes.

As a result of using structural equation modelling, we were able to examine and verify the stated relations in the conceptual framework. People's propensity to make use of crucial strategies was measured using the Harman single component test. The results show that the SCRM has a substantial, if modest, effect on the operational competence and flexibility of the organisation. It is true that SCRM's impact on operational flexibility is bolstered by provider integration, however this does not negate the correlation between SCRM and operational productivity. Drug shortages may increase the number of patients who die, therefore it's important for hospitals' supply chain managers and procurement authorities to have backup suppliers on standby. Abdullah and Mahmoud examined the extent to which manufacturing businesses in the United States of America, Japan, Italy, and Korea fared in international competition (2017). These supplier partnerships were shown to improve a company's capacity to compete in its market.

Working with suppliers on purpose may drastically disrupt the functioning of the inventory network in China's manufacturing industry, the topic of study for Khan, Liang, and Shahzad's (2015) straight relapse study. However, in an intriguing study, Tangus and Rambo (2015) looked at how provider development affected the productivity of assembly enterprises in Kisuma County, Kenya. They saw no connection between the development of the provider and the functioning of the enterprise. Schmidt-Bakx, and Westert (2011) made a similar point, arguing that supply problems are causing shortages of vital supplies at many organisations, which is slowing patients' recoveries.

Business activity defined as production network cooperation occurs when at least two separate organisations coordinate their activities in the inventory network, which consists mostly of supply chains for emergency clinics (Khan, Dean and Hand, 2020). As time goes on, the integrated compounds may slowly improve and reap the benefits of this process. Strategic partnerships with regional vendors may help hospitals continue to get critical sedatives despite widespread medicine shortages (Park and Min, 2007; Wu et al., 2005). IBM, HP, P&G, and Dell all formed group long-haul agreements with their various suppliers to reduce exchange costs and solidify their standing in the marketplace (Storeng, Palmer, Daire and Kloster, 2019).

Partnerships allow businesses to share risks, get access to new resources, lower transaction costs, and ultimately boost output, earnings, and market standing (Blome et al., 2014, Zhang et al 2016). Through the development of supply chain partnerships and their central roles in the medical supply chain, hospitals may enhance their patients' operational experiences (Al-doori, 2019). Because they are tasked with interpreting external information meant to discover and develop opportunities, hospital managers must apply innovative thinking to their interactions with suppliers and consumers (i.e. patients) and the creation of new products and services (Teece, 2012).

By working together, the corporation may lower its acquisition risk and save money for other purposes, speeding up its progress towards its objective (Handfield and Bechtel, 2002; Sheu et al., 2006). It seems that firms may better manage risk when they work together, both by dividing up the burden of risk and by gaining access to resources that are directly related to the risk (Park, 2004). Benefit and efficiency are increased as a consequence of the advantage obtained through time (Mentzer et al., 2000). In the past, researchers have shown that supply chain

cooperation has a direct impact on the efficiency of the healthcare supply chain (Bhattacharya & Dobrzykowski, 2014).

Chakraborty et al. looked at the effects of supply chain cooperation on business performance and value co-creation in SEM-based healthcare services (2014). The study's results suggest that supplier-business cooperation has a direct impact on business outcomes. According to studies by Chakraborty et al., which are related to this subject, coordinating between suppliers is an efficient method of decreasing risk in Australia (2014). Findings from structural equation modelling indicate that collaboration in all areas successfully mitigates risk in each component of the supply chain.

Furthermore, empirical research done in the Jordanian automotive sector by Sheu, Yen, and Chae (2006); and Al-Doori (2019) shown that supply chain collaboration improved business outcomes. Several studies on supplier management have allegedly been conducted on a sample of manufacturing organisations (supplier relationship management, supplier cooperation, and healthcare supply chain performance, to name a few) (Oballah & Waiganjo, 2015). The healthcare services industry has not been the subject of much research (Chakraborty, Sourabh Bhattacharya, David & Dobrzykowski, 2014).

Since most research (Syed, Li, Junaid, Ye, and Ziaullah, 2019; Khan et al., 2015; Amemba, 2013; and Kanyoma, Sankhulani, and Hanif, 2013) used largely structured questionnaires to acquire their data. Several previously validated measures were also used in this study to assess the components that were operationalized for this research. Previous studies used these indices as instruments for gauging the constructions of interest. Several empirical research' methods informed the decision to adopt a five-point Likert scale to assess respondents' opinions on the

components that made up the sub-scales (Mbah, Obiezekwem, & Okuoyibo, 2019; Hadyait & Rashid, 2019).

His own personal inquiry (Fatima Malik and Shabbir, 2018). medical clinic administration, patient satisfaction, and persistent persistence. Islamabad, the capital of Pakistan, was the site of a survey where 6 private emergency clinics and 611 patients participated (both indoor and outdoor). The data was analysed using descriptor measures, a typical method difference, dependability, association, and regressive instruments to learn more about customers' perceptions of the quality of the service they received and how those perceptions affected their motivations for remaining loyal to private specialist co-ops. In an effort to better serve their clientele, private health expert firms undertook this project.

A higher level of patient satisfaction and loyalty is predicted as a result of enhanced medical care delivery, as shown by the findings. High-quality medical administrations are intrinsically linked to the loyalty of patients, which is driven by their pleasure with the care they get (real environment, client amiable climate, responsiveness, correspondence, protection, and security). Another investigation was conducted by Kwon, Kim, and Martin (2016). It is critical to raise standards throughout the whole chain of health food stores while also increasing profits. To better understand how the retail network of medical services might enhance operational efficacy in terms of the cost per patient release of medical care activities, while also improving the quality of care and decreasing the need for re-confirmation, this research examines many key areas. The study suggested that provider the board can and will increase effectiveness (lessening costs) and improve patient consideration by contributing assets from the sending of the production network to other creative areas where patient consideration benefits. Using

resources from the production network's outbound sending to fund other creative zones that prioritise patient care is one way to achieve this goal.

2.3.2 Inventory Management Strategies, Healthcare Supply Chain Performance, and Patient Satisfaction

Stock refers to the value or quantity of raw materials, supplies, work-in-progress projects, and finished inventories that are held or stored as needed (Mbah et al., 2019) Managers in stock associations need to see a decrease in the price of goods while still satisfying consumer demands. It has a lot of weight. Mbah, Obiezekwem, and Okuoyibo have focused their studies on how stock management affects the responsibilities of assembly organisations in Nigeria's southeast (2019). Companies such as Nigeria Breweries Plc. in Enugu, PZ Cusson in Aba, Seven-Up Bottling Company in Aba, and Cutix Cable Industry in Nnewi have all contributed to the final product. There were a total of 538 staff members surveyed, and their replies were analysed. The opinions of the participants were rated on a 5-point Likert scale based on how they felt about the factors under discussion and the events included in the research.

To make quantitative advances in the inquiry, a clear research design was adopted. Data management was handled with the help of IBM (SPSS) form 25, Smartpls 3.3.0, and dominating. The critical data for each field of inquiry was analysed using graphic insights, the Pearson item second connection, and many relapse methods. Stock expenditure, timely approach, material need planning, and key provider association were found to have a significant impact on the operational performance of the named industrial firms in the south-east of Nigeria. After a great deal of investigation, this was confirmed to be the case. "an expenditure reduction method concerning the clinical providers from a contextual evaluation in Singapore" was the title of another study by Kumar, Ozdamar, and Zhang from 2008. They concluded that

despite the high upfront costs of data advancement initiatives, it may be worthwhile to reevaluate cost-cutting measures. Consider the following [Example:] Consider the following [Example:] They suggested reengineering and just-in-time manufacturing (JIT) methods to make up for the deficiency of experience.

As a follow-up, the administration of the Ghana Health Service commissioned a research that looked at how inventory management procedures affected the supply chain of public health facilities in Kenya's Kisumu County (2018). The sample size was calculated using data from 84 employees at those healthcare institutions who were selected at random from the ranks of procurement officers, shop clerks, logistics officers, and information technology experts. Both required and elective contributions to the research were used. In order to compile the data, a survey with a loose structure was utilised, and a specially-created data sheet was put to use to collect supplementary information on purchase costs. Data analysis followed, and SPSS was utilised for that purpose. The research found that the visibility of government health offices in Kisumu County's retail network was most impacted by lean stock operations, accurate inventories, and data innovation.

A lean inventor system was found to have a strong positive relationship with the performance of the Mumias Sugar Company, Kenya West Sugar, and the Butali Sugar Mills company by Mwangu and Iravo (2015), who studied the effects of inventor management on procurement performance in sugar companies in the western sugar factory. This was discovered through their study of how inventory management impacts supply chain efficiency. The opposite side of the coin is an investigation by Ruankaew and Williams (2013) on the effects of incorrect food inventory production in Pennsylvania, America.

The study showed that inaccuracies in stock counts may slow down production and increase costs and risks for businesses.

Research by Oballah and Waiganjo (2015) on the effect of inventory management practises on organisational performance at the Government of Health Kenyatta National Hospital facility found that inventory loss has a negative effect that might be offset by accurate inventories. Kenyatta National Hospital, which is run by the Kenyan government, was the site of their research.

Amemba (2013) conducted an empirical study to learn how risk management strategy implementation affects supply chain efficiency. Two-hundred and four supply chain employees at KEMSA were polled using a standardised questionnaire as part of a descriptive research study. One strategy used to zero down on and select research participants was a census. The surveys were carried out one-on-one with respondents so as to get primary data. Descriptive and inferential statistics were used during data analysis. According to the findings, not much precaution was taken.

Stock mistake affects an organization's assets and execution in terms of time, cost, and risk, according to research by Ruankaew and Williams (2013) into the food processing business in Pennsylvania, USA. The authors observed that stock inaccuracy may affect an organization's resources and productivity. Manhart, Summers, and Blackhurst (2020) claim that previous research has ignored the performance of medical services inventory networks in favour of the "composition" of enterprises that have a propensity to store network risk generally. Because of this, the reliability of these numbers may be questioned with regards to certain types of medical facilities. For instance, inventory management is one method used by hospitals in Ghana to

control supply levels. Additional methods include just-in-time manufacturing and economic order quantity (Andrews Osei Mensah, 2016).

There is now a significant difference in the execution phase of projects based on the competence in conveyance and firm implementation of multinational projects (Waller and Fawcett, 2013). It was shown that the company's transport capacities affect the presentation. Constant changes in booking might cause executives to lose faith in the system, leading to delivery delays (Kafetzidakis and Mihiotis, 2012; Law and Pujawan, 2009; Pan and Pokharel, 2007). Staff schedules will need to be adjusted, limit usage will vary, scheduling costs will increase, transportation plans will be thrown off, stock costs will rise, cargo costs will rise, extra care will need to be taken with materials, records will be more difficult to keep, and administrative mediation will be necessary, according to Inman and Gonsalvez (1997). The interruptions will be the root of all these problems.

Inventory management is a crucial aspect of the asset management process in both industrial companies and hospitals (Xu, Lu, Berendt, Jha & Mandal, 2018). However, none of these studies have looked at how different inventory management approaches affect patient satisfaction or the efficiency of the healthcare supply chain in Ghana's Western Region. A business will keep a stock of raw materials and other supplies in preparation for selling or incorporating them into a production run. The organisation has an effective inventory system, which helps them maintain stock at a reasonable price. If the organisation employs a practical structure and strategy, it will be better equipped to compete in the marketplace (Mohd Lair et al., 2014). Needles, containers, tablets, and imbuements (Vila-Parrish and al., 2012) are all examples of items often seen in a clinical care stockroom (Adriana et al., 2010; Hani, Basri, and Winarso, 2013). Clinical consideration stock items are also frequently linked to things like

gloves (Zhou and Olsen, 2017), cautious units (Rappold et al., 2011), and clean instruments (Dellaert and Van De Poel, 1996).

Ali oversaw a brand-new kind of test (Iqbal and Asif, 2012). Corporate leaders and their impact on consumers' happiness. The research found that the risk of low inventories may be mitigated with a well-organized stock management system, which in turn has a positive effect on customer retention costs and loyalty. Mahyadin, Mahidin, Asaad, and Zien provided a synopsis, and there were also: (2013). To better understand the factors that influence stock administration implementation in Malaysian public medical clinics, it is recommended that a quantitative approach be used. Consideration should be given to how stock administration procedures are really carried out as part of this study.

According to studies, poor management is the result of many problems, such as the level of management commitment, expenses, management tiers, and people competences, all of which have a negative effect on patient satisfaction. The study helps solve this knowledge vacuum by showing how better inventory management boosts healthcare supply chain efficiency in the Western Region.

2.3.3 Performance of the Health Care Supply Chain and Patient Satisfaction in the Last Mass Distribution Management Cycle

Some challenges are specifically relevant to storage network executives and are at the heart of distribution and other outward coordinating responsibilities. JIT and custom delivery, stockroom and office placement, custom item administration concerns, client board connections, and correspondence data system setup are all examples of such problems (Xu et al., 2018) Successful store network coordination and operation, as argued by Yang et al., relies heavily on reliable and timely transportation (2004). Using a transportation layout that provides

enough of back-up may lessen the production network's exposure to risk and the overall stockpile size required (Nguegan & Mafini, 2017).

According to Yang et al. (2004), who surveyed 249 manufacturers, there are many distinct types of assembly companies. The analysis uncovered that incoming and outbound transportation performance had a significant bearing on the company's capacity to pick items, administer transportation in a mutually acceptable manner, and achieve overall performance. The ability to fulfil delivery deadlines, as well as the speed with which questions were answered, were also considered important. In addition, the California Department of Public Health investigated the coordinated administrations and dubious financial interests of several clinics (Ortiz-Catalan et al., 2016). The study's results suggest that ineffective coordination services may have a major effect on the structural integrity of regional healthcare delivery networks. Serious consequences for patient care result from this. The study's goal was to look at how the thirty active drug trafficking gangs in Pakistan's retail network are affected by transport re-appropriating. The research showed that by rethinking transportation, the firm in the example above was able to improve SCM execution, which in turn improved the overall efficiency and viability of the inventory network serving the Pakistani pharmaceuticals market. The data also shown how transportation rethinking influences the market as a whole.

Australian manufacturing enterprises' supply networks were studied by Sohal, Millen, and Moss (2002) to assess how the practise of externalisation influenced their costs and flexibility. The study concluded that a company's overall transportation costs are positively correlated with the degree of adaptability in its supply chain. Researchers Mensah, Diyuoh, and Oppong (2014) found that industrial firms in Ghana use transportation to mitigate the dangers of their supply chains.

However, there is a lack of data on how transport factors into the effectiveness of hospital supply chains in Ghana, particularly in the Western Region. In addition, none of these studies did their data analysis in the context of Ghana utilising a rigorous statistical method such as structural equation modelling (SEM) (SEM). This may impact the generalizability and reproducibility of their individual findings. The majority of studies examining the connection between transportation management and company performance have focused on generic manufacturing firms, the study found (Yang et al (2004). Few studies have focused on the importance of transportation logistics in Ghana's healthcare supply chain (Bossert, Bowser & Amenyah, 2007). However, no such investigations were carried out at Western Region hospitals. These results from a structural equation modelling analysis support the idea that better transportation management has a notable beneficial effect on the efficiency of the healthcare supply chain in Ghana's Western Region.

The names Atuoye, Rishworth, Galaa, Boamah, and Luginaah were all associated with the investigation's leadership (2015). Breaking down the last barriers to widespread distribution of information in order to get it to provincial maternity and child care organisations in Ghana Between September and December of 2013, men (n = 40) and women (n = 45) in rural networks within a CHPS zone in Ghana's Western Region participated in a total of eight centre gathering conversations. This paper aims to investigate the perceived root causes, stress management approaches, and tactics for a manageable transportation framework that now impede broad dispersion of wellness services in a rural environment. The research found that the Western region's capacity to benefit from CHPS's positive effect on mother and child wellness is being hampered by subpar transportation options. As the CHPS is a government initiative, this is an important discovery.

2.3.4 Hospital Supply Chain Performance and Patient Satisfaction

Supply Chain Performance refers to a cycle used to evaluate the adherence to fitting cycles and the success in placing products in the most advantageous locations across a shop chain (Stephens, 2015). Patients' happiness is becoming more important to both their own well-being and the success of healthcare providers' businesses. However, patient satisfaction's organisational details might be murkier than they seem at first. Several studies, including one by Ferrand et al. (2016) and another by Benton and Maloni (2017), have shown the detrimental effect that force-driven purchaser-merchant relationships have on performance and the fulfilment experienced by the provider relationship and the production network (2005).

Another study that evaluated the "deftness and lean assembling" of healthcare supply chains was published in 2011 by Aronsson, Abrahamsson, and Spens. The purpose of the study was to learn about the dynamics of healthcare supply chains and assess their potential for efficiency and flexibility. To achieve this goal, a production network course was designed, and the requirements for using an accurate inspection in store networks at the medical care board were established to guarantee sufficient stock levels at all times. In addition, a production network training programme was developed as a result of the study.

On top of all this, a study by (Khudair, 2011). The goals of this research, done at Qatar's Hamad General Hospital, were to identify critical interacting aspects in the administration of medications and to evaluate the impact of pharmacy management on patient satisfaction. The study's findings suggest that the speed with which medication is administered, the friendliness of the drug specialist, the appropriateness of the medication's recommendation, the convenience of the pharmacy's location, and the comfort of the waiting area all contribute to patients' overall satisfaction. However, the availability of treatments had no impact on how happiness was

conceptualised. The purpose of this study, as stated in the findings of Javed (2018), was to examine how patients' expectations about the quality of medical care administration affected their satisfaction with the nursing care they received in public and private clinics in Pakistan. Researchers found that in public areas, patients were more satisfied when staff showed compassion, whereas in more private areas, patients were more satisfied when staff showed responsiveness.

Study finds that effective supply chain performance in Malaysia can play a critical role in improving overall operational effectiveness within Indian healthcare industries due to the close relationship between supply chain management (SCM) and SCP practises that have the highest levels of efficiency and performance (Mustaffa & Potter 2009). This is because effective supply chain management (SCM) procedures provide maximum productivity and efficiency.

Srivastava and Singh did research on the topic of coordinated medical care production network execution: an underlying relationship-using specialist co-op viewpoint (2020). This theory was validated by an application of the method of half-least-squares for the major condition displaying, and the findings were positive (PLS-SEM). It was found that the introduction of a unified inventory network for healthcare had a considerable effect. In addition, the kind of treatment offered to patients throughout the clinic's operating cycles is significantly impacted by improvements in the performance of the integrated production network.

Polater and Demirdogen (2018) conducted study on the patient response network and the medical services production network separately. Twenty-three questions were used together with a five-point Likert scale to reveal underlying trends. A scale was employed to organise the data for the public clinics, while SPSS 18 and LISREL 8.8 were used for the factual programming. The motivation for this analysis came from the experience of a group of 129

specialists in coordination and production networks who run open emergency clinics in several major centres throughout Turkey. Those in this field treated clients from all throughout Turkey. The theoretical claims made in the examination are strengthened by the results of the investigation. The study concluded that a combination of inventory network, request gauging, provider execution, and patient response is optimal, and that network flexibility mediates this effect. Nonetheless, none of these studies have looked at how the efficiency with which medical clinics in Ghana's Western region carry out their production networks affects patients' overall levels of contentment. This study aims to fill this gap by examining the premise that good inventory network execution considerably enhances effective patient fulfilment in the Western region of Ghana.

2.4 Conceptual Framework

The term "conceptual framework" refers to "a set of interrelated concepts or assumptions that define the parameters of the study and provide examples of how the variables in the study are related to one another" (Mugenda & Mugenda, 2008). Independent and dependent variables may be defined with the help of the conceptual framework. Performance is an example of a dependent variable, while examples of independent variables are procurement planning, procurement controls, procurement monitoring, and personnel training in procurement procedures. You can see a graphical depiction of this relationship in Figure 1.

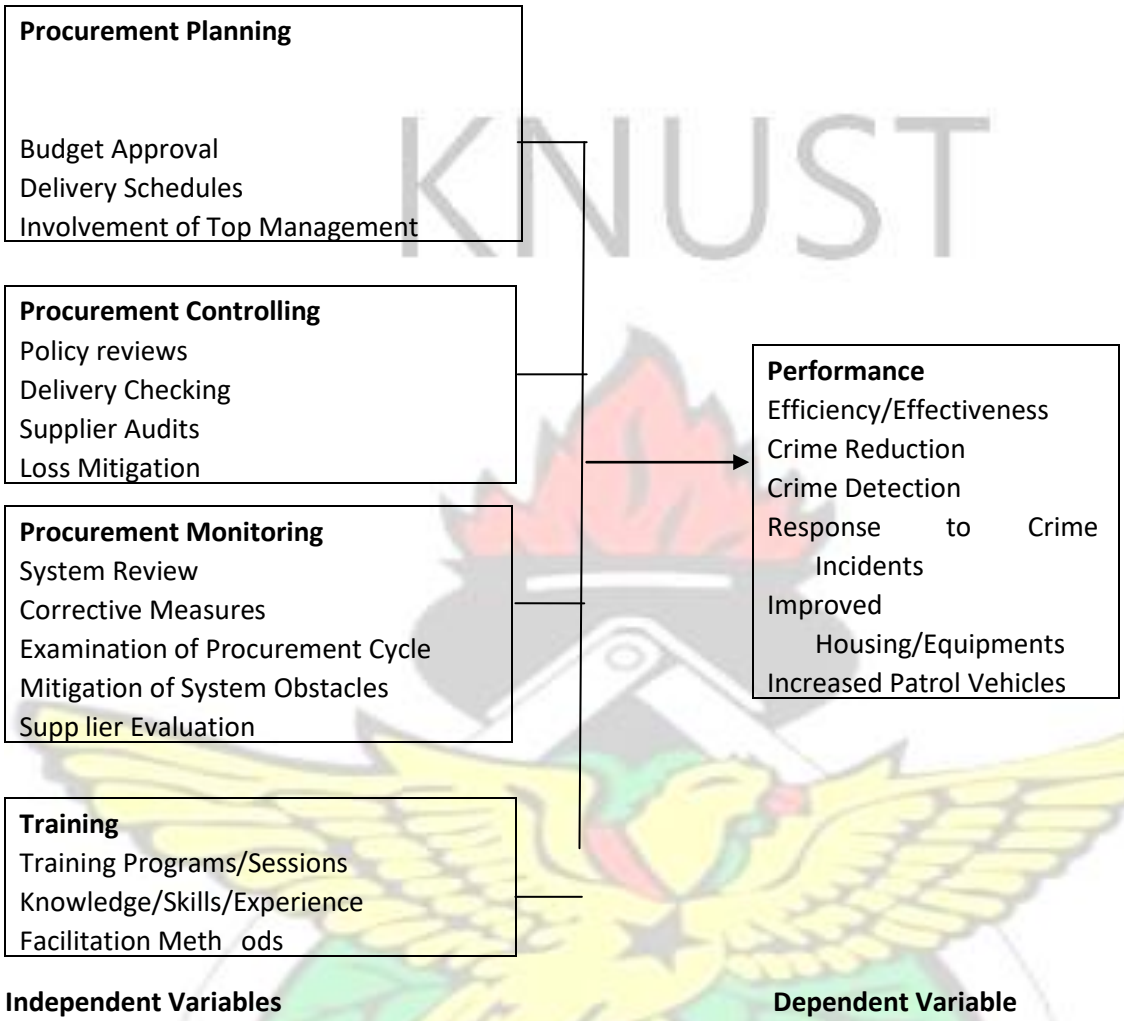

Figure 1: conceptual framework

Author's own construct (2022)

2.5 Chapter Summary

The chapter undertook a thorough evaluation of the relevant prior literature in order to give explanations and justifications for the study's conclusions. The key sources of motivation for this chapter's composition were the network theory and the resource-based theory. In addition, it created a medium for the interchange of ideas, precise audits, and a proper inspection procedure. In the next part, we'll go through the specific strategies we employed to gather information.

CHAPTER THREE

RESEARCH METHODS

3.0 Introduction

This chapter provided an analysis of the procedures that were followed in the course of the research. The individual spoke on the motivation behind the investigation, the research design, the study region, the population, the testing method, the data gathering methods, and the data analysis. This chapter also discusses additional challenges, such as the consequences of ethics, validity, and reliability.

3.1 Research Paradigm

The term "research paradigm" is used to describe a broad philosophical premise that serves as an organising principle for examining the cosmos (Peng & Shiyu, 2019). French philosopher Comte (1789-1857) established the positivist school of philosophy. According to positivists, the study of facts may be used with logic, measurement, and deductive reasoning to prove universal truths (Ballard, 2018; Rahi, Alnaser & Ghani, 2019). This study recommends using scientific research methods to provide unbiased findings relevant to the stated research aims, which may then be used to inform scientifically-based choices by stakeholders. This would be done so that relevant parties may use the study's results as the basis for their own choices.

Positivists are defined by their acceptance, the idea that anything that can be confirmed by human methods must be true. Because of this, positivism proposes an objective, global world with an endless number of components and laws (Kankam, 2019). Testing hypotheses or ideas is a big deal in the positivist method, as is stressing the unique, autonomous growth of both the examined phenomenon and the expert researcher (Kumar et al, 2019; Kankam, 2019).

Therefore, the researcher's function in this philosophical perspective is to maintain impartiality and distance, to seek for and identify generally authentic components, and to test hypotheses and hypotheses in the name of fair, long-term promises (Burns and Grove, 2011).

The positivist paradigm allows for the generation of findings that are not only replicable, but also accepted as being broadly applicable (Kiyala, 2019; Shah, Shah & Khaskhelly, 2018). Another criticism levelled against it is that it places too much weight on visible events at the expense of the non-observable ones (de Chantal, Gagnon-StPierre, and Markovits, 2019; Shah, Shah, and Khaskhelly, 2018; Denzin and Lincoln, 2011). According to Behfar and Okhuysen (2018), positivism may be recognised by its adherence to logic, which prioritises the testing of hypotheses with the goal of proving or disproving theoretical assumptions (Livesey, Greenaway, Christensen & Ahmed-Kristensen, 2019).

3.2 Research Approach

Exploration strategies, as defined by (Boohene, Sheridan, & Kosey, 2008) and (Cresswell, 2014), are sets of coordinated actions that factor in plausible future expectations for the methods of data collection, analysis, and comprehension to be used. According to these writers, an exploration strategy is a plan of action and a set of interactions that take into account the suitable developmental assumptions for the planned methods of operation. The quantitative strategy makes it possible to employ quantitative processes to explain hypothesised results while presenting test problems (Creswell and Ph, 2016). Using survey and questionnaire data, this approach is not only useful and scientific, but it also makes fair assumptions (Crotty, 1998; Cresswell, 2014).

As a result, studies of the interrelationships of the variables' causes and consequences are urgently required (Creswell & Creswell, 2017). It is also intended that this study will help

researchers draw conclusions and provide suggestions about how supply chain management might improve hospitals' overall performance. However, the quantitative approach has been criticised for its lack of validity in assessing human behaviour (Crotty, 1998). According to Clotty, the current method of coming up with ideas is cumbersome, contrived, and inappropriate for the task at hand. The quantitative methodology was chosen for this study despite its limitations due to the nature of the study's aims and the research philosophy. Further, it is useful for assessing the relationships between the various supply chain management factors, such as supplier and inventory management, the management of the most current mass distribution, and the performance of the hospital supply chain.

Further, quantitative analysis was conducted by using appropriate scales of measurement, including nominal scales, ordinal scales, interval scales, and ratio scales, to examine the relationships between variables and constructs. For instance, a Likert scale with five points would be used to assess the replies of respondents to the major questions that evaluated the subscales that were used to measure the primary constructs that were considered in the research. This is necessary in order to gauge the respondents' level of agreement or disagreement with the key hypotheses. Quantitatively quantifying the constructs and variables allowed the study aims to be subjected to statistical manipulations made feasible by the use of data processing technologies and the statistical approach of structural equation modelling. That was made feasible by quantifying the study's aims. The theory of probabilistic causation, which holds that a single event has a propensity to contribute to an influence, was confirmed by the investigation, which was motivated by the notion of multiple causes (Nadler, Gluscevic, Boddy & Wechsler, 2019).

3.3 Research Design

The research approach chosen to conduct an investigation is a major factor in determining the examination layout that will be utilised (Vilko, 2012; Mhelembe and Mafini, 2019). Since this study employed a quantitative methodology, we decided to administer the test in an instructive way. Knowledge of the issue is deepened, and the ability to draw stronger, more specific conclusions is bolstered, all of which facilitates creative speculation about the likelihood of uncovering something new (Burns et al., 2011; Creswell, 2014). Because of how it is structured, it does a good job of informing the reader about a certain situation. The shown approach, developed by Saunders, Lewis, and Thornhill (2011), gives analysts more leeway in selecting and customising exploratory techniques than the preceding model provided.

This approach can include sending out pre-made questionnaires to a large group of individuals in order to compile data from their location-specific responses. As a result, the strategy is well-suited to the objective of obtaining data from workers at medical clinics positioned in various places around the Western Region. This strategy also use statistical methods to analyse large quantities of numerical data in order to investigate the relationships between and among a wide range of variables (Wahyuni, 2012; Beins & McCartyy, 2017). This approach was chosen because it allows for the examination of causal and correlative relationships between the study's independent variables—in this example, supply chain management strategies and hospital performance.

On the other hand, there are a few holes in the study's explanatory design that might influence the findings. These problems were stated in the preceding sentence (Robson, Plangger, Kietzmann, Mccarthy & Pitt, 2015; Wildemuth, 2016). Wildemuth (2016) claims that this method relies on respondents' subjective impressions and emotions, which might skew results

in a certain way. Simply said, it's possible that subjective outcomes will arise from using this methodology. This raises concerns about whether or not the results can be seen as objectively (Creswell & Creswell, 2017). The study's results, however, suggested that the explanatory design was a better fit for the research because of the study's goals, the research philosophy, and the methodology used.

3.4 Population

An investigation's starting point is its subject; data collected from that topic then has to be woven into the study's larger framework. In a study, the number of locals is calculated by tallying up the total number of persons who have the same characteristics as the sample being studied (i.e., those who are eligible to be recalled for the study). This is how many persons will be considered for a second chance to take the test. This allows for a more precise portrait of the populace to be painted (Creswell 2014, p.18). In the context of academic research, a "population" refers to a group of people who share a certain feature (such as age, gender, or occupation) and who are selected for study because of that characteristic's relevance to the subject at hand. A population, therefore, is a set of individuals that share a common condition (Plonsky and Oswald, 2020).

In this experiment, both A and B were included as part of the population. Patients admitted to hospitals in Western Ghana made up the 'B' population, while healthcare providers in the area constituted the 'A' population. People with jobs like stocking shelves and sourcing supplies made up the 'A' population. Pharmacists, hospital administrators, information officers, the head of the OPD section, and accountants were also members of this group. Also present were pharmacists, information officers, and senior nurses with advanced degrees in midwifery.

Personal protective equipment (PPE) and other logistical assistance were provided to these important staff to ensure their safety while carrying out their core tasks of medication handling and prescription at their respective hospitals. They were also assigned responsibility for the distribution and administration of medications to patients. The study's participants were selected because researchers were interested in learning about the challenges of delivering health care to that community.

So, gathering pertinent data for the goal of developing unbiased conclusions would benefit from their ability to affect supply chain management strategies (supplier management, inventory management, and last mass distribution management). As a result of the following factors, this is likely to occur: Hospital ward 'B' was populated only by female patients. Patients staying in the female ward were chosen for the study because women constitute both a socially underrepresented group and the majority of hospital patients.

3.5 Sampling Technique

Fraenkel and Wallen (2000) argue that a well-selected sample is essential for achieving statistical validity when extrapolating to the whole population. For extremely large populations, this is of paramount importance. The census method was used to ensure that the sample was really representative of the health care professionals that took part in the study due to the limited population size. With the census approach included into our research, we were able to strengthen the validity and trustworthiness of our findings. According to Cresswell's (2014) research (2014). Two hundred female ward in-patients made up the study population; 132 of these women were randomly chosen to take part in the study using a sample size determination table created by Krejcie and Morgan (1970). Further, female ward inpatients were selected using a standard random selection method. A random number generator was used to determine

the outcome. Patients were selected for participation in this study using a simple randomization procedure. The term "simple random sampling" refers to the use of a computer programme known as a Random Number Generator (RNG) to produce random numbers for use in selecting the sample's demographics, geographic locations, and other characteristics. This action was taken to guarantee proper execution of the operation.

Every area of the sample frame was equally likely to be selected, and the researcher had no say in who agreed to take part in the study (Vijayalakshmi & Sivapragasam, 2019). Random sampling is a typical kind of probability sampling that must be used while performing predictive research. In order to do multiple regression analysis, this is required (Luedtke, Sadikova & Kessler, 2019). The lottery method that made this possible allocated each patient a random number between one and two hundred. This made it possible to perform the treatment and insured its success.

Thus, information was gathered from eight representative key personnel and female in-patients at each of the Western Region's 36 institutions. One hundred nine male and one hundred seventy-three female inpatients participated in the survey. Respondents were chosen based on their ideologies, attitudes, and job positions, all of which have a direct impact on the paths their hospitals are moving in with regard to the hospital supply chain. Moreover, similar justification was employed while selecting female ward patients to play the role of responders.

This illustrates that although the whole population was included in the study population for Part A, the population for Part B was chosen at random to ensure that every possible participant was given a fair shot at being included. Census sampling refers to a form of data gathering in which the whole population under study is included in the survey or research endeavour. Alternatively, in a basic random sample, responders are selected from the whole population in a fair and

random manner. Harding (2006) means that when he refers about the census, he is referring to the process of gathering information from every person, family, and business in the population. In contrast, sampling takes place outside of the population. Research for the census aims to analyse this problem by counting the population as a whole. Due to the relatively small size of the population, selecting the whole group to represent them in the research was done so that an accurate representation of the people could be provided.

3.6 Data Collection Instrument

The investigation's assessment was predicated on the information gathered mostly via the use of questionnaires. For information gathering purposes, PSL-SEM employs a fundamental data collection tool called a structured survey. The primary goal in creating this technique was to facilitate data collection. A standardised survey, as defined by Saunders et al. (2011), is one in which all respondents are asked the same set of questions in the same order. The questions themselves are standardised, as is the sequence in which they are asked. Structured polling is a vital part of quantitative research since it facilitates the collection of predetermined answers for statistical analysis (Saunders et al., 2011). A survey consists of a set of predetermined questions to which participants are given the opportunity to provide answers in the form of a vote (Kumar, 2005).

Every section of the survey was linked to a central idea or principle, such as the hospital supply chain or patient happiness, or the management of suppliers, inventories, final mass distribution, or inventories. is giving a person medical care and attention. Malhotra and Birks (2007) claim that questionnaire surveys are the most often utilised approach to collecting data for research because of its potential use in analysing topics critical to the management and development of businesses.

The survey's questionnaire was written keeping in mind the examination's hypotheses and the precise investigation sites. There was an attempt to make the survey's format resemble that of actual surveys. All the questions were required, closed-ended, and specific. This allowed respondents to choose from a predetermined list of replies and required them to evaluate each option individually. Those products on either side of you were created using a plan (a description of the behaviours, qualities, or other elements that the researcher is examining) and a Likert scale. If you need to analyse behaviours, attitudes, or other phenomena along a continuum, a plan is important, but a Likert scale is more practical (Leedy and Ormrod, 2010). Survey respondents were asked to rate their answers on a five-point Likert scale.

The survey is broken down into four sections. Participants' personal details were analysed in "Section A" of the report. A framework with a free ending was used to determine the component sizes. However, within the framework of the healthcare delivery system, Section "C" looked at how satisfied patients are with the hospital supply chain. The satisfaction scale for risk management in the supply chain consists of eleven separate factors. Documentation Piece "B. The survey includes items focused on respondents' supply chain risk management profiles, as well as separate sets of questions (totaling 39) addressing the study's three independent variables.

Respondents were asked to indicate their level of agreement or disagreement with the aforementioned propositions. Area D contained eleven indicators for measuring patient satisfaction. The inquiry items for Areas A, B, C, and D were rated on a 5-point Likert-type scale as follows: Ineffective; 2= Slightly persuasive; 3= Moderately persuasive; 4= Effective; and 5=Highly effective.

It was also concluded that the survey could be used effectively since the questions were presented in a way that was easy to read and comprehend by the respondents. In conclusion, it serves a purpose, can be made with little effort, and has standard, predictable questions. Finally, the anonymity of survey respondents makes it more likely that they will respond truthfully, without fear of repercussion (Gravetter and Forzano, 2006).

Fraenkel and Wallen (2000) point out that surveys only capture information on people who can read and write, therefore they are limited in their usefulness. As was to be expected, all of the respondents randomly picked from Section B could read and write, with the exception of the female ward in-patients. Those hired to help with data collecting will make it a priority to talk to patients and explain how to fill out the questionnaire.

3.7 Data Collection Procedure

It was made easier for respondents to get questionnaires in order to participate in the study by providing them with an explanation of the purpose of the research. In order to guarantee that everything was in proper working order before the data exercise, the head of the Department of Marketing and Supply Chain Management issued a permission notice. This was done before the exercise. After the administration of the Western Regional Health Directorate was successful in getting official authorisation for the data gathering, this procedure was carried out (Leedy & Ormrod, 2010).

The participant was given both a survey and a brief description of the evaluation's intended use. Both were included in the assessment. The response rate in section A of the questionnaires obtained from health workers was 100%, which implies that all of the questionnaires that were provided were filled out and retrieved by the health employees. This component of the questionnaires was gathered from health workers. The section B of the questionnaires that were

collected from patients had a response rate of 73% among the persons who answered those questions. The letter of authorization was drafted on August 27, 2020, and it was distributed later that day. The date of the start of the collection is going to be September 2, 2020, and the date of the end of the collection is going to be October 2, 2020.

3.8 Ethical Consideration

According to Greener and Martelli (2018), it is vital for researchers to adhere to particular ethical norms, such as nonmaleficence, beneficence, autonomy, and fairness. This is especially true for primary research. In their essay, they argue for this position. According to Saundres, Lewis, and Thornhill, one definition of ethics is the rules of behaviour that impact moral judgements about our behaviour and our relationships with other people. This definition of ethics has been proposed. The explanation for why things are the way they are is as follows: (2007). According to Newman et al. (2014), there are a few fundamental guidelines that need to be followed in order to ensure accurate data collection. These principles include things like voluntary participation, informed consent, and secrecy.

Concerning the issue of informed consent, the regional health directorate as well as the respondents are aware of the fact that they are participating in the data collection. This is the case for both parties involved. This was accomplished in the first place by submitting a request to the Western Regional Health Directorate on behalf of each institution that was the primary focus of the research study and afterwards getting an introduction letter in response to that request. In light of the issue of plagiarism, every relevant piece of content from a diverse range of sources has been appropriately paraphrased and cited in the text. Following that, an investigation was carried out to determine whether or not the research included any instances of suspected instances of plagiarism.

The respondent's anonymity was safeguarded by removing any information that may be used to identify them, such as their names and any other sensitive personal data. This ensured that the respondents' responses could not be traced back to a specific individual. These precautions were taken to protect the respondents' identities and maintain the confidentiality of the information they provided in their answers. The information's confidentially was preserved by ensuring that it was kept a secret at all times and that none of it was used for any purpose other than the investigation that was currently being carried out. In conclusion, the research dealt with all ethical issues in a satisfying way, eliminating any concerns that may have been raised.

3.9 Processing and Analysis of Data

To highlight important information, ideas, consequences, and supporting dynamics, data must undergo evaluation, which Adèr and Adèr (2008) define as "the process of editing, cleansing, changing, and presenting data." This is done so that the most important facts, theories, results, and underlying processes may shine through. This tried-and-true writing tool is highly recommended for use in social science examinations (Richardson, et al., 2010).

Using measures such as the mean score, standard deviation, and the mean score, for instance, has been widely used by us as a standard percentage of focal propensity for a distribution, the examination that took place prior to the theory test revealed the processes that were used by the various inventory network executives (Cresswell, 2014). Both the clinic's profile and the respondents' segment attributes had mean values of 1-2, which were used to calculate the mean score, which ranged from 0 to 5.

In order to assess the strength of the connection between supply chain risk management and healthcare delivery, researchers used both inferential and descriptive statistical methods

(Pearson product moment correlation). Simple tables and graphs were used to summarise the data, making it easy to read and understand for anybody.

3.10 Study Area

The studies were carried out inside the limits of the Western Region of Ghana's several hospitals. The expansion of Ghana's economy owes a great deal to the country's healthcare system (Frodl et al., 2012). The main goal of this industry is to have a supply of medicines and safety gear on hand to meet the demands of patients. This is the ultimate goal of the business sector (Mills, Brugha, Hanson and Mcpake, 2002). The Western Region of Ghana covers around 2,391 square kilometres, or about 10% of the country's total geographical area. Ghana's high forest zone is situated in the equatorial climatic zone, which is characterised by typically agreeable temperatures, and is home to roughly 75% of the region's vegetation. Many researchers contributed to these estimates, so the data presented here may not be exact. It is also the wettest place in Ghana, with an annual average of 1,600 millimetres of rain. It is surrounded by the Gulf of Guinea to the south, the Ivory Coast to the west, and the Ashanti and Brong-Ahafo Regions to the east. Cape Three Points may be found in the Ahanta West District of Ghana, not far from Busua. This is the furthest south you can go in Ghana.

The region is home to 1,924,577 people, or almost 10% of the total population of the nation. By 2020, the region's population is projected to have increased by more than 100% thanks to the 3.2% annual growth rate. Over 40% of the total population is comprised of children and teens, leading to an overall dependency ratio of 83%. There are 80.50 people crammed into every square kilometre of land, according to our estimates. With around 103.4 men for every 100 women, we have a female-to-male ratio of 49.2 percent. Shama-Ahanta East, Bibiani-Anhwiaso-Bekwai, and Wassa West are the three districts with the highest urbanisation rates (a

combined total of 36.3% of the population). 36.3 percent of the world's population now calls a city home.

The Ahantas make up 6.3% of native Ghanaians, whereas the Nzemas comprise 10.6% of the population via the Evalue, 11.7% through the Wassa, 10% through the Sefwis, and 2.5% through the Aowins. The Ahanta people are the largest of Ghana's indigenous communities. The Ahanta people were among the first to settle in what is now Ghana. Even though they are not native to the area, the Fantes make up 18.2% of native-born Ghanaians there. These people originally came from the Central Region but have now integrated entirely with the local population. Even though the Fantes aren't really native to the area, they've managed to establish a strong cultural presence there anyway. This is so even though the Fantes are not an indigenous tribe of the Central Area.

Although there is religious freedom in the region, Christianity (practised by 81%) and Islam (8.5% of the population) are the two most common religions. The Pentecostal church has the greatest membership rate of any Christian denomination at 26.1%, followed by the Protestant church at 19.5% and the Catholic church at 19%. Some 16.1% of the population identifies with one of Christianity's various denominations. The greatest rates of Islam practise (8.5%) may be found in the districts of Aowin-Suaman (10.4%), Sefwi-Wiawso (10.1%), and Juabeso-Bia (12.1%), all of which have considerable migrant populations from the historically Islamic northern sections of the nation, notably the Mole-Dagbon regions. Islam has the largest number of followers in these regions. The percentage of people who adhere to African religious traditions is 1.5%, while 8.2% do not identify with any specific religious organisation.

The literacy rate in this region is 58.2%, with a somewhat lower percentage of women being literate (47.9%) than men (68.0%). Sixty-four point three percent of all kids are enrolled in

elementary school, while twenty-one point three percent are enrolled in junior high. A significant proportion of students drop out of school between the elementary and middle school years as a direct consequence of this. A significant dropout rate is seen during the transition from elementary to middle school, and this is due to a number of causes. As a result of a lack of secondary educational facilities, many rural youth must travel at least 10 kilometres to attend the junior high school that is geographically nearest to them. That's a problem too. Along with a deficiency of necessary infrastructure, the price tag is a major challenge. Over the last several years, a lot of work has gone into improving the infrastructure provided by elementary and junior secondary schools, leading to significant increases in both the quantity and quality of these facilities.

The Western Region offers several international and interregional business prospects, in addition to its many bilateral linkages. In addition to several additional bilateral links, these possibilities exist. Despite being one of the poorest regions in Ghana, the vast majority of its inhabitants engage in practises including open defecation, smoking in public, littering, and dumping mining waste. Despite the fact that it is one of Ghana's poorest areas, this is the case. Diseases including cholera, pneumonia, malaria, tuberculosis, acute respiratory infections, and anaemia are all on the rise as a result of this practise (Osumanu, Kosoe & Ategeeng, 2019). For this reason, the Ghanaian government regularly sends a variety of medical supplies to local hospitals so that they may give better treatment to local residents. Pharmaceuticals, PPE, logistics, and ward beds are just a few examples of the many different kinds of products that make up these supplies. The mining industry and agriculture sector are the main economic drivers in this area. Corn, cassava, plantain, okro, and rice are just a few of the many crops grown in this region.

3.11 Chapter Summary

All the fundamentals of research methods have been discussed here. The research strategy, research rationale, study location, population, testing procedures, data collection technique, data management, and analysis were all part of these steps. The questions on the test were a mix of positivist logic and hard numbers. Once again, the goals of the investigation required a systematic inspection strategy.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

The goal of this investigation was to determine whether or not the Western Region of Ghana's Clinical Inventory Network Board improved the quality of medical treatment at any of the region's clinics. The study's stated goals were to "examine the effects of the provider board system on the medical services store network execution of a sample of emergency clinics in Ghana's Western Region;" "evaluate the effects of persistent mass dissemination on the inventory network execution of medical clinics in Ghana's Western Region; and "dissect the effects of stock administration procedure on the output of these clinics."

4.1 Demographics Information of Respondents

The respondent's demographic information was quantified using frequency and percentages (%), the two statistical methods most useful for analysing categorical variables. This data provides a sufficient description of the survey participants and so proves that the sample is representative of the target population. The key results are summarised in Table 1. Table 1 below provides some basic demographic information about the study's participants. Overall, 104 females (or 61.54%) and 65 males (38.54%) filled out the survey. The great majority of respondents were female, as shown by the data collected from the sex demographics of the respondents.

Table 1: Respondent Demographics

Variable	Option	Frequency	Percentage%
Sex	Male	65	38.46
	Female	104	61.54
Total		169	100
Age	18-34 years	88	52.07
	35-44 years	46	27.22
	45-54years	27	15.98
	Over 55 years	8	4.73
Total		169	100
Level of education	No formal education	5	2.96
	Below HND	28	16.57
	HND/Equivalent	47	27.81
	First Degree	82	48.52
	Post Graduate degree	7	4.14
Total		169	100
Length of work	Less than 5 years	98	57.99
	5-10 years	42	24.85
	11-15years	22	13.02
	More than 15 years	7	4.14
Total		169	100
Ownership status	Private hospital	157	92.90
	Public hospital	12	7.10
Total		169	100

Source: Field survey, (2022)

Second, among the poll takers, 52.07 percent were between the ages of 18 and 34; 27.22 percent were between the ages of 35 and 44; 15.98 percent were between the ages of 45 and 54; and

4.73% were older than 55. The majority of respondents were between the ages of 18 and 34, as shown by the examination of their age demographic data.

Additionally, there are 82 individuals with a postgraduate degree, 5 people with no formal education (2.96%), 28 people with certificates below HND (16.57%), 47 people with an HND/Equivalent (27.81%), and 7 people with a first degree (4.14%) in the total population sampled. The majority of respondents had at least a bachelor's degree, as shown by the survey's examination of the educational backgrounds of the demographic features of the respondents.

In addition, among the total population of the sample who participated in the survey and responded to the questionnaires regarding length of service, 98 people have worked for their respective hospitals for less than 5 years (representing 57.99% of the total), 42 people have worked for the hospitals for 5-10 years (representing 40.2% of the total), 22 people have worked for the hospitals for 11-15 years (representing 13.02% of the total), and 7 people have worked for the hospitals for more than 16 years.

4.2 Descriptive Statistics of Constructs

The means (M) and standard deviation (SD) were used to analyze the constructs descriptively (SD). These subjectively created criteria, which were influenced by earlier research and a measuring scale, were used to interpret the mean. 0-1.49-disagree; 1.5-2.49-agree somewhat; 2.5-3.49-moderately agree; 3.5-4.49-agree; and 4.5-6-strongly concur.

Table 2: Supplier Management Strategy

	Mean	Std. Deviation
Transactions with a variety of different suppliers	3.52	1.07
Cooperation between different manufacturers	3.51	0.94
Collaboration on a strategic level	3.67	0.97
Communication with the many vendors.	3.93	0.91
Communication of information	3.75	0.88
Incentives for various types of suppliers	2.84	1.22
There is a potential threat posed by suppliers to the supply chain.	3.41	1.03
Getting together with the people in charge of inventory and the suppliers	3.04	1.19
Engagement of suppliers in any and all actions pertaining to inventory	3.39	0.98

Source: Field survey, (2022)

Results from the supplier management construct showed that respondents largely agreed that the hospital should collaborate with suppliers (M = 3.89, SD = 1.07), form strong strategic alliances with suppliers (M = 3.67, SD = 0.97), communicate effectively with its suppliers (M = 3.93, SD = 0.91), and share all relevant information with its suppliers (M = 3.75, SD = 0.88). The medical centre regularly meets with its vendors (M=3.04, SD=1.19), gives incentives to them (M=2.84, SD=1.22), monitors them for supply chain risks (M=3.41, SD=1.03), and requires their participation in inventory planning and management (M=3.39, SD=0.98). To encourage the suppliers, several steps have been taken.

All of these findings agree with those of Fox et al. (2009), Mwangu and Iravo (2015), Ryu, Park, and Min (2007), and Wu et al (2005). Fox et al. (2009) argue that in the event of a drug shortage, hospital procurement and supply chain managers should have access to alternative vendors. This is because an increase in hospital mortality may result from insufficient medication supplies. Hospitals may still receive high-value drugs even when supply is low because to strategic engagement with suppliers, as emphasised by Mwangu and Iravo (2015), Ryu, Park, and Min (2007), and Wu et al. (2005).

Table 3: Inventory Management Strategy

	Mean	Std. deviation
Selects health commodities using external and internal medications.	3.51	0.88
Maximum, minimum, and reorder levels for hospital consumables are established.	3.72	0.99
The hospital does stock taking.	4.14	0.82
The hospital determines the quantity of health commodity required based on previous usage.	3.72	1.03
The hospital uses user requests to calculate the quantity of health commodities required.	3.49	1.12
The hospital planned ahead of time	3.84	0.92
To keep track of its inventories, the company employs an enterprise resource planning system.	3.33	1.15
Inventory items have been categorized in order of priority.	3.69	0.95
Model of Economic Order Quantity	3.36	0.95
Periodical replenishment of stocks	3.74	0.83
Keeps a minimum stock level	3.48	0.99
JIT inventory control system	3.18	1.04
To reduce waste, the JIT system is used.	3.22	1.02

Inventory management strategies assist manufacturing to avoid inventory bottlenecks.	3.65	0.83
The medications and PPE are delivered on time.	3.42	1.05
Vendor controlled inventory systems are used.	3.33	1.12
Automatic inventory management	2.95	1.14
Controls its inventories in a chosen manner.	3.33	1.02
Works with vendors to enhance the system.	3.75	1

Source: Field survey, (2022)

Hospitals use external and internal medicines to select health commodities (M=3.51, SD=0.88); hospitals set maximum, minimum, and reorder levels for hospital commodities (M=3.72: SD=0.99); hospitals take stock regularly (M=4.14, SD=0.82); hospitals use past consumption to determine quantity (M=4.14, SD=0.82); and hospitals use past consumption to determine quantity (M=4.14, SD=0.82).

The hospital uses vendor managed inventory systems (M=3.33, SD=1.12), automatic stock tracking (M=2.95; SD=1.24), selective control of its inventory items (M=3.22; SD=1.02), timely delivery of drugs and personal protective equipment (M=3.45; SD=1.05), the just-in-time (JIT) system for reducing waste (M=3.22; SD=1.02), and inventory management practises (M=3.35; SD=1.05) to prevent inventory bottlenecks

Just-in-time (JIT) and reengineering applications can reduce commodity shortages, as shown by the research of Kumar, Ozdamar, and Zhang (2008). Kumar, Ozdamar, and Zhang's contributions all but guarantee these findings (2008). Furthermore, results from Management (2018) demonstrated that the most relevant practises that had a significant impact on the efficiency of public health institutions in the Apinto supply chain were accurate inventories, information technology, and lean inventory procedures.

Table 4: Last Management of Mass Distribution

	Mean	Std. deviation
The transportation management practices enable timely delivery of products and services to customers	3.26	0.99
Timely delivery of drugs and PPE	3.24	0.94
Effective distribution of drugs and PPE	3.32	1.05
Prolonged waiting time	3.19	1.01
Rapid turnaround time	3.12	1.05
Transportation management products are offered accessible	3.56	1.10
Products and services are supplied utilising the correct mode of transportation	3.70	0.97
Ensures that the product is delivered to the client at the lowest possible cost.	3.22	1.07
Uses electronic system to track all product that are transported to facilities	2.92	1.23
makes use of an electronic tracking system to keep tabs on all products as they are delivered to different locations.	3.52	0.97
Timely deliveries from suppliers	3.60	0.97

Source: Field survey, (2022)

In addition, results for the last mass distribution management construct showed that respondents were mostly in agreement that transportation management practises allow timely delivery of goods and services to consumers (M=3.26, SD=0.98), that the hospital has timely delivery of

medications and PPE (M=3.24, SD=0.94), that the hospital has effective distribution of drugs and PPE (M=3.3, SD=1.05), and that the hospital has considerable lead time (M=3.19.SD=1.012).

Again, similar results were found for whether or not the emergency clinic used the most cost-effective method of transport for its goods and services (M=3.70, SD=0.97), whether or not it used an electronic framework to track all items that were shipped to the medical clinic (M=2.92, SD=1.23), and whether or not it was adequately prepared to avoid inventory shrinkage (M=3.70, SD=0.97).

Nguegan (2017) and Mafini (2017), as well as Yang et al(2015) .'s study, back up these conclusions (2004). Nguegan and Mafini (2017) found that having a well-supported transportation system reduces both the production network's vulnerability and the overall stock that must be maintained throughout the store network. In a similar vein, Yang et al. (2004) found that an organization's capability to achieve product assortment, satisfactory delivery administration, and overall performance is significantly impacted by the performance of inbound and outbound transportation in terms of meeting delivery plans and providing the best possible response to customer requests.

Table 5: Hospital Supply Chain Performance

	Mean	Std. deviation
Patient complains	3.29	0.83
Service speed	3.77	0.73
Patients' hospital demands	3.75	0.83
Fast enrollment	3.91	0.85
Inventory cost	3.54	0.89

Customer service	3.53	0.86
Transport cost	3.43	0.95
Hospital-supplier ratio	3.64	0.82
Logistics response time	3.48	0.86
Storage/warehousing cost	3.39	1.05
Last bulk distribution rate	3.48	0.91

Source: Field survey, (2022)

The study's results are supported by the research done by Ferrand et al. (2016), Benton and Maloni (2005), and Aronsson, Abrahamson, and Spens (2005). (2011). According to research by Ferrand et al. (2016), and Aronsson, Abrahamsson, and Spens, the effects of power-driven buyer-seller interactions on supply chain satisfaction is significant (2011). The hospital's agility, its capacity to enjoy the advantages of lean operations, and the satisfaction of its patients are all significantly impacted by the relationship between the institution and its suppliers. More evidence that the hospital's agility and the success of lean strategies are attributable to the specifics of its patient group was discovered by Aronsson, Abrahamsson, and Spens (2011).

Table 6: Contentment of Patients

	Mean	Std. Deviation
The hospital is equipped with devices, technology and medical equipment	3.47	1.01
Internal organization helps achieve rapid response to patients	3.59	0.96
The hospital makes reliable drugs available for patients	3.55	0.95
The hospital has all necessary medicals available	3.28	0.96

Courtesy and professionalism	3.98	0.84
Drugs and equipment available	3.38	0.89
Providing clear complete, and accurate information	3.72	0.87
Feedback and complaints about drugs	3.26	1.04
Behaviour and mannerism of hospital staff	3.66	0.90
Timeliness of feedback	3.43	1.00
Fairness of pricing	3.74	1.03

Source: Field survey, (2022)

Moreover, the results from the patient satisfaction construct showed that respondents mostly agreed with the following statements about the hospital: (M = 3.47, SD = 1.01) that the hospital is equipped with devices, technology, and medical equipment; (M = 3.59, SD = 0.96); that the hospital makes reliable drugs available for patients; (M = 3.55, SD 0.95); and that the hospital has altruistic staff.

Additional evidence is provided by publications like Khudair (2011) and Javed (2018). According to Khudair, patients are more likely to be satisfied with a pharmacy if they get timely service, the pharmacist is kind, they are given helpful advice for medical supplies, the pharmacy is conveniently located, and the waiting room is clean and comfortable (2011). Javed (2018) also found that the two most important elements in influencing a patient's level of satisfaction were the degree of empathy shown by the healthcare provider and the level of responsiveness displayed by the healthcare provider.

4.3 Assessment of the PLS-SEM

The breakdown of MEN utilising the approach of displaying the underlying situation using partial least squares (PLS) is the key focus of the investigation. In order to get a good legitimacy and unwavering quality of the investigation, the key basic NOBI suspicions or model characteristics such as thing loadings, marker unwavering quality (IR), develop dependability (CR), merged legitimacy (normal difference extricated), multicollinearity (VIF), and discriminant legitimacy were initially surveyed (Hair et al., 2014). (Hair et al., 2014). Extra model results were studied once more in an effort to make the basic model's findings more relevant (Henseler et al.,2009; Ringle et al., 2011).

4.4 Measurement of Model Assessment

Internal consistency (IR), structural reliability (SR), and convergent validity (CV) are shown in Table 7 as results of the model's attributes (average variance extracted).

Table 7: Validity and Reliability Evaluation

Items	Cronbach's Alpha	rho_A	Composite Reliability	Convergent variance	InnerVIF values (HS)	PS
HS	0.78	0.80	0.86	0.61	-	1.74
IM	0.72	0.73	0.84	0.63	1.56	1.63
LMD	0.81	0.83	0.89	0.73	1.33	1.46
PS	0.89	0.90	0.91	0.60	-	-
SM	0.74	0.77	0.85	0.66	1.51	1.70

IR (CA and rho A-Indicator reliability: CR-construct reliability; AVE -Convergent validity
Source: Field survey, (2020)

4.5 Internal Stability and Reliability

In order to maintain a high standard of uniformity throughout the research, Table 7 served as a compass. The reliability of a pointer is a representation of the dissimilarity between two markers that may be expressed in terms of the primary latent variable of each marker (Hair et al., 2012). For the main IR criterion to be met, the radius of a randomly chosen marker's edge must be bigger than 0.70. There were several authors involved in this topic, including Wong (2013), Chin (2010), Hair et al. (2011), and Latan and Ghozali (2013). It has been shown by Vinzi and Trinchera Amato (2010) that the edge esteem indicates that the standard deviation of the estimate error is not the same as the difference between a develop and its pointer. The connection between the two was analysed, leading to this result. At the end of the day, the marker reliability IR method is an effective method for determining whether or not events occurring on different scales are really unidimensional. We did this by using the results of the Cronbach alpha () and rho A () analyses.

All of the data show that the criteria were met by the components that are not being used, and their limits are more than 0.70, thus the model could use them. Many studies propose using rho A as the measure with which to examine pointer consistency (Chin, 2010; Hair et al., 2014; Henseler, Hubona and Ray, 2016). This is because rho A is a far more reliable indicator of marker constancy. Jaw (2010) hypothesises that rho A (a) values for Joreskog should be greater than 0.70. Scores ranged from 0.750 to 0.898, indicating performance that was outstanding to satisfactory. This includes HS (=0.80), SM (=0.77), IM (=0.73), LMD (=0.83), and HS (=0.77).

Table 7 also includes the outcomes of the assessments used to determine reliability. Continuity of development quality (CR) was first established by Bagozzi and Yi (1988) and then refined by Ringle et al. (2012) to mean the extent to which a construct is being fairly appraised by its

markers throughout its development. It's worth noting that Ringle et al. (2012) also utilise this definition. As a result, we'll feel a stronger bond. The development team proposes that CR requires all assigned pointers for a build to be completed before deciding how to determine how to apply the composite unshakable quality, since there aren't many relegated markers expected for a build (Bagozzi and Y, 1988). It has been recommended by NOBIS that the CR value be at least 0.70. Ringle et al. (2012); Bagozzi and Y. (1988). The results showed that all CR values were higher than or at least equivalent to the threshold value of 0.70. This guarantees that the allocated pointers have solid connections to one another and to their respective constructions.

4.6 Convergent Validity

Indications of the convergence method's dependability Table 7 also included the research's curriculum vitae. Convergent validity assessment (CV) 2011 is common in Hair et alPLS-SEM models, and average variance is removed (AVE). A design's ability to compare the variation of a marker to the total fluctuation and difference due to estimation error may be understood via the concept of the absolute value equivalent (AVE). The hair, and the people, at work (2011). The SEM model's parameters' AVES values were analysed and assessed in order to put the CV to the test. Fornell and Larcker (1981) and Hair estimated time of arrival 1 proposed an AVE with a minimum limit of 0.5 to demonstrate the focalized validity of a structure (2011). Based on these results, it can be concluded that the scale estimate is accurate, as the AVES of the relative number of inactive components increased from 0.59 to 0.66, above 0.5.

4.7 Multicollinearity among Exogenous Variables

External and internal growth factor multicollinearity was also analysed (VIF). Hair et al. (2014) state that multicollinearity diagnostics are checked to guarantee coefficients are free of tendency and to reduce excessive collinearity amongst the various building blocks of the pointer. This

was done so that precise coefficients could be calculated. When the VIF regards were more than 10, multicollinearity among the unconstrained components was proposed, as stated by Pallant and Manuel (2007). This impacted efforts to develop a reliable PLS-SEM model. Hair et al. (2014) state that the VIF potential revenues of each innovation shouldn't typically be the cut-off point of 5.0. The external factor had the following effects on the variable's internals: SM (1.51), IM (1.56), and LMD (0.51). (1.33). Thus, it was determined that no multicollinearity exists between the exogenous components.

Table 8: Constructs' Multicollinearity

	VIF
HS2	1.40
HS5	1.50
HS6	1.62
HS9	1.61
IM16	1.60
IM17	1.42
IM6	1.60
IM8	1.54
LMDI	1.65
LMD2	2.33
LMD3	1.90
PS1	2.32
PS10	2.37
PS2	2.07
PS3	2.19
PS4	2.33
PS6	2.47
PS7	2.04
PS8	2.04

SM6	1.45
SM7	1.47
SM8	1.67

Source: Field survey, (2020)

Table 8 shows that when an external VIF model was applied to the relevant metrics, values ranged from 1.000 to 2.47. These results definitively show that all VIFs are below the 0.5 thresholds established by Hair et al (2014). The results show that the markers used to assess many different climatic states are colourless. Accordingly, Ringle, Weade, and Becker (2015) concurred with the results of the study.

4.8 Discriminant Validity

According to Hair et al., the discriminant validity of the model was also studied to see how well it performed in general (2011). The Heterotrait-Monotrait Ratio (HTMT) and the criteria defined by Fornell and Larcker (1981) were used to ascertain the discriminant validity. A study's discriminant validity, as defined by Fornell and Larcker (1981), is a guarantee that the study's latent variables are unrelated to one another. This is a citation-needed paraphrase from: Discriminant validity may be used to check whether there are any collinearity issues in the basic model (Hair et 1., 2014). The rule that their attention loads their unique advancements should be bigger than other connection values among the latent components for biassed value was developed by Fornell and Larcker (1981). (Fornell and Larcker, 1981; Chin, 2010), Table 9 displays the findings.

Table 9: Fornell-Larcker Criterion

	HS	IM	LMD	PS	SM
HS	0.78				
IM	0.51	0.80			
LMD	0.51	0.45	0.85		
PS	0.66	0.42	0.60	0.77	
SM	0.56	0.55	0.42	0.60	0.81

Note: Diagonal elements in bold square root of AVE: Off-diagonal elements = correlation between constructs.
Source: Fornell and Larcker (1981)

Table 9 of the discriminant validity test results shows that the range of unique connection values among the latent components is larger than the increase of individual factorial loadings. It seems that the cost estimates for each construction project are unique. At some point, the rule of thumb proposed by Fornell and Larcker was adopted. To assess the reliability of the research, we used the heterotrait-monotraite discriminant percentage. Depending on the underlying illness condition showing, this is a novel measure for gauging discriminant validity, as stated by Rigdon et al. (2014) and Sarstedt, Ringle, Smith, Reams, and Hair.

According to Sarstedt et al., the HTMT percentage has become a widely accepted benchmark for evaluating relationships between passive components (2014). For discriminant validity, they suggested using the HTMT% rather than the Fornell-Larcker overburdens assumption. This is because, in similar study contexts, the HTMT% outperforms both the Fornell-Larcker model and cross-stacking in establishing the absence of unfair validity. Table 10 below displays the HTMT percentage result in this style.

Table 10: Heterotrait-Monotriat (HTMT) Ratio

	HS	IM	LMD	PS	SM
HS					
IM	0.64				
LMD	0.61	0.59			
PS	0.78	0.51	0.70		
SM	0.69	0.77	0.53	0.67	

Source: Field survey, (2020)

Wetzels and Odekerken-Schroder (2009) state that HTMT values (which quantify the correlation between latent variables) need to be less than 0.85 to have discriminating validity. All of the HTMT values for the different building types that were found to be less than 0.85 have been gathered in the following table. This is an example of the diversity amongst building types.

4.9 Path Coefficient Significance

The study's next stage was to analyse the four research hypotheses to ensure the measurement met the PLS-SEM criteria. Some hospitals in Ghana's Western Region were chosen to test the hypothesis about the effects of supplier management (SM), inventory management (IM), and final mass distribution (FMD) on supply chain performance and, in turn, patient satisfaction. This was done to see whether the particular theories held water (LMD). The hypotheses were tested using Hair et al coefficient (B) and the degree of significance from 5000 bootstrap samples to establish validity and choose a preferred direction (2014). Results from utilising PLS-SEM to test hypotheses are listed in Table 11.

Table 11: SEM and Hypothesis Testing Results

Structural path	B	t-test	p-values	Decision rule
SM-> HS	0.33	3.81	0.00	P<0.5H1a
SM-> PS	0.24	2.55	0.01	P<0.5H1b
IM -> HS	0.20	1.93	0.05	P<0.5H2a
IM -> PS	-0.06	0.65	0.52	P<0.5H2b
LMD -> HS	0.28	.006	0.00	P<0.5H3a
LMD -> PS	0.34	4.35	0.00	P<0.5H3b
HS-> PS	0.38	3.78	0.00	P<0.5H4

Note: * p<0.05
Source: Field survey, (2020)

4.10 Hospitals' Supplier Management Strategy for Supply Chain Performance

The initial objective of the study was to determine how efficient the hospital supply chain is when it comes to supplier management. This study's H1ao and Hlbo hypotheses posited that improvements in supply chain efficiency and patient satisfaction would result from adopting a supplier management analysis approach. Table 11 shows that there is a positive correlation between patient satisfaction and the way suppliers are managed at hospitals (= 0.33; t = -3.814; p 0.05; = 0.24; t = 2.55; p 0.05). The t-statistics for the model in question, 3.814 and 2.552, are both larger than the critical value of 1.96, hence this is the case. Hence, this is the explanation for why this took place.

Due to the fact that the data supported the alternative explanation, the researchers concluded that the null hypothesis must be false. Thus, it was concluded by all parties that the supplier management strategy significantly affected both the efficiency of the hospital's supply chain

and the happiness of its patients. The results of study A point to a positive correlation between exogenous and endogenous factors. In turn, this will add 33.3% and 23.8% to the length of hospitals' supply chains, but it won't have any discernible effect on the margins at which patients report being happy (i.e. 33.3 percent and 23.8 percent). This suggests that a supplier management approach that prioritises patient satisfaction and supply chain risk management would always have positive results in terms of supply chain performance and patient happiness in hospitals situated in the Western Region.

The research confirmed the expectations of network theory. Organizations' interactions with the many entities that make up their supply chains may be described, at least in broad strokes, by the network theory. Buyers, sellers, and partners in commerce are all included here. Effective communication, long-term mutual commitment, relationship dynamism and growth, and the sharing of important resources that both parties in the partnership already possess are all central tenets of this theory, which suggests that these factors can contribute to the development of healthy relationships between partners (Scott, 2011). The potential for an increase in patient deaths due to medicine shortages necessitates additional measures to be taken by hospital procurement and supply chain management. This suggests that the aforementioned hospitals may be able to reduce supply chain risk by using methods like supplier management. This is due to the fact that the studies performed uncovered an approach to supplier management that successfully mitigates supply chain risks, which in turn boosts the efficiency, timeliness, quality, adaptability, and cost-effectiveness of the hospital's supply chain. Network theory suggests that hospitals may implement a supplier management strategy to deal with recurring supply chain risk concerns. As so, it would conform to the guidelines set out by the supply chain risk theory.

The results of this study were consistent with those of prior studies (Fox et al., 2009). The competitive performance of manufacturing enterprises and the management of their connections with their suppliers in the United States, Japan, Italy, and Korea were studied by Abdallah, Abdullah, and Mahmoud Saleh in 2017. It was shown that better communication with their suppliers might help these businesses operate better in a competitive market. Cooperation between companies in the supply chain has been shown to improve corporate performance in Jordan's automotive sector, according to research by Sheu, Yen, and Chae (2006) and Jamal, Ahmed, and Al-Doori (2019).

4.11 Inventory management strategy for improving the performance of hospitals' supply chains and patient satisfaction

The second goal of the study was to learn how inventory management affects hospital supply chain efficiency and patient satisfaction. Hospital supply chain efficiency and patient satisfaction in the Western Region were not significantly affected by the inventory management analysis method, as predicted by Hypotheses (H), (H), and (I) of this study. Neither patient satisfaction nor supply chain efficiency are positively affected by the inventory management method, as shown in Table 11 (B=0.20; t=1.93; p>0.05; =0.06; t=0.65; p >0.05). Because the model's t statistics are less than 1.96 in this example.

The lack of support for the alternative hypothesis in the data demonstrates the validity of the null hypothesis. This directly disproved the long-held belief that adjusting inventory management tactics wouldn't materially improve hospital supply chain efficiency or patient happiness. The study's results suggest an inverse relationship between exogenous and endogenous variables. An increase in inventory management strategy of 19.9% and -0.062 units will not enhance the efficiency of the hospital supply chain or the degree of patient satisfaction.

Because of this, it seems that supply chain management strategy does not play a significant role in ensuring continued supply chain success, which in turn may not increase patients' happiness.

The study's conclusions ran counter to those of the vast majority of the internet. According to the network theory, healthy relationships form when people are able to talk to one another freely, make long-term commitments to one another, experience mutual growth and development in their connections, and pool valuable resources (Scott, 2011). This indicates that the relevant hospitals are not able to completely reduce supply chain risk via inventory management. This is because studies have shown that this tactic is not useful for reducing supply chain risk or improving hospital supply chain efficiency, adaptability, or speed of service delivery. This is the outcome.

The results of this study were not supported by prior studies by Mbah, Obiezekwem, and Okuoyibo (2019). Research by Mbah, Obiezekwem, and Okuoyibo (2019) examined the effect of stock management on the operational execution of manufacturing firms in South-East Nigeria. They concluded that there is a positive, substantial relationship between stock expense, no-time-to-lose methodology, materials requirement planning, and vital provider association and operational performance.

4.12 Last Mass Distribution Management Strategy on Hospital Supply Chain Performance and Patient Satisfaction

Researching how Last mass dispersion executives affected the efficiency of healthcare provider production networks was the study's third goal. The study examined the null hypotheses H3b0 and H3b0, which posited that the recent widespread dissemination of the executive's examination technique would not significantly affect the efficiency of the clinic store network or the contentment of patients in the Western Region. Table data suggests that current board

system mass distribution has a good effect on both medical clinic production network execution and patient satisfaction (= 0.20; t = 1093; p>0.05 and = -0.06; t = 0.65; p>0.05, respectively). This is because both of the model's independent t-measurements, 3.056 and 4.351, are more than 1.96.

This led to the rejection of the alternative hypothesis, which was supported by the data. Since this is the case, the selected mass distribution management approach is likely to have far-reaching consequences for both supply chain effectiveness and patient satisfaction. The research found a favourable correlation between endogenous elements and environmental factors in the B. Hence, a rise in production network execution and patient fulfilment by equal margins (for example, 27% and 33%) would be followed by a rise in last mass conveyance the board investigation by equal margins (for example, 27% and 33%). This suggests that the most up-to-date approach to managing the distribution of drugs on a large scale was required to maintain the status quo of distribution inefficiency. Generally speaking, patient satisfaction and supply chain performance in the Western Region improve when PPEs are distributed to many hospitals for this study.

By establishing a reliable final mass distribution network, hospitals will be able to reliably obtain supplies like pharmaceuticals and PPE, which will boost supply chain efficiency and patient satisfaction. By maintaining a steady supply of pharmaceuticals and personal protective equipment (PPE), hospitals may improve their responsiveness to patients' needs and the pace at which they can provide care, all within the framework of the current system. The asset-based worldview hypothesis states that for a firm to gain a competitive advantage, its assets must first and foremost be huge, extraordinary, incomparable, and non-replaceable. In order to better support their previous mass transportation framework and boost the performance of their

inventory network, the medical clinics under consideration should ensure that their equipment is distinctive and beneficial.

This finding jibes with previous studies by Yang et al. (2004), who found that inbound and outbound transportation performance influenced delivery on time, the quality of responses to customer inquiries, and the organization's capacity to select and ship items, administer upgrades, and transport them effectively. Consistent with their results, this outcome was determined to be. In 2016, Ortiz-Catalan et al. investigated California's medical clinics' coordinations administrations and scepticism. They concluded that inadequate coordination administrations significantly affect local medical care frameworks' foundations. You may say this is similar to what has been discussed here.

4.13 Hospital Supply Chain Patient Satisfaction

The quality of care provided to patients as a result of an efficient supply chain was the subject of the fourth goal. Patient satisfaction in the Western Region is not significantly affected by the investigation of the hospital supply chain, according to the H4 hypothesis of the study. Based on the data in Table 11, we can conclude that patient satisfaction is positively impacted by supply chain efficiency (=0.38; t=3.78; p>0.05). This is because the t-statistics for the model were 3.780, which is more than the critical threshold of 1.96. With the data trending in the expected direction, it was concluded that the alternative hypothesis could not be sustained. Thus, the premise that patient happiness is significantly impacted by the effectiveness of the hospital supply chain was confirmed. Findings suggest a positive interaction between exogenous and endogenous factors.

As a result, it can be concluded that a similar increase of 38.3 percentage points in the retail network execution of medical clinics would be expected. Evidence like these suggests that a well-functioning inventory network is crucial to establishing a robust medical services transport infrastructure. The study found that Western Region hospitals with a larger stock of drugs and PPEs consistently lead to an increase in patient satisfaction. The inventory network execution of emergency clinics is crucial to the management of production network risk because it ensures that clinics can satisfy patient needs without running out of medications or other PPES. This is because it helps urgent care centres fulfil the needs of their patients. Perhaps more time will be spent in utter stillness as a consequence of this.

The research results backed up the idea of an asset-based approach. This assumption states that the supply chain assets themselves constitute the SCM's boundary. Current mass distribution, data innovation, and centre capabilities are three examples of such assets. Having SCMP skills and the ability to coordinate inventories across networks (Blome et. al, 2014). This suggests that medical facilities might benefit from employing professionally trained procurement specialists. The hospitals' ability to provide treatment will increase, and that will lead to happier patients. A previous research by Clark, and Kallenberg found similar results to the ones found in this one (2007). Patients in states with a larger number of registered nurses reported higher levels of satisfaction with their nursing care, whereas those in states with fewer registered nurses reported lower levels of satisfaction.

4.14 Target Endogenous Variable Variance

This section of the article presents the PLS-SEM determination coefficient calculation of the model's prediction accuracy (R2). The overall model effect (q2), the predictive significance

(Q2) according to the Stone-Giesser test criteria, and the impact size (f2) have also been considered. Below, Table 12 details these results.

Table 12: Target Endogenous Variable Variance

LV	R^2	HSf^2	PSf^2	Q^2	q^2
HS	0.43	-	0.19	0.35	0.04
IM	-	0.04	0.01	0.27	0.08
LMD	-	0.10	0.18	0.44	0.18
PS	0.56	-	-	0.45	0.20
SM	-	0.13	0.08	0.32	0.00

Note: L.V = latent variable, R2 =R square, f2 = effect size, Q2 =predictive relevance, q2=relative impact of the model.
Source: Field survey, (2020)

4.15 Coefficient of Determination

In this analysis, we delved into the model's prognostic prowess. According to Hair et al., R^2 is the sum of the effects of the exogenous factors (HS and PS) on the dependent variable (2011). Further, R^2 shows the extent to which the independent variables explain the observed pattern (Cohen, 1988; Chuan, and Penyelidikan, 2006). To paraphrase the findings of Thalheimer and Cook (2002) and Henseler et al. (2009), a model is generous, moderate, or impotent if its R^2 effects are more than 0.67, 0.67 p> 0.29, or 0.29. These R^2 repercussions, as discovered by Thalheimer and Cook (2002), are a reflection of the generous nature of the model.

An high $\frac{R}{2}$ coefficient of determination (42.6%; see Table 12) was found for hospital supply chain efficiency. This suggests that three factors—supplier management strategy, inventory management strategy, and mass distribution strategy—have a medium impact on hospital

supply chain performance. In terms of $\frac{R}{2}$, the degree of patient satisfaction is predicted by 0.563. According to these results, 56.3% of the difference in patient satisfaction may be attributable to the efficiency of the hospital's supply chain. More encouragingly, patient satisfaction increased by 56.3% at the hospitals studied in the Western Region of Ghana as a direct result of the efficiency of their supply chains. These hospitals may be held accountable for 56.3% of the variance in patient satisfaction; thus, it might be claimed that they need to pay special attention to the management of supply chain risk in order to achieve efficient supply chain performance.

4.16 Effect Size (f2)

Cohen (1988) proposed a sway pointer premise in which the relative importance of each external variable was evaluated using influence size (12) thresholds of 0.35 (very big), 0.15 (moderate), and 0.02 (very tiny). It can be seen from the table that SM has a minimal effect on NOBIS inventory network execution and patient fulfilment (HSf2 = 0.128, PSf2 = 0.076). As an added bonus, SM has a PSf2 of 0.076. The IM and LMD of HS2 and PSf2, on the other hand, were shown to have a moderate impact on store network execution and a negligible impact on patient fulfilment, respectively. Since the HSf2 and PSf2 IM and LMD values were 0.044 and 0.005, and 0.100 and 0.81, respectively, this is the case.

Patient satisfaction was also shown to be significantly impacted by HS's influence on the efficiency of the hospital's supply chain. The value of f2 for HS, 0.192, demonstrated this. When these tactics are put into place, the study shows that the ultimate mass distribution approach provides the greatest boost to supply chain efficiency. SM and IM come in a close second and third. This is because its criterion value of 0.192 is below the 0.35 threshold for medium, effective hospital supply chain performance, as defined by Cohen's. Therefore, it has a more profound and striking effect on happiness.

4.17 Predictive Relevance (Q2)

Using the Stone-Geisser Q^2 test, the predictive value of indicator exogenous inert components was assessed (Roldan & Sanchez-Fransco (2012). Prescient significance (Q^2) is examined, as stated by Hair et al. (2014), entails leaving out data points from the grid, evaluating the model, and then generating forecasts regarding the data points that were left out. ccording to the rule of thumb, an external variable's, (Q^2) value of respect should be bigger than 0 (Henseler et al., 2009; Chin, 2010).

According to Henseler et al. (2009), 0.02 equals or less than Q^2 0.15 (frail impact), 0.15 equals or less than Q^2 0.35 (moderate effect), and Q^2> 0.35 all have a considerable affect (solid impact). While comparing the Q^2 value to zero indicates that the exogenous variable can be predicted, Rigdon (2014) and Sarstedt et al. (2014) contend that this does not reveal the nature of the expectation.

It may be seen from Table 12 that all external elements have the potential to adequately predict the model. This is due to the fact that the exogenous components' individual Q^2 values were as follows: SM (0.32), IM (0.27), LMD (0.44), HS (0.35), and PS (0.45). Except for LMD and PS, where Q^2 > 0.35 indicates great predictive relevance, SM, IM, and HS Q^2 values all indicate moderate predictive significance.

4.18 Predictive Relevance (q^2)

The character of each endogenous develops predictive pertinence for a certain endogenous build was also investigated. This was accomplished by using the following equation: q^2= (Q^2 included - Q^2rejected)/(1-Q^2 included). The standard of choice is that q^2 upsides of 0.35 address massive, 0.15 address medium, and 0.02 address little sizes affect individually

(Henseler et al., 2009). As a result, all of the q^2 values (SM=0.002; IM=0.08; LMD=0.18; HS=0.04; PS=0.20) were over 0.015, indicating moderate impact sizes, while SM, IM, and HS q^2 values were below 0.015, indicating small impact sizes.

An sense of low impact sizes across strategies utilised to build the model is conveyed. The model performs well for free components, as seen by the prediction results (q) (SM, IM, and LMD). The efficiency of the production network and the level of patient satisfaction are two examples of potential dependent factors that may be better defined with this information. Positive and non-zero q^2 upsides of the in subordinate components are required for the model to have predictive value, as stated by Henseler et al. (2009).

4.19 Chapter Summary

Here, we presented the findings from the PLS-SEM analysis as well as the discussions around the hypothesis. The investigation shows that the executives in charge of service provision, inventory management, and final stages of mass distribution play a crucial role in the smooth functioning of the clinic's production network. Patients' levels of satisfaction with prospective emergency clinics are also significantly impacted by the efficiency with which the clinics' retail networks carry out their operations. This research suggests that these systems are vital in the process of risk management for production networks. The following part mostly included the introduction, the results, and the recommendations.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The chapter's focus is on the investigation's objectives, potential findings, and recommendations for future strategic planning. Suggestions for further research were included as a nice cap to the chapter.

5.1 Summary

The theoretical foundation that guided this study was conceptually similar to the clinical responsibilities of store network risk on the executive strategies of Western Region medical clinics. The goal of the study was to examine the effects on public health of a few of clinics' approaches to clinical stockpile management and the provision of medical services in Ghana's Western Region. Targets for this assessment include the following:

1. determine the impact of supplier management strategy on patient satisfaction and hospital supply chain performance in the Western Region;
2. examine how hospital supply chain performance and patient satisfaction in the Western Region are affected by inventory management strategy:
3. evaluate the impact of the most recent mass distribution management strategy on patient satisfaction and hospital supply chain performance in the Western Region:
4. analyse the impact of patient satisfaction in the Western Region on hospital supply chain performance.

The study formulated and looked at four aims to help with the exploration's bigger picture goals. Because of this logical and quantitative approach to study, the positivist hypothesis was inferred

from the data. The researcher gathered information from 24 district hospitals and 1 regional hospital in the Western Region by administering a structured survey. After finishing up the survey's setup, the response rates offered were 100% for the wellness staff and 73% for the patients. Then, the information was compiled with the help of IBM SPSS (adaptation 25) and Smart PLS (form 3). We used both descriptive and inferential measures to meet the challenges posed by the research.

Both the CEO profiles of the urgent care centres and the potential threats posed by the retail networks were identified. However, both the executive operations and the inventory network were shown using the technique and standard deviations. Fundamental equational displaying using half-least-squares was utilised to evaluate the theory behind the test. Since a t-insight greater than 1.96 would indicate statistical significance (p 0.05), this was a primary hypothesis of the investigation. Chapter 7 summarised the most salient findings from the investigation and demonstrated how they squared with the exploration concept.

According to the findings of the study's first correct analysis, the provider board technique significantly improves the efficiency of the emergency clinic inventory network and the happiness of patients at specific clinics in the Western Region. This provides support for the hypothesis that the approach is a key factor in improving clinic performance. Based on the data, it seems that medical facilities with a higher priority on limiting inventory-related risks are more likely to use these measures. Consistently improving patient satisfaction and generating more inventory network exhibits as a consequence.

The second study's major goal was to assess the effect a certain stock management approach had on the efficiency of the clinic store network and the degree of patient satisfaction in the selected clinics in the Western Region. The research concluded that stock management had no

appreciable effects on the efficiency of the medical clinic store network or the degree of patient satisfaction at the emergency clinics that were analysed. This would suggest that there is no correlation between the volume of treatments done at a clinic and improvements in either the efficiency of the resulting production network or the degree of patient satisfaction. This means the system does not contribute significantly to the work being done by medical facilities to enhance the efficiency of their clinic inventory networks and the satisfaction of their patients.

Third, we aimed to examine the effects of the recent mass appropriation by the executives' system on the efficiency of certain urgent care facilities in the clinic production network in the Western Region, as well as on the satisfaction of their patients. Medical clinic store operations and patient satisfaction at emergency clinics under consideration have both benefited greatly from the investigation into the most recent wide executive distribution system. It indicates that an incremental improvement in technology is what drives a dramatic improvement in both retail efficiency and customer satisfaction.

Because of this, the method has a substantial impact on enhancing both patient happiness and the efficiency of hospital supply chains. Most Western Region hospitals rely heavily on the previous distribution management approach for transporting supplies like antibiotics and surgical gloves since that is the only option accessible to them.

To address the fourth goal, studies were done to ascertain whether or not hospitals in Ghana's Western Region effectively managed their supply chains and whether or not this affected the satisfaction of their patients. Patient satisfaction was shown to be significantly affected by the effectiveness of the supply chain. Because of this, hospitals all around the country may get consistent shipments of medical supplies on a regular basis, which has a profoundly favourable influence on the happiness of their patients. This further substantiates the claim that the

investigated hospitals would benefit from improved supply chain performance. This suggests that improved patient satisfaction can be attributed to better overall performance in the hospital supply chain, which in turn can be attributed to better supplier management, better inventory management, and a more reliable and efficient approach to managing the hospital's last mass distribution.

5.2 Conclusions

The purpose of this research was to analyse a sample of selected clinics in Ghana's Western Region, paying close attention to their clinical supplies, administration, and patient care. The following findings are based on the investigation's most salient findings. Based on research into the first aim of the assessment, it was determined that the Western Region's hospital administrations should prioritise the supplier management plan as the most effective means of mitigating supply chain risk. In order to ensure a steady supply of high-quality drugs and PPE in hospitals, it is necessary to establish solid relationships with major suppliers.

When weighed against other considerations, the prior studies' substantial empirical backing for the objective outcomes stands out as paramount. This suggests that using a supplier management plan to ensure a steady supply of PPE, pharmaceuticals, and raw materials can improve hospitals' overall performance. The study shows that in order to minimise supplier delivery delays, upper management needs a deeper familiarity with supplier management strategy.

Additionally, the second study's goal revealed that the inventory management technique had no discernible impact on the efficiency of the hospitals' supply chains or their patients' happiness. The outcome had effects on how hospitals in the Western Region were run. The findings suggest that management should refrain from believing that the inventory management technique is one

of the finest in every institution. This is so that the implementation of an inventory management plan won't be hampered by certain contextual elements, such as the nature of the inventory and corporate culture. So, before putting an inventory management strategy into practice, management could consider a number of factors. In light of this, the study found that hospitals that place a strong focus on inventory management would find it difficult to significantly enhance both patient satisfaction and hospital supply chain performance.

Thirdly, it was shown that the hospital supply chain's effectiveness and patient happiness in the research region were positively and significantly impacted by the final mass distribution management method. Medical centres should think carefully about the ramifications of these findings. Analysis results suggest that management should use the most advanced approach of mass distribution management to guarantee a steady supply of drugs to hospitals. In order to avoid medicine shortages in hospitals, it is critical that the distribution system be strengthened to ensure that pharmaceuticals and other equipment are constantly accessible to the healthcare sector. It is crucial that medical centres have access to PPES and pharmaceuticals for the sake of patient care.

Findings from this study's investigation of the effect of hospital supply chains on patient satisfaction in Ghana's Western Region were favourable and statistically significant. Finding a favourable correlation between them was not unexpected. If hospital administrations are serious about maintaining high supply chain performance, they must ensure that their policies for managing suppliers, stock, and final-mile distribution are all geared towards achieving this goal. An application would look like this. Thus, hospitals should make every effort to enhance supply chain performance, since doing so is certain to boost patient satisfaction. Based on their results, the authors of this study recommend that hospital administration should consider applying the

aforementioned methods in order to improve supply chain performance. In the end, this would mean that hospitals could count on a steady supply of drugs, which would please their patients.

The study's results suggest that, with the exception of inventory management methods, hospitals' supply chain performance and patients' happiness are positively affected by medical supply management strategies. If the hospital's supply chain runs well, Western Region patients are more likely to be pleased with their care. Precisely, methods like the final mass distribution management plan and the supplier management strategy dramatically improved the performance of the healthcare supply chain, which in turn has a beneficial effect on patient satisfaction.

5.3 Recommendations

These recommendations have been given to the hospital administration based on the findings and conclusions of this research. The study's results suggest that hospital administration should consider supplier management strategies more carefully. Hospitals would do well to invest in software that would facilitate communication between all parties involved in the supply chain, so facilitating the sharing of information and the development of lasting relationships. As a consequence, these hospitals and their suppliers will form bonds based on trust, loyalty, and devotion, leading to increased professionalism, efficiency, and success for all parties involved. As a result, the efficiency of the Western Region's supply chain would increase, and patient satisfaction would improve.

In addition, the research suggested that Western hospital administration pay less attention to inventory management strategy since it was shown that this technique had no impact on either the efficiency of the hospital's supply chain or the levels of patient satisfaction. Since this is the case, management should instead of focusing on inventory management, adopt and invest in

alternative tactics. Because maintaining this approach won't do much to enhance the quality, speed, flexibility, or dependability of hospitals' operational systems or the supply chain performance, which are all crucial to patient happiness. This is because maintaining this method would only lead to further increases in operational expenses.

Several Western Region hospitals were identified, and their administrations were urged to implement and fund the most recent mass distribution strategy, as suggested by the study. Indeed, the study did mention this particular suggestion. Last-in, first-out (LIFO) distribution is a mechanism used by hospital management to ensure that supplies reach the right places. This is because dispensing the final rations of food is often regarded as the single most important supporting discipline in a hospital. One way to achieve this goal is to improve the processes involved in the distribution of drugs and protective gear (PPEs). For the best patient care and safety, it is crucial that hospitals have well-oiled logistical machines that can support any and all medical procedures.

The study's takeaway recommendation for hospital management was to prioritise patient satisfaction by ensuring a strong hospital supply chain performance. The first step in achieving this objective is for hospitals to develop strategies for managing their suppliers, followed by plans for controlling their bulk distribution networks. Acquiring efficient vehicles and software with the ability to enhance supply chain efficiency and boost patient happiness should be a top priority for hospitals.

5.4 Suggestions for Further Research

The focus of the investigation was on the implications of clinical inventories and executive processes on the delivery of healthcare at a few selected clinics in Ghana's Western Region. In this way, a more thorough investigation may be expanded to include various regions of Ghana

or other countries, especially those with developing economies. This would aid in extending already-known knowledge and aid inventive conjecture. The research was also limited to only looking at how well emergency clinics' stores ran their networks and how satisfied their patients were. Further research may be done along similar lines to examine the store network relationship between private medication distributors and health care providers.

This will increase understanding about the effective delivery of pharmaceutical goods to various healthcare institutions through medical supply management systems. Once again, more study might focus only on how medical supply management of pharmaceuticals influences the quality of healthcare, which would give researchers and decision-makers a better knowledge of the supply chain for medical supply management of drugs.

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APPENDIX

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT
RESEARCH QUESTIONNAIRE

Dear respondent,

I am a master's degree student in the Logistics and Supply Chain Management department of the above-named University. I am undertaking a research project on the topic: "Supply Chain Risk Management and Performance of Selected Hospitals in the Western Region of Ghana." This project is being done as part of the requirements for a partial fulfillment of my Master's degree. Your response will be kept anonymous and secret, assuring your privacy. I want to express my gratitude for the time and effort you put into completing this survey.

SECTION A: DEMOGRAPHIC INFORMATION OF RESPONDENTS

1. Gender

a. Male [ ] b. Female [ ]

2. Age group

18-34 years [ ] 35-44 years [ ] 45-54 years [ ] Over 55 years [ ]

3. Please specify your highest level of education.

No formal education [ ] Below HND [ ]

HND/Equivalent BIS [ ] First Degree [ ] Post Graduate degree[ ]

4. How long have you been employed at this hospital?

Less than 5 years [ ] 5-10 years [ ]

11-15 years [ ] More than 15 years [ ]

5. Ownership status of the hospital

Private hospital [ ] Public hospital [ ]

SECTION B: SUPPLY CHAIN RISK MANAGEMENT STRATEGIES USED AT THE HOSPITALS

Mark how successful you think these initiatives are at reducing the risks associated with the supply chain in this hospital using the check boxes.

1-Ineffective; 2= slightly effective; 3= moderately effective: 4= Effective 5=highly effective

No	Inventory management	1	2	3	4	5
1	The selection of health commodities at the hospital takes into account both external and internal medications.					
2	When it comes to medical supplies, the hospital determines what the maximum, minimum, and reorder levels are.					
3	The hospital engages in stock taking					
4	The previous consumption is used by the hospital to calculate the required amount of each health item.					
5	The hospital use request from users to determine the quantity of health commodity needed					
6	The hospital plan in advance					

7	The firm uses enterprise resource planning system (Barcode) to track its inventory UME					
8	The objects in the hospital inventory have all been arranged in the order of their significance, according to the classification system.					
9	A traditional economic order quantity approach is used here at the hospital.					
10	The hospital observes periodical replenishment of inventory					
11	The hospital maintains a minimum stock level					
12	The hospital uses JIT stock control system					
13	The hospital uses the JIT system to eliminate waste					
14	The inventory management practices enable the hospital to avoid inventory bottleneck in production					
15	Drugs and personal protective equipment are delivered to the hospital at the predetermined times.					
16	The hospital practices vender managed inventory systems					
17	The hospital has an automated system for tracking inventory.					
18	The hospital exercises selective control over its inventory items					

19	The hospital collaborates with its suppliers in system upgrade					
	Supplier management					
1	The hospital deal with alternative suppliers					
2	The hospital is interested in working together with its suppliers.					
3	The hospital builds strong strategic alliance with suppliers					
4	The hospital has effective relationships with its vendors.					
5	The hospital offers vendors rewards as a source of encouragement.					
6	Regularly, the hospital examines its suppliers for potential supply chain risks.					
7	Complete information exchange exists between the hospital and its vendors.					
8	There are regular inventory-related meetings between the hospital inventory team and its suppliers.					
9	The hospital guarantees early supplier participation for all					
	Last mass distribution management					
1	The transportation management procedures allow for the on-time delivery of goods and services to clients.					
2	The hospital provides prompt medicine and PPE supply.					
3	The hospital has efficient medication distribution and PPE.					
4	The hospital has extensive wait times.					

5	The hospital has short lead time					
6	Through transportation management, items are delivered to the desired location of the client.					
7	The hospital's goods and services are transported using the appropriate method.					
8	The hospital incurs little costs to transfer items to the client.					
9	The hospital utilizes an electronic system to trace all hospital-transported products					
10	The hospital makes enough preparations to prevent medicine and PPE shortages.					
11	The hospital depends on timely deliveries from suppliers					

SECTION C: PERFORMANCE OF HOSPITAL SUPPLY CHAIN

In what manner has this hospital's healthcare supply chain performance been enhanced by the deployment of supply chain risk management strategies?

1=No improvement; 2=slightly improvement; 3=Moderate improvement; 4=high improvement; 5=Very high improvement

No	Hospital supply chain effectiveness	1	2	3	4	5
1	Patient complaints rate					
2	Rapidity of service delivery					

3	Hospital responds to patients' demands					
4	Rapid enrollment and admissions procedure					
5	Cost of inventory management					
6	sensitivity to client demand					
7	Transportation expenses					
8	Rate of hospital-supplier relationships					
9	Timing of supply chain reaction					
10	Cost of warehousing and storing					
11	Last mass distribution rate					

SECTION D: PATIENTS SATISFACTION

How much has this hospital's deployment of a healthcare supply chain improved patient satisfaction?

1=No improvement: 2=slightly improvement; 3=Moderate improvement; 4=high improvement; 5=Very high improvement

No	Patient Contentment	1	2	3	4	5
1	The hospital is equipped with devices, technology and medical equipment					
2	Internal structure facilitates prompt patient response.					
3	The hospital provides patients with access to effective medications.					

4	The hospital has all necessary medicals available					
5	The courtesy and competence of healthcare personnel					
6	The hospital offers accessible medications and medical supplies for patients.					
7	Providing clear complete, and accurate information					
8	Remarks and objections regarding medications					
9	Conduct and demeanor of healthcare personnel					
10	Timing of responses					
11	Fairness of medicine price by hospital personnel					

Thank You