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ISOMORPHIC FACTORS, ECO-PROCUREMENT PRACTICES, AND DOWNSTREAM HEALTHCARE SUPPLY CHAIN PERFORMANCE: THE ROLE OF FLEXIBILITY ORIENTATION CULTURE

PHIDELIS MAWUNYO KOMLA EBLEDZI

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ISOMORPHIC FACTORS, ECO-PROCUREMENT PRACTICES, AND DOWNSTREAM HEALTHCARE SUPPLY CHAIN PERFORMANCE: THE ROLE OF FLEXIBILITY ORIENTATION CULTURE

BY

PHIDELIS MAWUNYO KOMLA EBLEDZI

Thesis submitted to the Department of Marketing and Supply Chain Management of the School of Business, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfillment of the requirements for the award of Master of Commerce degree in Procurement and Supply Chain Management

JANUARY, 2024

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DECLARATION

Candidates Declaration

I hereby declare that the results of this thesis are my own original research and that no part of it has been submitted for another degree in this university or elsewhere.

Candidate's Signature……Date……..…….

Name: Phidelis Mawunyo Komla Ebledzi

Supervisors' Declaration

We hereby certify that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature…….…… Date……..

Name: Prof. Anokye Mohammed Adam

Co- supervisor' Signature…… Date……..

Name: Dr. (Mrs.) Evelyn Yeboah Nyamah

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ABSTRACT

The study examined the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance: the flexibility orientation culture. The study relied on institutional isomorphism and resource dependency theories to evaluate the relationships. An explanatory research design and a quantitative research approach were used for data collection and analysis. A simple random sampling technique was used to select one respondent each from 231 private-for-profit healthcare facilities in the Greater Accra Region. A self-reported questionnaire was the main instrument used to gather primary data for the study. The IBM Statistical Package for Social Sciences [version 26] was used to perform the descriptive statistical analysis while a partial least squares structural equation modelling [version 4.0] was employed to test the measurement and structural models respectively. The results showed that isomorphic factors (particularly, coercive and mimetic) and eco-procurement practices (specifically, eco-purchasing and eco-reverse logistics), each have a positive and significant effect on the DHSCP of private-for-profit healthcare facilities. The result showed that flexibility orientation culture has a positive but not statistically significant moderating effect on the link between isomorphic factors and DHSCP. However, flexibility orientation culture has a positive and statistically significant moderating effect on the link between eco-procurement practices and DHSCP. The study, therefore recommended that healthcare practitioners and policymakers should navigate the regulatory requirements and complexities to create an organisational culture that adapts to evolving industry dynamics including continuous improvement to enhance the overall healthcare supply chain performance.

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KEY WORDS

Downstream healthcare supply chain performance

Eco-procurement practices

Firm size

Flexibility orientation culture

Isomorphic factors

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DEDICATION

To my family.

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LIST OF ACRONYMS

CVF	Competing Values Framework
DHSCP	Downstream Healthcare Supply Chain Performance
EPA	Environmental Protection Agency
GAR	Greater Accra Region
GLSS	Ghana Living Standards Survey
GMA	Ghana Medical Association
HeFRA	Health Facilities Regulatory Agency
LMICs	Low-and-middle-income countries
OECD	Organisation for Economic Co-operation and Development
PHFAG	Private Health Facilities Association of Ghana
PLS-SEM	Partial Least Squares Structural Equation Modelling
RDT	Resource Dependency Theory
UN SDGs	United Nations Sustainable Development Goals

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CHAPTER ONE

INTRODUCTION

Healthcare delivery by healthcare facilities produces substantial harmful toxins that have both environmental and public health effects due to the consumption of medical products and natural resources (Ryan-Fogarty et al., 2016; Sherman et al., 2020). Consequently, healthcare facilities have come under ever-increasing pressure from governments, consumers, and other stakeholders to implement green service production and delivery in their supply chains to lessen the adverse effects on the environment and human health. As a result, the procurement function has evolved over the years as a fundamental business strategy for promoting sustainability practices and ideals across organisations and supply chains.

Greening healthcare, especially in the private sector, heavily depends on the self-policing premise of a presumed knowledge base among healthcare practitioners, which might not exist (McDiarmid, 2006, as cited in Ryan-Fogarty et al., 2016). This study, therefore, seeks to examine the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance of private-for-profit healthcare facilities in the Greater Accra Region with flexibility orientation culture playing the moderating role. Chapter one presents the contextual background and justification for this study. It describes the problem statement, the purpose of the study, including research objectives, hypotheses, significance of the study, and then gives an outline of each chapter.

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Background of the Study

The global community has reached a stage where ecological concerns and public health issues have converged, with the combined being more harmful than the sum of the parts (Karliner & Guenther, 2011). Regarding the African setting, however, poverty and other issues, such as a lack of understanding and fragmented legal frameworks, pose significant obstacles to sustainable development (Economic Commission for Africa, 2012, as cited in Mwacharo, 2015). Karliner and Guenther again observed that the deterioration of global health is compounded by ecological issues, including climate change and the unsustainable use of resources. Ironically, the modern healthcare supply chain, which is supposed to do no harm to the general public, is the primary source of environmental pollutants that harm people's health and negatively impact the natural environment (Sherman et al., 2020).

These environmental pollutants (e. g., mercury and dioxin) in the healthcare supply chain originate from the manufacturing process of upstream suppliers as well as utilisation and disposal of medical and pharmaceutical products from downstream of the healthcare supply chain (Malik et al., 2018; Sherman et al., 2020). It is instructive to state that hospitals' use of medical and pharmaceutical products to deliver healthcare has a direct and/or indirect impact on the environment. For instance, the Environmental Protection Agency [EPA] (2015) in Ghana observes that toxic emissions (dioxins, furans, and heavy metals) from the downstream healthcare supply chain into the environment have very significant adverse environmental and health effects.

Given the significant contribution of the healthcare sector to environmental emissions, the downstream echelon of the healthcare supply

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chain has been under mounting pressure from several sources to include ecological sustainability in its operations to enable long-term performance (Eltayeb et al., 2010; Kumar, 2020). These external pressures arising from the institutional environment come in the form of government regulatory requirements, competitive, and market pressures to influence the internal procurement practices of healthcare facilities (Kumari & Patil, 2019). These isomorphic factors (coercive, mimetic, and normative) have been recognisedas factors that influence the performance of the downstream healthcare supply (Venkatraman et al., 2022). Thus, the procurement function has evolved over the years as a fundamental business strategy for promoting sustainability practices and ideals across organisations and supply chains (Walker & Brammer 2012; Yawar & Seuring 2017).

Many hospitals allocate 20-30 percent of their operating budgets to purchasing medical and pharmaceutical products, making them the second most expensive healthcare expense behind human resources (Chen et al., 2013). Considering the quantum of money spent on medical and pharmaceutical products, healthcare facilities can use innovative procurement strategies to enable substantial sustainability gains and outcomes (Brammer & Walker, 2011). Eco-procurement is a form of sustainability (Roman, 2017) that only focuses on the environmental aspect (Asare, 2017). Khodaparasti et al. (2020) contend that the concentration of traditional procurement is on quality, cost, and delivery, whereas eco-procurement goes beyond the conventional objectives to integrate environmental sustainability.

The procurement process in the healthcare supply chain bridges the gaps between the downstream and the upstream echelons. This provides an

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opportunity to initiate dialogue about the environmental features of products and services among key supply chain actors (Carter & Jennings, 2004; Eltaye et al., 2011; Zhu et al., 2013). Panigrahi et al. (2019) indicate that eco-procurement practices enable the downstream healthcare supply chain to perform so that the ecology will remain undamaged and undisturbed. This ensures that the required environmental standards support the procurement of the facilities' products and services. Theoretically, institutional isomorphism theory contends that downstream healthcare supply chain performance is the outcome of adaptation of their existing policies and processes to conform with institutional change to secure legitimacy (DiMaggio & Powell, 1983).

Furthermore, resource dependency theory indicates that how healthcare facilities deploy strategies to acquire more resources in the event of environmental uncertainty for long-term survival could affect their performance (Pfeffer & Salancik, 1978). Similarly, Ansmann et al. (2021) maintain that there is pressure on healthcare systems to enhance their performance in spite of the significant resource constraints they are confronted with. Notwithstanding, most of the previous studies relating to the adoption of green procurement practices in Ghana viewed it from the perspective of either institutional pressures or stakeholder theories and focused more on the public sector (Adjei-Bamfo et al., 2019; Awuni et al., 2016; Ayarkwa et al., 2020) and the manufacturing sector (Acquah et al., 2021; Etse et al., 2022; Owusu-Bio et al., 2016) with just limited studies (Guo et al., 2020) on green procurement practices in the healthcare supply chain, particularly, the downstream portion.

The downstream segment manages the functional component of the healthcare supply chain. It is the actual delivery of care and entails interactions

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between hospitals, patients, and physicians. It is therefore subjected to enormous regulatory pressures due to its unique characteristics, which either facilitate and/or impede effective supply chain coordination (Cao et al., 2015). The performance of the downstream healthcare supply chain posed a peculiar challenge to achieving sustainable development because of its uniqueness from the manufacturing supply chain and, to some extent, other service supply chains (Dobrzykowski, 2019). However, Chen et al. (2013) postulate that enhancing a hospital's supply chain performance has become more crucial as healthcare facilities seek to increase operational efficiency and minimise costs.

Flexibility orientation culture is one of the essential resources that can contribute to the competitive advantage of healthcare facilities because of its ability to affect policies, managers' discretion, values, and operating procedures in general (Liu et al., 2010). Health care organisations with cultures characterised by collaboration, flexibility, and risk-taking are most successful implementing quality improvement initiatives, whereas, bureaucratic and hierarchical cultures may inhibit improvement efforts (Braithwaite et al., 2005, as cited in Andres et al., 2019) Much attention has not been given to flexibility orientation culture's role in embedding environmental sustainability in healthcare delivery operations. Even though healthcare facilities are similar, their sizes differ, hence hospital size is controlled in the study as it might explain why variation in operational performance measures (Aiken et al., 2014). Isomorphic factors, eco-procurement practices, downstream healthcare supply chain performance, and the influence of flexibility orientation culture on the relationships are uncharted research areas in the health sector in Ghana.

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Statement of the Problem

Healthcare facilities must focus on supply management to increase operational efficiency to perform better with the limited resources available (Alshahrani et al., 2018). The downstream healthcare supply chain is a critical element in the healthcare sector and has significant ecological footprints resulting from its direct operations and indirect emissions of related medical and pharmaceutical products and infrastructure. On the other hand, the healthcare systems are exposed to the adverse effects of climate change, inadequate access to resources, and other external pressures (Cimprich et al., 2019). According to the UN Sustainable Development Goal three, target eight, healthcare delivery in low-and-middle-income countries [LMICs] like Ghana is carbon-intensive (UN SDGs, 2016). The situation is expected to intensify as the commitment to universal healthcare coverage is fulfilled.

Asante et al. (2014) maintain that hospitals in Greater Accra Region [GAR] produce bioaccumulative toxic substances like dioxins, furans, and heavy metals into the environment, thus having considerable health and environmental effects in the long term. The above issues are compounded by using more advanced energy and resource-intensive medical procedures, devices, and technologies at hospitals for healthcare delivery (Cimprich et al., 2019). Furthermore, the overreliance on traditional procurement practices in which the criteria for selecting these advanced medical devices and pharmaceutical products at healthcare facilities dwell more on issues such as procurement costs, efficacy and safety, ease of use, and handling (Sherman et al., 2018) than the deleterious impact of healthcare delivery on the physical environment.

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The laws and legislative instruments that guide and thus ought to ensure that healthcare facilities have in place procurement practices that do not breach the environment unduly in Ghana are Public Procurement Act (only apply to the public sector) 2003 (Act 663) as amended Act 914 of 2016, Public Health Act 851 of 2012, and the Environmental Assessment Regulations, LI 1652, enacted in 1999. However, legislation governing eco-procurement practices might not achieve the desired results in countries characterised by weak institutional frameworks and/or regulatory systems since institutional voids provide a substantial obstacle to regulatory effectiveness (Amoah, 2018).

Consequently, the mounting pressures exerted by the institutional environment influence structures, professionalism, and behaviours of the downstream healthcare supply chain concerning the procurement of medical and pharmaceutical products (Berrone et al., 2013). To a large extent, cultural settings could account for the inconsistencies in operational decisions regarding adopting eco-procurement practices. Kaufmann and Carter (2006) opine that norms and cultural values must be counted in the sourcing process rather than using a "one-size-fits-all" approach to managing the global supply chain. Nevertheless, very little is known about the dimension and structure of the private healthcare sector and its significant contributions to the performance of the health sector in the country (World Bank, 2011).

Moreover, there has been inadequate research into environmental sustainability involving the private healthcare sector in Ghana despite the enormous amount of money and other resources invested in it. Besides, there is a dearth of thorough research examining the effect of isomorphic factors and the moderating role of flexibility orientation culture despite the increased

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emphasis on eco-procurement practices and downstream supply chain performance in the healthcare sector. This study seeks to fill this research gap by examining the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance.

Purpose of the Study

The study's purpose is to examine the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance [DHSCP] of private-for-profit healthcare facilities in the Greater Accra Region [GAR] with flexibility orientation culture playing the moderating role.

Research Objectives

This study specifically sought to:

1. Ascertain the influence of isomorphic factors on downstream healthcare supply chain performance [DHSCP].
2. Examine the effect of eco-procurement practices on downstream healthcare supply chain performance [DHSCP].
3. Assess the moderating effects of flexibility orientation culture on the relationship between isomorphic factors and DHSCP.
4. Assess the moderating effects of flexibility orientation culture on the relationship between eco-procurement practices and DHSCP.

Research Hypotheses

The following propositions underpin this study:

H1: There is a significant positive influence of isomorphic factors on the downstream healthcare supply chain performance.

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H1a: There is a significant positive influence of coercive factors on the downstream healthcare supply chain performance.

H1b: There is a significant positive influence of mimetic factors on the downstream healthcare supply chain performance.

H1c: There is a significant positive influence of normative factors on the downstream healthcare supply chain performance.

H2: There is a significant positive effect of eco-procurement practices on the downstream healthcare supply chain performance.

H2a: There is a significant positive effect of eco-purchasing on the downstream healthcare supply chain performance.

H2b: There is a significant positive effect of eco-sourcing on the downstream healthcare supply chain performance.

H2c: There is a significant positive effect of reverse logistics on the downstream healthcare supply chain performance.

H3: Flexibility orientation culture positively moderates the relationship between isomorphic factors and the downstream healthcare supply chain performance when the moderating effect is high and stronger.

H4**:** Flexibility orientation culture positively moderates the relationship between eco-procurement practices and the downstream healthcare supply chain performance when the moderating effect is high and stronger.

Significance of the Study

This study makes significant contributions in three main areas: practice, theory, and policy. Practically, this study provides more insights to healthcare administrators, procurement managers, and physicians to appreciate the negative externalities of medical and pharmaceutical products on human and

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environmental health. This offers management of private-for-profit healthcare facilities insights into the significance of developing an environmentally friendly and sustainable culture within healthcare organisations, particularly eco-sourcing, and selection of products and services to lessen the harmful effects on the environment and human health. Additionally, both public and private for-profit healthcare facilities can tap into the findings to further enhance the performance of their supply chains.

Furthermore, the outcomes of this study might help demystify the notion among the private health sector that environmentally benign products are expensive, and this could urge them to incorporate green product specifications into their procurement processes. Theoretically, this study provides different perspectives of institutional and resource dependency theories to enhance environmental sustainability research further. Applying these theories to the study fills the extant empirical and theoretical gaps in eco-procurement literature in the downstream healthcare supply chain. Also, the outcomes of this study deepen knowledge of how isomorphic forces influence an organisation to rely on external resources to improve its supply chain performance, taking into account the organisational culture.

Besides, the study's findings serve as the baseline for academicians and other researchers pursuing further research in advancing sustainable procurement or similar fields to match theoretical reasoning and general opinion to determine whether empirical data support them. Conclusively, the outcomes from the study offer valuable guidelines to policymakers, healthcare managers, procurement professionals, and other stakeholders, including donor agencies, to

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formulate cross-sectoral policies that can facilitate the effective diffusion of eco-procurement practices in both the public and private sectors.

Delimitations

This study is delineated by the sample frame, spatial coverage, and the subject matter under investigation. The sample frame is thus based on the lists of registered and licensed private-for-profit health facilities from the Healthcare Facilities Regulatory Agency [HeFRA]. Even though the sample frame makes it easier to access samples and allows for a more accurate sampling process, health facilities not registered and licensed with HeFRA are not included in this study's scope. In terms of spatial coverage, the study draws data from only private-for-profit healthcare facilities situated in the Greater Accra Region (GAR) and meets the operating criteria stipulated by the regulator, HeFRA. Broadly, the content of the subject matter under investigation is restricted to the influence of isomorphic factors and eco-procurement practices on the downstream healthcare supply chain performance by examining the moderating effect of organisational culture.

Limitations

This study is limited to the private health sector, notably registered and licensed private-for-profit healthcare facilities, using a structured questionnaire for data collection. This makes it extremely difficult for respondents to express their personal opinions on the rationale for practicing eco-procurement practices. The researcher believes future studies could employ a mixed research approach to explore the downstream and upstream healthcare supply chain phenomena. Also, the study is limited to the influence of isomorphic factors and eco-procurement practices in acquiring medical and pharmaceutical products,

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including services by private-for-profit healthcare facilities in their supply chains. Therefore, the upstream where these products are produced is not considered. Finally, the cross-sectional nature of collecting data at a particular time from participants at each facility investigated could create possible biases in the outcomes. The study's methodological choices address any potential influence of these limitations on the study's results.

Definition of Terms

The under-listed terms mean what is described below unless otherwise stated.

Isomorphic factors: Driving forces from the external environment that optimise managerial decisions and behaviours within the confines of an existing institutional field to behave similarly.

Eco-procurement practices: Policies and green initiatives integrated into the procurement process of goods, products, and services to enable better environmental performance throughout their life cycle in the supply chain than products or services that serve similar functionality.

Downstream healthcare supply chain: Functional component that manages the delivery of care in the healthcare supply chain and involves the cooperation of health service providers such as hospitals, nurses, and physicians, among others, to achieve patient-centred care. This concept is limited to only private-for-profit clinics and hospitals in this study.

Downstream healthcare supply chain performance: Effective and efficient resource deployment in clinical care and supporting processes to make hospitals' supply chains respond quickly to the needs of their patients.

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Flexibility orientation culture: Flexibility orientation culture relates to structures that enable openness to new ideas, approaches, willingness to change, and support innovation.

Private-for-profit healthcare facilities: Hospitals and clinics owned by healthcare entrepreneurs within the downstream segment of the healthcare supply chain that is directly involved in care delivery.

Organisation of the Study

This study is structured into five chapters, including the preceding introductory part of the study. Chapter one discusses the contextual background, problem statement, objectives, hypotheses, significance, delimitation, and the study's organisation. Chapter two reviews and discusses relevant literature on the theoretical, conceptual framework, and empirical studies. The research methods that underpin the study are discussed in chapter three. It describes the research design, study area, population, sampling procedures, data collection, and analysis. Chapter four chronicles the field survey results and discussion, while chapter five summarises the findings, draws conclusions, and makes recommendations for the study.

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CHAPTER TWO

LITERATURE REVIEW

The study's purpose is to examine the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance [DHSCP] of private-for-profit healthcare facilities in the Greater Accra Region [GAR] with flexibility orientation culture playing the moderating role. This chapter thoroughly discusses relevant theories and provides conceptual and empirical reviews according to the study's objectives.

Theoretical Review

The theoretical scaffold that underpins this study in order to examine why private-for-profit healthcare facilities in the downstream healthcare supply chain act the way they do is institutional theory and resource dependency theory [RDT]. Applying these theories provide justifiable ground for exploring endogenous and exogenous forces that influence supply chain decision-making, especially healthcare delivery (Saldanha et al., 2015; Uygun, 2017) while providing additional insights on the sources of constraints in the downstream healthcare supply chain.

Institutional Isomorphism Theory

Institutional isomorphism theory has its roots in Weber's (1946) assertion that organisations are characterised by sets of logically organised rules and behaviours. However, three prominent scholars, thus DiMaggio and Powell (1983), Meyer and Rowan (1977), and Scott (1995) are considered the modern proponents of institutional isomorphism theory, which is sometimes called a neo-institutional theory. The proponents posit that the institutional setting establishes social expected standards, including rules that determine proper

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organisational structures, behaviours, operations, and practices for organisations to conform to in order to gain legitimacy in the industry as well as access to valuable but scarce resources (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Scott, 1995).

In the view of Deephouse (1996), institutional isomorphism theory focuses on what makes organisations adopt similar procedures, tactics, and structures. David et al. (2019) also note that the basic tenet of institutional theory is that social norms and commonly held expectations substantially influence organisational structures, decisions, activities, and results. DiMaggio and Powell's (1983) institutional isomorphism - coercive, mimetic, and normative as well as Scott's (1995, 2008) three pillars of institutions, namely the regulative, the normative, and the cultural-cognitive, are the central institutional pressures that compelled firms to implement practices that are ecologically responsive in their supply chains (Johnsen et al., 2017).

Deephouse (1999) maintained that the theory acknowledges the influences of conformism on competitiveness and performance, hence plays a significant role in appreciating for-profit businesses. The theory is significant to the study because it is crucial in explaining the pressures that lead to changes in the private sector (Moore & Grandy, 2017). Besides, it provides the basis for assessing downstream healthcare supply chains in the Ghanaian context due to institutional requirements in the form of regulatory structures and professionalism affect managerial decisions and policies of healthcare facilities (DiMaggio & Powell, 1983). Notwithstanding, most of the main healthcare facilities in the downstream healthcare supply chain exhibit a high level of convergence behaviour as such, adopt standard operations practices and

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procedures to demonstrate responsibility and avoid being accused of negligence (Meyer & Rowan, 1977).

Consequently, adopting green practices, including eco-procurement in the hospital's supply chain is aimed at responding to external pressures to achieve ecological legitimacy and meet institutional requirements (Berrone et al., 2013). Although institutional theory offers a valuable theoretical foundation to appreciate how institutions influence organisations' ecological strategies, it cannot explain how to gain a competitive advantage in a challenging institutional environment (Huang et al., 2016).

Resource Dependency Theory

Pfeffer and Salancik (1978) propounded resource dependency theory [RDT] to study how external factors influence organisations' behaviour regarding access to valuable resources and strategies. The core idea of the theory is that no organisation is self-reliant due to its inability to control its operations. Thus, the actors develop relationships with other organisations to access essential but scarce resources (Touboulic, 2014). This dependency of one organisation on another organisation for critical resources with no substitute results in a power imbalance as the resource-controlling organisation has more power while reducing the autonomy of the dependent organisation by exposing it to uncertainties (Pfeffer & Salancik, 1978). From the perspective of resource dependency theory, organisational effectiveness is to make the most use of the organisation's power (Pfeffer, 1981).

Pettigrew (1992) argues that the perceived pressure on healthcare facilities to change and align their strategies to the environment could be attributed to organisational interdependencies and environmental uncertainties.

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Thus, environmental unpredictability affects organisational strategies influencing an organisation's performance. Within an economic context, decision-makers in an organisation employ different strategies to acquire resources. Therefore, healthcare businesses need to partner strategically with customers and suppliers to survive and achieve long-term advantages. This lessens uncertainty brought about by a volatile environment where resources are inadequate due to complexities associated with interconnectedness between organisations (Pfeffer & Salancik, 1978).

The RDT is suited to this study because private-for-profit healthcare facilities operate in a resource-constrained setting where there is a need to find a dynamic fit between their hospital and the environment (Moore, 2000). Besides, the theory makes it possible to explain and understand the dynamics of environmental sustainability since it provides the rationale and how organisations should implement eco-procurement practices to achieve the desired performance targets. Saeed et al. (2018) assert in an empirical study that there is a positive association between resource dependency and supply chain performance. Earlier studies assert that the supply chain is characterised by symbiotic relationships and uneven resource allocation leading to various degrees of power distribution and reliance among supply chain participants (Zhang & Huo, 2013).

Craighead et al. (2020) shared a similar view and further stated that the theory serves as a powerful theoretical perspective for examining how key industry players might rely on essential raw materials from one of its suppliers in the healthcare supply chain to deal with the rapid changes that might occur

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in power dynamics and interdependencies of the downstream healthcare supply chain.

Summary of Theoretical Analysis

The healthcare sector in Ghana is often transforming as a result of regular environmental changes and institutional pressures. These constant pressures that healthcare facilities must conform to certain expectations also determine the resources that are employed to improve downstream healthcare supply chain performance. As a result, conformance together with support and resources from key supply chain partners such as suppliers of medical and pharmaceutical products and services, competitors, and other players in the healthcare ecosystem give legitimacy and stability, which is essential for survival (DiMaggio & Powell, 2000). Additionally, at the downstream segment of the healthcare supply chain, legal frameworks, priorities, societal resources, and the effects of the healthcare field have influenced how private-for-profit healthcare facilities can develop, diffuse, and utilise eco-procurement practices to improve their performance. It is evident from the preceding viewpoints that organisational strategies are influenced by environmental uncertainty, which eventually affects organisational performance (Ansmann et al., 2021).

These discussions about the contending ideas of external control and strategic choice as developed by Meyer and Rowan (1977), and Pfeffer and Salancik (1978) respectively demonstrate the applicability of institutional isomorphism and resource dependency theories which provide a range of possible organisational reactions to pressures from the environment. From the perspective of the institutional isomorphism theorists the actions of private-for-profit healthcare facilities in the downstream healthcare supply chain are

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influenced by institutional forces and the context provided by the network of players in the healthcare sector (Burton-Jones et al., 2020; DiMaggio & Powell, 1983). On the other hand, proponents of resource dependency theory view actions of private-for-profit healthcare facilities as logical and deliberate attempts to minimise reliance on other organisations in the institutional setting which control essential resources they require for their operations (Pfeffer & Salancik 1978). Given this, institutional isomorphism theorists suggest conformism and passivity to the private-for-profit healthcare facilities in dealing with stakeholders whereas resource dependency theorists emphasise interdependencies and coping with political manipulation.

The combination of these two theories to study downstream healthcare supply chain performance implies that private-for-profit healthcare facilities can develop various strategies to respond to pressures in the environment (Covaleski & Dirsmith 1988; Oliver 1991). Therefore, Oliver observes that these viewpoints complement each other in exploring downstream healthcare supply chain performance since both contend that external stakeholders place constraints on private-for-profit healthcare facilities, which they must comply with to survive.

Conceptual Review

This section gives a succinct synthesis of pertinent literature, including issues that have emerged from prior research on the areas of study to provide a framework for conceptualising the constructs.

Isomorphic Factors

Isomorphism explains a process in which two or more entities develop similar structures and forms. The concept of institutional isomorphism can be

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viewed from organisational studies as organisations within a shared field, for example, the health sector transformed due to its structure and societal influences (DiMaggio & Powell, 1983). The latter maintained that firms and networks achieve homogeneity within a shared field as it matures due to the growing pressure of external factors arising from key supply chain partners such as government regulatory bodies, competitors, customers, professional bodies, and sometimes organisations that are located within the geographical proximity to gain legitimacy. This homogeneity enables organisations to negotiate with other organisations to employ staff and be regarded as legitimate to secure public and private grants (DiMaggio & Powell, 1983).

DiMaggio and Powell (1983) categorised these external pressures from the institutional environment into three main isomorphic factors, thus, coercive, mimetic, and normative. These factors underscore the rationale behind organisations' conformance to institutional prescriptions that brings about isomorphism. Isomorphic factors can lead to a deeper appreciation of supply chain linkages and operations management (Koulikoff-Souviron & Harrison, 2008). Essentially, isomorphic factors may be related and can interact instead of being regarded as idiosyncratic (DiMaggio & Powell, 1983). However, many researchers contend that the way an organisation perceives these factors influence its appreciation of the environment to a large extent and readiness to implement new strategies such as eco-procurement practices (DiMaggio & Powell, 1983).

Saldanha et al. (2015) postulate that coercive factors entail formal and informal demands in the form of constraints imposed by a dominant organisation on focal firms that depend on it for certain resources. This

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dependence may result from a direct relationship or more covert forces.

Coercive factors

These factors are embedded in government regulatory requirements, cultural and informal structures, and supply chain nodes external to the focal firm (DiMaggio & Powell, 1983). Examples of these limiting factors on healthcare facilities in the downstream healthcare supply chain include explicit government legislation responsible for licensing public and private healthcare institutions and facilities, expert physicians' preferences for purchasing specific types of medical devices, and the prevailing hierarchical structure in private-for-profit healthcare facilities that gives these expert physicians a certain 'air of authority' (Bhakoo & Choi, 2013).

Mimetic factors

They are pressures emanating from a collection of environmental conditions changes that result in a standardised response. This ambiguity and uncertainty in the environment become a powerful driver for organisations to emulate the structure and/or processes of the leading firm (Sevòn, 1996) either within or outside the field. In the view of DiMaggio and Powell (1983), organisations imitate the behaviour of seemingly successful or more legitimate organisations in the organisational field to the extent that their practices become diffused widely. Therefore, health facilities learn about these industry exemplars from other healthcare facilities, consultants, and/or former employees.

Mimetic behaviour causes hospitals to model competitors before integrating environmental sustainability practices into their supply chains. Kaissi and Begun (2008) note that healthcare organisations sometimes imitate

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competitors in defensive manoeuvres to eliminate the copied practice from the competition. For instance, the copycat behaviours of emulating other healthcare facilities are perhaps done without proper assessment of the benefits or appropriateness of the practice. Nonetheless, D'Andreamatteo et al. (2018) postulate that the emergency of mimicry in the healthcare sector is evidenced by the waves of acquisitions and mergers that have vertically integrated local healthcare systems. Thus, mimicry drastically reduces risks and costs in volatile environments because little or no effort is made to conduct research and experiments.

Normative factors

They are pressures stemming from professional standards and professionalisation in an industry. These pressures can form compliance with inter-organisational networks norms and requirements (DiMaggio & Powell, 1983; Scott, 2008). Firms gain procedural legitimacy in their operations by adhering to these industry standards, even though they are not mandatory. For instance, voluntary certifications such as ISO 14000 are not compulsory for procurement but have become an established industry norm and served as a catalyst for recognition from stakeholders and for winning awards (Corbett et al., 2018). Accreditation bodies, professional and trade networks, and formal education such as universities are some sources of these pressures.

These institutions often establish the 'unwritten' norms that guide the educational plans and behaviour of prospective employees in the labour market (Bhakoo & Choi, 2013; Powell & DiMaggio, Saldanha et al., 2015). DiMaggio and Powell (1983) observe that the management of every industry is highly professionalised; hence training programmes are used by the respective

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professional bodies to transfer knowledge and standard procedures required for managerial behaviour that has gained acceptance and legitimacy in the industry. Professional and trade networks may sanction organisations or members who violate these widely accepted standards.

Eco-procurement Practices

Procurement generally serves as a gatekeeper and performs a boundary-spanning function in every organisation, irrespective of the sector. Meehan and Bryde (2011) indicate that the policies and practices that govern procurement must go beyond the frontiers of the firms to include the entire supply chain to be sustainable. Therefore, procurement plays an essential role in determining product quality, product or service cost, delivery time, and overall supply decisions, such as selecting suppliers and supplier relationship management. However, prefixing procurement with 'eco' signifies integrating environmental issues into the procurement process to reduce adverse ecological effects associated with the product design, process, or service throughout their life cycle (Lifset & Graedel, 2002).

Chan et al. (2012) concur with the latter source and further stated that eco-procurement involves obtaining goods, products, and services that have better ecological performance throughout their life cycle than products or services that serve similar functional purposes. Eco-procurement involves an organisation selecting and purchasing raw materials, inputs, or eco-friendly services from suppliers (Susanty et al., 2017). In this study, eco-procurement practices concentrate on ecologically conscious initiatives that are developed into the downstream healthcare supply chain to enhance its performance. Eco-sourcing, eco-purchasing, and reverse logistics are the eco-procurement

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practices considered in this study because they transcend the downstream supply chain to involve relationships with upstream partners to minimise or eliminate any harmful effect of the product on the environment.

Several studies showed that green supply chain management might be attained through various eco-procurement practices (Azevedo et al., 2011). Eco-procurement practices as a capability must be incorporated into the whole supply chain to realise a green supply chain and achieve a competitive advantage (Song et al., 2017).

Eco-sourcing or green sourcing

This involves the process of identifying and evaluating potential eco-friendly sources in the supply chain in an attempt to lessen or eliminate the sources of pollution and encourage sustainability of procured products and services without adversely influencing the performance of specification of items (Min & Galle, 2001). This process covers the entire supply chain and requires suppliers, subcontractors, and service providers to be ecologically conscious in their operations. Environmental criteria are essential in the procurement process at the downstream portion of the supply chain, for example, the definition of requirements and selection of suppliers. Krause et al. (2009) assert that the ability of a firm to sustain environmental sustainability largely depends on the suppliers it sources the goods and services.

Practically, eco-sourcing indirectly compels suppliers and manufacturers upstream to comply with the International Standard Organisation's [ISO] 14001 standards (Chardine-Baumann, 2011). Eco-sourcing constitutes part of the broader strategy firms employ to green their supply chains (Zhu & Sarkis, 2017) not only to improve their corporate image

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as being ecologically conscious but also to enhance profitability since procurement is the primary supply chain function (Dobrzykowski & Hong, 2012).

Eco-purchasing or green purchasing

It relates to a procurement practice used to obtain products and services with desirable environmental attributes such as recyclability, reusability, and nontoxic materials (Min & Galle, 2001). Firms that adopt eco-purchasing buy from vendors who offer eco-friendly products and services (ElTayeb et al., 2010). Hsu et al. (2013) shared a similar view when they indicated that eco-purchasing is in response to sustainability issues, for instance, reducing waste and using environmentally friendly materials through effective sourcing to minimise harmful materials throughout the supply chain. They emphasised that eco-purchasing establishes external linkages with vendors, making them implement good environmental management practices, especially in product and process design (Song et al., 2017).

Reverse logistics [RL]

This is a business strategy that serves as a catalyst for effectively implementing recovery actions to improve environmental sustainability (Ayvaz et al., 2015) along the supply chain. For instance, the recovery strategy options employed by various firms include repairing, recycling, cannibalising, refurbishing, and remanufacturing. It is evident from previous studies that a recovery strategy is remarkably appropriate for a variety of products, including medical equipment, electronic devices, single-use cameras, cell phones, electrical appliances, computers, copiers, plastics, carpets, automobile engines, batteries, and tires among others (Sasikumar et al., 2010). Govinda (2017)

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explains that reverse logistics is the reverse supply chain and caters for end-of-life [EOL] products in the most ecologically responsible manner.

This effort guarantees that materials are recycled and reused. For the product to be tracked back to the source of the problem and for green decisions to be taken at the supply chain's trouble spots, reverse logistics must be well-implemented to facilitate a high degree of cooperation among major actors in the supply chain (Govinda, 2017). Reverse logistics operations largely play an essential role in dealing with durable medical devices at the end of their life cycle. Therefore, the reverse supply chain's cost should be minimised to maximise the overall environmental benefit from the recovery.

Downstream Healthcare Supply Chain Performance [DHSCP]

The typography influencing the downstream healthcare supply chain in Ghana is very complex due to institutional pressures from Healthcare Facilities Regulatory Agency [HeFRA], Ghana Medical Association [GMA], Environment Protection Agency (EPA], and other stakeholders. Therefore, the multifaceted relationships among the healthcare organisations within the sector influence the behaviour of private-for-profit hospitals (Uygun, 2017). The downstream echelon of the healthcare supply chain involves hospitals, including other healthcare facilities, and their staff, such as physicians, nurses, pharmacists, laboratory technicians, and patients directly involved in healthcare delivery (Sinha & Kohnke, 2009).

From a conventional supply chain perspective, private-for-profit healthcare facilities are conceptualised as the focal firms in this study since several people are recruited or associated with the facilities' healthcare delivery system. Obviously, the unpredictability underlying the fundamental processes,

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the degree of customisation of the services offered, and the level of partner or customer involvement in the care delivery process make the downstream healthcare supply chain idiosyncratic from the industrial sector. Supporting this assertion, several researchers postulate that hospital supply chains are uniquely complex and knowledge-intensive, as evident in the heterogeneity of demand from downstream (Chen et al., 2013; Srivastava & Singh, 2021). These complexities in a hospital's supply chain could be attributed to their internal and external supply networks.

Medical supplies are generally routed through intermediaries as the structure of a hospital supply chain consists of a multi-tiered network of organisations and processes, but there are some medical supplies that the hospital has a direct business relationship with manufacturers (Rakovska & Stratieva, 2018). De Vries and Huijsman (2011) maintain that the literature demonstrates a fragmented interest in performance measures for healthcare supply chains. Beamon (1999a) acknowledges that the complex nature of the system makes the process of selecting suitable measures to assess the supply chain performance difficult. Several authors proposed that composite indicators can be used to overcome some of these challenges (Beamon, 1999a).

Although there may be variations depending on the requirements of the sector and the firm, quality, cost, flexibility, and time are generally used to measure supply chain performance (Beamon, 1999b). Hult et al. (2006) opine that supply chain performance is a multifaceted construct. Hult et al. elaborated further that quality, cost, speed, and flexibility determine hospital supply chain performance. Chen et al. (2013) shared a similar view and posits that affordability, quality, flexibility of the order fulfilment process, and speed are

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the key indicators of hospital supply chain performance. In respect of this study, cost, quality, flexibility, and service level are used to measure the downstream healthcare supply chain performance.

The performance of the downstream healthcare supply chain has become a grave concern for health policymakers as more resources are invested in it. However, researchers discovered that despite the extensive literature relating to the various approaches to supply chain performance, there is still the need to explore the construct further since the healthcare sector requires more clarity in this area (Mathur et al., 2018).

Role of Flexibility Orientation Culture

Culture relates to a social phenomenon that manifests in espoused beliefs, values, ethos, and taken-for-granted assumptions that shape an organisation's members' behaviour and determine how they perceive their actions in various circumstances (Schein, 1992). The culture of an organisation to a large extent determines employees' behaviour in respect of teamwork, information sharing, and risk-taking. Indeed, culture serves as a defining characteristic and a factor differentiating one organisation from another. Although culture has been described and measured in diverse ways, it is generally acknowledged that it has a strong relationship to organisational performance and can lead to sustainable competitive advantage (Klimas, 2016). Nevertheless, it is essential to choose an appropriate cultural framework to fit the scope of this study.

Considering the advice of Liu et al. (2010) that organisational culture performs various roles in a relationship, this study relies on flexibility orientation culture, a dimension of the competing values framework [CVF]

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espoused by Quinn and Rohrbaugh (1983) to assess the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance in Ghana. Flexibility orientation culture comprises group and developmental cultures. Developmental culture is change-driven and externally oriented while a growth culture is internally focused and emphasises open communication. In other words, a flexibility-oriented culture is driven internally and externally due to environmental competition (Cameron & Quinn, 2011; Cao et al., 2015; Quinn & Rohrbaugh, 1983).

Flexibility orientation culture is more appropriate for evaluating the downstream healthcare supply chain in the Ghanaian context since it is still evolving and is regularly in the process of evolutionary dynamics to modify the scope and scale of its operations to improve its performance (Liu et al., 2010). Besides, flexibility orientation culture may make it possible to build strong partnerships with key supply chain partners to exchange tacit and relational knowledge, bring in ideas from the institutional field and coordinate resources to improve the downstream healthcare supply chain's performance (Cao et al., 2015; Porter, 2019). Generally, flexible-oriented culture is characterised by employee involvement and optimisation of resources, change-driven, spontaneity, building teamwork, cohesiveness, responsiveness, entrepreneurship, risk-taking, and creativity in an organisation (Cameron & Quinn, 2011).

Organisations with a high degree of flexible-oriented cultures are less likely to respond favourably to market pressures from competitors because they highly regard distinctive business strategies that set them apart from competitors in the industry compared to low-level flexible-oriented cultures (Dai et al.,

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2018; Liu et al.). Flexibility-oriented healthcare facilities commit their resources to creating unique capabilities that enable them to achieve a competitive advantage from heterogeneity over their competitors (Klimas, 2016). Healthcare facilities with a flexibility orientation culture are inclined to create distinctive practices due to heterogeneous requirements and expectations from each customer in the downstream supply chain for ecological sustainability practices instead of aligning organisational strategy with institutional isomorphic forces over time (Dai et al., 2018; Dubey et al., 2017; Hoejmose et al., 2014).

Firm Size

An organisation's size determines the extent and number of different types of production capacity and capabilities it has, or the degree of various kinds of services it can offer its clients simultaneously (Kartikasari & Merianti, 2016). Consequently, supply chain practices have been influenced by the size of the firm in many industries. Lopes de Sousa Jabbour et al. (2011) assert that the bigger the size of the firm, the more supply chain management practices it adopts. Indeed, firm size influences the resources a firm has, and firms can use these resources to adapt to changes in the present competitive and dynamic market easily. This unevenness of access to resources, as espoused by resource dependency theory, creates power asymmetries (Pfeffer & Salancik, 1978).

Given the study's setting, firm size is controlled to prevent any possible variations in measuring downstream healthcare supply chain performance. Several past studies have extensively used hospital size as a control variable (Aiken et al., 2014; Lee et al., 2016) due to the mix of care services provided by private-for-profit, non-profit, and public healthcare facilities in the

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downstream healthcare supply chain. Similarly, the type of health facility has often been used as a control variable in prior studies to draw distinctions between private-for-profit, non-profit, and public healthcare facilities (Barnato et al., 2005; Liu et al., 2015). Anang et al. (2013) indicate that the way firm size is measured is contingent on specific standards in each country and industry. HeFRA (2022) categorised healthcare facilities in Ghana according to the type of facility. For instance, hospitals are classified as primary, secondary, and tertiary. Therefore, the type of healthcare facility is used in this study to determine the size of health facilities in the downstream healthcare supply chain.

Empirical Review

This section details an overview of a range of relevant bodies of literature based on the study's objectives. This was done to identify gaps and critique extant studies by contrasting their results.

Isomorphic Factors and DHSCP

The healthcare sector is under growing pressure to sustain its operations while considering human and environmental factors (Rezali et al., 2018). Many empirical studies, such as Koulikoff-Souviron and Harrison (2008), and Kauppi (2013), claim that isomorphic forces play a significant role in gaining an insight into managers' behaviour, supply chain linkages and operations management. In addressing “the impact of external institutional drivers and internal strategy on environmental performance”, Zailani et al. (2012) used a survey instrument to gather data from a sample of 132 environmental management system-certified Malaysian industrial firms for the study. The authors found that institutional forces outside the firm’s environment influence performance both

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directly and indirectly through its proactive internal ecological policy. Thus, a buyer's decision to adopt either a coercive or a cooperative approach to green supply chain management is contingent upon isomorphic pressures that the buyer is subject to.

Bhakoo and Choi (2013) researched "the iron cage exposed: institutional pressures and heterogeneity across the healthcare supply chain" with an inductive cross-case study designed to assess cases at each tier level and along various supply chains. Analysis of hospitals, distributors, and manufacturers revealed how organisations respond to various isomorphic pressures, which are noticeable at the different tier echelons of the supply chain when establishing inter-organisational systems. Additionally, the study highlighted how distinct combinations of endogenous and institutional forces result in different responses from the organisations throughout the tiers. The study concludes that the dynamics of inter-organisational systems implementation inside and between supply chain levels produce heterogeneity rather than isomorphic outcomes, thus revealing the "iron cage" of institutionalisation.

Wongthongchai and Saenchaiyathon (2019) explored "the key role of institution pressure on green supply chain practice and the firm's performance" in a study in Thailand using an institutional isomorphism theory. The study's findings from 286 responses gathered through a survey and analysed with structural equation modelling [SEM] indicated that institutional isomorphism factors significantly influence green supply chain management [GSCM] practices. The study further noted that green supply chain management practices significantly affect an organisation's performance. This could be attributed to

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the essential role of isomorphic forces in shaping and explaining organisational behaviour in the environmental setting.

Furthermore, D'Andreamatteo et al. (2018) employed institutional sociology theory to investigate "institutional pressures, isomorphic changes and key agents in the transfer of knowledge of lean in healthcare" in the Italian public and private healthcare sectors. A qualitative method and a case study design were used to evaluate environmental factors that prompted authorities and hospitals to adopt lean thinking in their supply chains. Their findings found that economic and isomorphic factors are the incentives that drove the Italian healthcare sector to embrace lean thinking in its operations. Dobrzykowski (2019) stated in a related study on "understanding the downstream healthcare supply chain: unpacking regulatory and industry characteristics" that the government regulates physicians' decisions regarding purchasing medical supplies and equipment, hence affecting the performance of the downstream.

Liu et al. (2018) studied the "relationships between isomorphic pressures and carbon management imitation behaviour of firms" in China's energy-intensive industries. The findings revealed that mimetic and coercive factors positively link a firm's behaviour to imitating a competitor's carbon management techniques. The study concludes that a firm's cost to copy a competitor's carbon management practices is relatively low. A similar empirical study on "green supply chain management approaches: drivers and performance implications" by Tachizawa et al. (2015) demonstrated that coercive and non-coercive drivers' impact on green supply chain management practices has unique consequences. On the basis of these empirical observations, the study proposes that:

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H1: There is a significant positive influence of isomorphic factors on the DHSCP.

H1a: There is a significant positive influence of coercive factors on the DHSCP.

H1b: There is a significant positive influence of mimetic factors on the DHSCP.

H1c: There is a significant positive influence of normative factors on the DHSCP.

Eco-procurement practices and DHSCP

Eco-procurement is considered the first stage in greening a firm's supply chain operations (Dubey et al., 2013) as it is crucial to the effective implementation of green supply chain management. Khan and Dong (2017) support this view and further indicated that sustainable business practices and performance are related. Their findings showed a strong positive correlation between eco-friendly business practices and an organisation's financial health. However, past empirical studies that examined the nexus among environmental supply chain practices, eco-product design, and purchasing concerning their influence on firm performance generate contradictory results (Hazen et al., 2011). Similarly, Zhang et al. (2020) concluded in empirical studies to explore how green practices influence a firm's supply chain performance in China that embracing green practices could impose some form of a financial burden on the organisation and subsequently compromise the operational effectiveness of the whole supply chain.

Drawing on a descriptive cross-sectional design and case study, Owusu-Bio et al. (2016) conducted "an investigation into sustainable product packaging

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practices and performance in the pharmaceutical industry in Ghana" to assess the Ghanaian pharmaceutical supply chain and the extent to which it conforms to sustainable packaging practices. The study results indicated that the industry players adhere to general environmental criteria and packaging standards required in their supply chains. Nonetheless, there is less collaboration and coordination regarding sustainable product packaging between producers and downstream industry participants in the supply chain. The study, therefore, called for effective collaboration among the stakeholders in the pharmaceutical supply chain in Ghana to promote sustainable product packaging.

Miguel and Brito (2011) discussed "supply chain management measurement and its influence on operational performance" from the perspective of four dimensions. Their findings provided empirical evidence for a positive relationship between supply chain management measurement and operational performance in respect of the four dimensions: increased delivery, quality features, cost savings, and flexibility. Rezali et al. (2018) stated that green healthcare supply chain practices in the healthcare sector indirectly boost hospitals' competitive edge and profitability. They further indicated that supply chain management practices such as procurement, warehousing, distribution, and medical waste disposal could promote the development of the healthcare sector and facilitate advancements through environmental practices.

In a similar line, Mandal (2017b) studied "the influence of dynamic capabilities on hospital-supplier collaboration and hospital supply chain performance" in India to determine the impact of the hospital and supplier partnership on hospital supply chain performance. They relied on a multi-unit study to gather perceptual data via e-mail survey from seven distinct firms in a

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typical hospital supply chain. Analysis of 192 responses using structural equation modelling confirmed that collaboration between hospitals and suppliers directly and positively affects hospital supply chain performance. The research accordingly urged hospitals' management to commit more resources to enhance their dynamic capabilities to discover any changes in the environment to maintain their collaborative partnerships that have favourable performance outcomes.

Evidence from the systematic literature review undertaken by Campos et al. (2017) via content analysis to explore "reverse logistics for the end-of-life and end-of-use products in the pharmaceutical industry: a systematic literature review" to ascertain reverse logistics [RL] practices applicable to the end-of-life [EOL] and end-of-use [EOU] vis-à-vis opportunities for research. The authors noted that empirical evidence from conventional reverse logistics, including managerial strategies, technologies, and mathematical modelling, influenced reverse pharmaceutical logistics but prescinded root cause solutions. In addition to the findings, the authors contended that implementing reverse pharmaceutical logistics is motivated by its potential for profit apart from reducing ecological effects.

Kumar (2020) relied on an exploratory case study with the aid of structured interviews to empirically assessed leading healthcare firms in India in a study entitled "green service production in healthcare and role of value chain flexibility." According to the study's findings, many green service production strategies need the support of several aspects of value chain flexibility. The study concluded that the relevance of each dimension of value chain flexibility is contingent on eco-procurement, green service practices, and

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innovation of green service design. Tseng et al. (2020) led an empirical investigation of the healthcare industry in Vietnam and identified environmental management systems, supplier assessment, environmental certification of suppliers, supplier partnership, and health and safety certifications as the top five criteria in process and sustainable supply management. In line with these empirical evidences, the study hypothesizes that:

H2: There is a significant positive effect of eco-procurement practices on the DHSCP.

H2a: There is a significant positive effect of eco-sourcing on the DHSCP.

H2b: There is a significant positive effect of eco-purchasing on the DHSCP.

H2c: There is a significant positive effect of reverse logistics on the DHSCP.

Flexibility Orientation, Isomorphic Factors, and DHSCP

In a study investigating electronic supply chain management adoption in China, Liu et al. (2010) recognised isomorphic forces and the moderating effects of organisational culture. Thus, flexibility orientation and control orientation as enablers of an organisation's proactive ecological initiatives. However, the authors observed that the moderating effects of flexibility orientation negatively influence coercive forces but moderated positively the effects of mimetic forces. Kemp and Dwyer (2001) identified in an empirical study that there is a linkage between organisational culture and organisational performance. Recent data suggests that understanding green supply chain

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management requires an awareness of organisational culture (El Baz & Iddik, 2021).

Hoejmose et al. (2014) adopted institutional theory in a study to collect survey data from 198 companies in the United Kingdom to assess "the effect of institutional pressure on cooperative and coercive 'green' supply chain practices". The study aimed to determine whether the choice and the decision to embrace green supply chain practices, including sound ecological purchasing, depend on institutional pressures and customer requirements for green supply chain management downstream. Their findings indicated that institutional pressures strongly and positively support collaborative techniques for managing green supply chains, but coercive factors largely determine demand from downstream customers. However, the findings showed persuasive evidence that coercive and cooperative green supply chain practices are motivated by considerably different causes.

Grounded in an institutional theoretical lens, Esfahbodi et al. (2016) conducted their research on the "governance pressures and performance outcomes of sustainable supply chain management- an empirical analysis of the U.K. manufacturing industry." A survey technique was employed to gather data from 146 managers in the manufacturing sector in the U.K., and structural equation modelling [SEM] was used to analyse the data. They found that exogenous factors drove the effective implementation of sustainable supply chain practices. Eco-procurement practices have a positive influence on economic performance, while the implementation of sustainable supply chain practices contributes to environmental performance but not necessarily economic performance.

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Researchers such as Dubey et al. (2017) undertook an empirical study entitled "examining the effect of external pressures and organisational culture on shaping performance measurement systems (PMS) for sustainability benchmarking: some empirical findings" in Indian manufacturing firms with 277 responses from a survey. The findings further discovered that both flexible orientation and control orientation culture play a distinct role in the differential influence of isomorphic factors in shaping supply chain sustainability performance. The authors concluded that both flexible-control orientation and external pressures could not influence supply chain sustainability performance alone since external pressures are highly effective under the organisational structure.

In a study carried out in the Chinese manufacturing sector using institutional theory, Dai et al. (2018) "examine the moderating effect of organisational culture on the relationship between market pressure and corporate environmental strategy". According to the analysis of survey data involving 250 manufacturing firms with the structural equation modelling (SEM) technique, normative and mimetic factors have a direct influence on the proactivity of a firm's environmental strategy. Furthermore, the findings discovered that various roles are played by both flexibility orientation and control orientation culture in the interactions between these two market forces and the proactive environmental strategy of firms. This finding confirmed Dubey et al. (2017) observation that flexibility and control orientations culture performs distinctive roles in relationships.

Etse et al. (2022) investigated "the effect of regulation on sustainable procurement: organisational leadership and culture as mediators" as there is a

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lack of insights into this link in existing research. Structural equation modelling [SEM] and descriptive statistics were employed to analyse survey data from 322 Ghanaian organisations in Accra and Kumasi. Sustainable procurement practice was moderate in Ghanaian organisations, but regulation significantly influences related practices. Another study by El Baz and Iddik (2021), using content analysis to conduct a bibliometric analysis on the nexus between "green supply chain management and organisational culture" with Scopus data from 2001 to 2020, identified two major areas of concern: organisational culture as a facilitator or constraint toward managing green supply chain and organisational culture's role in influencing green supply chain management on performance. The study thus hypothesizes in the light of the theoretical and empirical review that:

H3: Flexibility orientation culture positively moderates the relationship between isomorphic factors and the DHSCP when the moderating effect is high and stronger.

Flexibility Orientation, Eco-Procurement Practices, and DHSCP

Flexibility orientation gives a deeper appreciation of firms' emergence of different organisational cultures. Therefore, organisational culture influences the relationship between an organisation's proactive environmental practices and market pressure differently (Dai et al., 2018). Eco-procurement practices enhanced ecological performance in the purchase of healthcare supplies and also enable the assessment of environmental concerns of medical and pharmaceutical products to mitigate negative ecological consequences during healthcare delivery (Liu et al., 2019). Paulraj (2011) conducted empirical research on the impact of distinctive resources and/or competencies of an

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organisation on sustainability performance. The study's findings urged managers to recognise that a strategic procurement function alone cannot contribute to achieving the ambitious goals of sustainability, hence the need to complement it with internal resources and/or capabilities.

In a study to assess the connection between eco-purchasing management and corporate performance, González-Benito (2016) conducted an empirical investigation on 100 Portuguese companies to ascertain "the effect of green purchasing on purchasing performance: the moderating role played by long-term relationships and strategic integration". Empirical evidence from the study indicated that eco-purchasing management increases the effectiveness of the purchasing function, but the effect is much more significant when the firm forms long-term relationships with its suppliers in the supply chain. This corroborates the findings of several researchers that eco-procurement and/or partnership with suppliers for greening all relevant operations in the supply chain was shown to improve a firm's performance (Zailani et al., 2012; Esfahbodi et al., 2017).

Khan and Qianli (2017), in a study using five factors - green purchasing, green manufacturing, collaboration with customers, green information systems, and eco-design of the environmental supply chain operations to examine the "impact of green supply chain management practices on firms' performance: an empirical study from the perspective of Pakistan." The study found conflicting results after analysis of a survey dataset of 218 respondents in Pakistani manufacturing firms with the Statistical Package for Social Science [SPSS] program, version 22. According to the findings from the empirical study, apart from green purchasing, the remaining four independent variables, thus green manufacturing, collaboration with customers, green information systems, and

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eco-design, were scientifically significant predictors of organisational performance. It is evident that green purchasing negatively impacts organisational performance in Pakistan's industrial sector.

Flygansvær et al. (2018) concluded in a study to determine the effects of governance structures and culture on the environmental, economic, and social performance of the supply chain in the Norwegian electronics industry that inter-organisational culture and cooperation impact on the ecological, social and economic dimensions of sustainable performance of the supply chain. Another work by Dubey et al. (2019) appreciates how "big data analytics and organisational culture as complements to swift trust and collaborative performance in the humanitarian supply chain" involving civil and military institutions in disaster relief operations in developed and developing countries. This study was grounded in organisational information processing theory, and Warp partial least squares [WarpPLS] version 6.0 was used to survey data from 1,119 multiple responses. It was observed from the findings that the moderating effects of flexible orientation culture on the relationship between big data analytics capabilities and collaborative performance is positive and significant.

Grounded in contingency theory, Eggert and Hartmann (2021) investigated "purchasing's contribution to supply chain emission reduction" in a study based on longitudinal data from 260 firms. It was observed that an increase in eco-procurement and supplier management contributes significantly to a reduction in the magnitude of greenhouse gas [GHG] emissions of purchasing organisations' supply chains, particularly those with firms operating in sectors where emission control is paramount have seen a significant reduction. Meanwhile, in a systematic literature review "exploring integrated

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supply chain performance in healthcare: a service provider perspective" within the downstream supply chain, Srivastava and Singh (2021) indicated that improved integrated supply chain performance of hospital operations positively impacted care quality and patient-centeredness. The study formulated the hypothesis below in line with the theoretical and empirical arguments raised above.

H4: Flexibility orientation culture positively moderates the relationship between eco-procurement practices and the DHSCP when the moderating effect is high and stronger.

Gaps from Empirical Review

This study has thoroughly and extensively reviewed some empirical studies relevant to examining the relationships and noted some inconsistencies in the findings. A detailed analysis of empirical research shows that several studies used institutional theory. Few relied on institutional and dependency theories (Saeed et al., 2018), principal-agency theory (Flygansvær et al., 2018), stakeholder and fuzzy set theories (Tseng et al., 2020), contingency theory (Eggert & Hartmann,2021), and natural resource-based view theory (Samad et al., 2021) to conduct their investigations in the manufacturing sector in developed and emerging economies. Earlier empirical research in Ghana on the downstream healthcare supply chain is not grounded in theory and focused more on healthcare waste management in the public and private sectors (Amfo-Out, 2018; Asante et al., 2014).

Much attention has not been given to the source of these wastes in the supply chain, thus procurement practices. Furthermore, theory-driven and empirical studies on Ghana's downstream healthcare supply chain echelon are

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sparse. There is inadequate theoretical knowledge in Ghana of what motivates organisations to apply eco-procurement practices in their supply chains, despite ample evidence of sustainable supply chain management's significant role in reducing climate change impacts globally. Although environmental sustainability has been investigated in the supply chain for the past decade, it is still nascent as there is a paucity of theory-focused studies, especially on the downstream healthcare supply chain (Dubey et al., 2017; Winter & Knemeyer, 2013). This development leaves a sizable research vacuum which has to be addressed.

Even though isomorphic factors are supposed to cause organisations to act similarly in respect of structure and process (DiMaggio & Powell, 1983), the underlying forces of inter-organisational structures adoption within and between supply chains could produce heterogeneity (Bhakoo & Choi, 2013). Flexibility orientation can facilitate or inhibit the management of the green supply chain (El Baz and Iddik, 2021) because it has various effects on how an organisation reacts to perceived institutional isomorphism in adopting a new strategy (Dai et al., 2018; Dubey et al., 2017, 2019). Therefore, the influence of isomorphic factors on downstream healthcare supply chain performance may be weakened with a flexibility orientation culture (Liu et al., 2010).

Similarly, the influence of eco-procurement practices on downstream healthcare supply chain performance may be stronger with a flexibility orientation culture. To the best of the researcher's knowledge, no research in Ghana has yet empirically investigated how isomorphic factors and eco-procurement practices combine to influence the downstream healthcare supply performance while examining the role of the flexibility orientation culture on

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the relationship. Based on the empirical reviews, no study has theoretically combined institutional isomorphism and resource dependency theories to vigorously assess the downstream healthcare supply chain with partial least squares equation modelling in Ghana. Therefore, this scarceness creates a theoretical and practical void in the literature.

Conceptual Framework

Mugenda and Mugenda (2003) posit that a conceptual framework provides a concise explanation of phenomena under investigation with photographic detail. Figure 1 provides a holistic perspective of the framework and linkages among the study's independent, dependent, and moderating variables. The framework depicts the relationships among isomorphic factors, eco-procurement practices, the downstream healthcare supply chain performance, and organisational culture. The relationship between isomorphic factors and downstream healthcare supply chain performance depicts objective one. It is supported by the institutional isomorphism theory, which stipulates that those pressures within firms and the institutional environment led to the convergence of business practices in supply chains.

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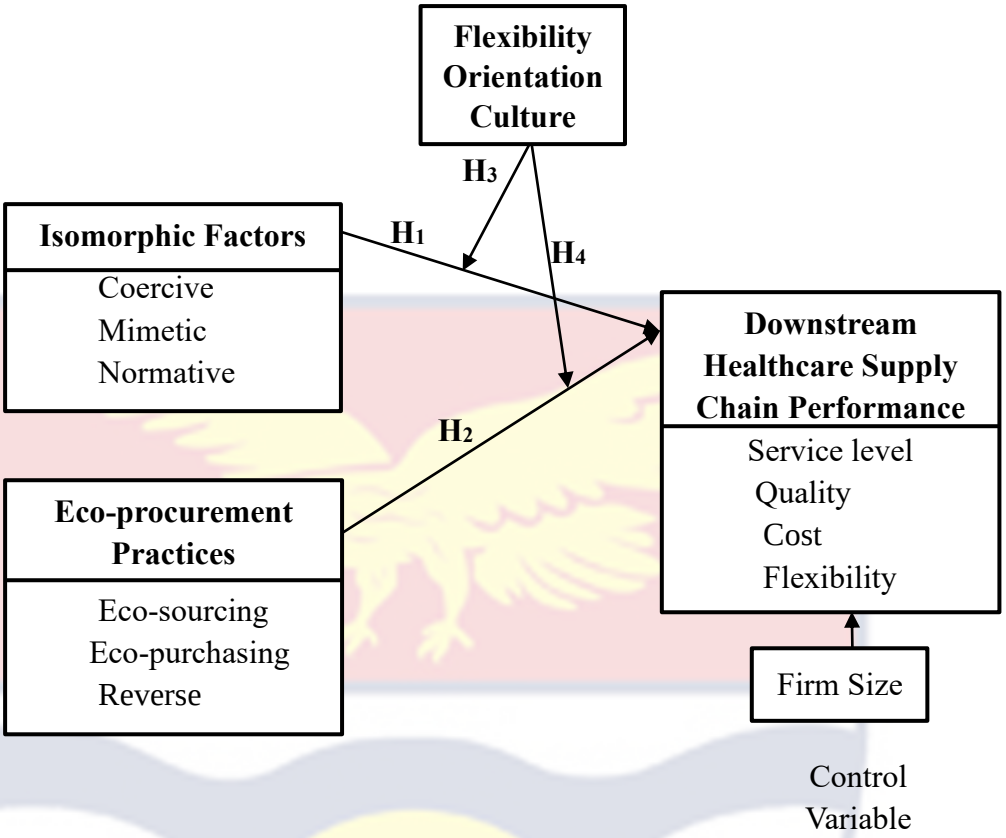

Figure 1: Conceptual Framework.

Source: Author's own construct, 2023.

The nexus between eco-procurement practices and downstream healthcare supply chain performance represents objective two. This is grounded in institutional isomorphism and resource dependency theories, enabling firms to enhance their supply chain performance to gain organisational legitimacy. The relationship between flexibility orientation culture, isomorphic factors, and downstream healthcare performance relates to objective three, and it is underpinned by institutional isomorphism and resource dependency theories. This makes it possible for the moderating role of flexibility orientation culture to take care of the prevailing inaccuracies in the institutional theory (Heugens & Lander, 2009).

Institutional isomorphism and resource dependency theories support this objective since organisations strive to embrace the structural characteristics of

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leading organisations in the industry through isomorphism (DiMaggio & Powell, 1983). Resource dependency theory underpins organisational behaviour, which reduces reliance and uncertainty in operations (Delke, 2015). The relationship between the variables is controlled by firm size in order to draw a conclusion that can be generalised. Figure 1 illustrates that the downstream healthcare supply chain's performance depends on isomorphic factors and eco-procurement practices. Therefore, the effectiveness of the downstream healthcare supply chain is likely to vary due to positive or negative changes in isomorphic factors and eco-procurement practices.

Chapter Summary

This chapter gives a thorough review of theoretical, conceptual, and empirical studies relevant to this study to provide a solid foundation for the study's findings. Also discussed in this chapter is the rationale behind the choice of institutional isomorphism and resource dependency theories. Lastly, the gaps identified were succinctly discussed and then the conceptual framework that evolves from the empirical review was provided.

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CHAPTER THREE

RESEARCH METHODS

Introduction

The study's purpose is to examine the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance of private-for-profit healthcare facilities in the Greater Accra Region with flexibility orientation culture playing the moderating role. Sarantakos (2013) posits that research methods involve tools and instruments the researcher employs to generate empirical evidence and analysis considering the research units and purpose of the study. This chapter discussed the research philosophy, approach, design, study setting, population, sample and sampling procedures. It further described data collection instruments, data collection procedure, data processing and analysis, validity and reliability of the study's instrument, ethical considerations, and concluded with a summary of the chapter.

Research Paradigm

A research paradigm or philosophy denotes a set of presuppositions that illustrate how the world is observed in an inquiry. It indicates the researcher's worldview about "what is important, what is legitimate, what is reasonable" (Patton, 1990, p. 37). Paradigms indicate particular viewpoints about ontology, epistemology, methodology, and axiology (Sarantakos, 2013). The research process can include a variety of philosophical orientations, including positivism, postpositivism, social constructivism, transformative, and pragmatism, among others (Creswell & Creswell, 2018; Saunders et al., 2019). Essentially, a practical research philosophy informs the methodological choice

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and is essential in determining how the researcher perceives the world, especially in addressing the research problem (Saunders et al., 2019).

A postpositivist philosophical stance is adopted for the study based on the ontological assumption that reality is ambiguous, diverse, and changeable as such human behaviour cannot be objectively studied but can only be fallibly and probabilistically determined as a result of the researcher's weaknesses in producing generalisable results for the population of interest (O'Leary, 2004; Robson, 2016; Maksimović & Evtimov, 2023). Organisational challenges in the view of postpositivists are not specific to any discipline, hence finding solutions to them requires a variety of knowledge (Thyer, 2008). Postpositivists acknowledge that absolute objectivity is unattainable and that truth is contingent and dependent on history and society (Guba &Lincoln, 2005; Jennings, 2005). The postpositivist paradigm uses reductionism, numerical metrics, and scientific empiricist procedures to collect objective facts from observations about people's behaviour, measure variables, and test causal relationships to support rather than validate hypotheses and theories that are constantly revised (Slife & Williams, 1995; Wang et al., 2007). Statistical tools are therefore used for analysis to ensure the results are valid and reliable.

Research Approach

Creswell and Creswell (2018) note that the research approach is the blueprint and procedure for conducting research and is linked to the study's philosophical assumptions. One of the leading approaches recognised by Saunders et al. (2019) in scientific research is deductive reasoning. A deductive approach is supported by positive epistemology and follows the quantitative methodology to illustrate causal laws that describe situations and/or

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relationships (Sarantakos, 2013; Saunders et al., 2019). On the contrary, an inductive approach relies on the interpretivism philosophy to observe the social world using non-numeric methods to generate data and describe reality per the participants' experience (Adams et al., 2014). A deductive reasoning approach is employed to examine the cause and effect linkages between the variables in the study.

The justification for adopting the deductive reasoning approach is to deduce the truth with the use of empirical observation to obtain numeric data via structured questionnaires from surveys to allow rationality of individuals and their learned behaviour in testing hypotheses to support theory confirmation or rejection (Creswell & Creswell, 2018; Saunders et al., 2019). Moreover, the deductive approach enables the use of statistical techniques and probabilistic assertions (Saunders et al., 2019) to examine the effects of isomorphic factors and eco-procurement practices on the downstream healthcare supply chain performance to generalise the sample elements to the whole population. However, the main criticism of the deductive approach is that reality cannot be objectively defined as contended by postpositivists but subjectively determined by social behaviour (Girtler, 1984; Sarantakos, 2013) because it is impossible to have a complete between humans and knowledge (Iofrida et al., 2018).

Research Design

The research design outlines the procedures and methods for collecting and analysing the relevant data to accomplish the study's objectives and answer the research questions (Adams et al., 2014; Saunders et al., 2019). Saunders et al. indicate that the research philosophy and approach to theory development influence the choice of research design. Considering the advice of Adams and

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Creswell and Creswell (2018) this study adopted an explanatory research design with epistemological postpositivist research philosophy and a deductive reasoning approach. The justification for resorting to the explanatory research design is to provide a greater insight of the research problem from multiple perspectives, analyse the causal paths to identify their collective strengths and present a framework for explaining the connection between studied variables (Creswell & Creswell; Saunders et al., 2019).

Nevertheless, the major limitation of using the explanatory design is that ensuring a statistically representative sample can consume time (Wildemuth, 2016). On the other hand, explanatory design is driven by survey and experimental strategies to gather quantitative data via standardised questionnaires, structured interviews, or structured observation about a sample for generalisation to the population (Fowler, 2008). The study relied on a survey strategy because of its strength of gathering multiple volumes of numeric data cost-effectively within a relatively short period for easy comparison. Besides, a survey strategy is deeply rooted in deductive reasoning and enables the researcher to manage the research process adequately. Moreover, it allows using descriptive and inferential statistics to statistically analyse empirical data (Sarantakos, 2013; Saunders et al., 2019).

Bearing in mind the accessibility to the target population, the extent of current information, and available resources in undertaking the study (Saunders et al., 2019), a cross-sectional survey with structured questionnaires were chosen to gather data from respondents in private-for-profit hospitals distributed across the Greater Accra Region [GAR] at a specific point in time. Cross-sectional surveys reduced the measurement of attitudes, situations, or

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phenomena to numbers through rating scales. Also, it helps the researcher to make conclusions about the study's links between the independent and dependent variables. De Vaus (2014) contends that it is challenging for a cross-sectional survey to prove causality because data was gathered at a particular time. The study overcomes this weakness by supporting the outcomes and inferences with theory, reason, and/or intuition.

Study Area

The study was conducted within the private health sector in Ghana. The private health sector constitutes a sizable portion of Ghana's healthcare system and plays a considerable role in delivering services and marketing medical products (Ghana Health Service, 2020). The sector improves access to quality healthcare by complementing public hospitals' efforts to strengthen the country's healthcare system (Nimako et al., 2020). Kwateng et al. (2017) noted that private healthcare facilities, compared to public hospitals, offer their clients high-quality care and customer satisfaction. The actors in the sector include private and faith-based hospitals and clinics, maternity homes, chemical shops, pharmacies, diagnostic centres, health businesses, and professional bodies (Nimako et al., 2020).

Despite the heterogeneity in the private health sector, it delivers basic and specialised services at the primary and secondary levels, respectively. The 2017 Ghana Living Standards Survey [GLSS7] report showed that the private health sector accounted for 51.7% of most health consultations in the country. The report further revealed that the number of people who sought healthcare from private facilities in Accra alone in 2018 amounted to 68.8% (Ghana Statistical Service, 2017). However, healthcare delivery has considerable

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environmental effects, and various measures are taken to minimise these effects, which might differ from country to country due to differences in policy priorities and resource availability (Ryan-Fogarty et al., 2016).

The private-for-profit healthcare facilities, specifically hospitals and clinics in the Greater Accra Region [GAR], are the focus of this study. GAR has been selected as the research site because it is primarily urbanised and cosmopolitan (Alhassan et al., 2015). This accounts for the strategic saturation of modern private hospitals and clinics compared to other regions in Ghana, where there is a widening urban-rural bias in locating them (Ghana Statistical Service, 2021; Obuobi et al., 1999). Privately owned hospitals also form eight out of every 10 health facilities in the region (Ghana Hospitals, 2020), making it possible to obtain an adequate sample to generalise the study's findings. Besides, Berg's (2001) advice that the study area should be easily accessible and within the researcher's reach also informed the selection of the study area. The latter further posits that the researcher's knowledge about the study's respondents and also awareness of their schedules and rituals make entry into the study site much easier.

Study Population

The population encompassed a group of researcher interests to generalise the study's findings (Fraenkel &Wallen, 2003). The total number of registered and licensed private healthcare facilities in the downstream healthcare supply chain in the GAR is 1,054. However, the study concentrated on registered and licensed private-for-profit clinics and primary hospitals in the GAR. Records available from Health Facilities Regulatory Agency [HeFRA] show that there are 577 registered and licensed private-for-profit clinics and

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primary hospitals in the region as at the end of May 2022. This was made up of 436 clinics and 141 primary hospitals. These categories of hospitals were chosen over faith-based and not-for-profit private hospitals because they are big enough to meet the minimum requirements of the study since they provide essential healthcare services, primary healthcare services, general services, and mandatory services (HeFRA, 2022).

This study was restricted to private-for-profit clinics and primary hospitals. The private-for-profit clinics and primary hospitals are more concerned with the ever-growing competitive pressures to deliver quality and timely healthcare services to grow as a business, hence the need to improve clinical and operational performance (Nartey et al., 2019). They are also exempted from the Public Procurement Act, Act 663, 2003, as amended by Act 914, 2016; hence there is more flexibility in the procurement processes than in public hospitals even though the downstream healthcare supply chain operates under a robust regulatory regime. The population consists of hospital administrators, professional procurement managers, medical directors, pharmacists, and laboratory managers.

The job designations and knowledge of these key personnel made them an integral part of the hospitals' supply chain operations, particularly in strategic decisions relating to procuring and using medical and pharmaceutical products in each hospital. This made it imperative for the researcher to rely on them to obtain the needed information to conclude the study's objectives. The inclusion criteria are private for-profit clinics and primary hospitals registered and licensed by the HeFRA and are members of the Region's Private Health Facilities Association of Ghana [PHFAG]. On the contrary, unregistered,

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unlicensed, and unaccredited private-for-profit clinics and primary hospitals that are members of PHFAG in the region were excluded from the study.

Sample and Sampling Procedure

Sarantakos (2013) posits that covering the full population may not provide a significant benefit over sample surveys but offers equally comparable and valid results. Sampling enabled the selection of an appropriate sample to make inferences about the entire population. To draw each participant from the sampled private-for-profit hospitals for the survey, the probability sampling method, precisely a simple random technique was employed. In order to eliminate sampling bias, a sampling frame consisting of all registered and licensed private-for-profit hospitals, which are members of the PHFAG, was developed from the HeFRA database. The study relied on the sampling frame to choose the participants for the survey because it made it easier to access samples and enabled the sampling procedure to select valid samples.

The justification for using a simple random sampling was to ensure a neutral, equal, and a zero bias likelihood of being chosen to ensure the sample's representativeness (Adams et al., 2014; Saunders, 2019). Saunders and Townsend (2018) indicate that using simple random sampling to choose participants from relatively large numbers of respondents to gather quantitative data helped the researcher makes statistical inferences. The sample size of the target population was determine using Krejcie and Morgan's (1970) sample size formula. The reason for resorting to Krejcie and Morgan's (1970) sample size formula was to ensure that the sample size was statistically consistent and accurate in generating enough responses to permit robust statistical tools for the analysis. The procedure involved in the calculation is detailed below:

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$$s = \frac{X^2 NP\,(1-P)}{d^2\,(N-1) + P\,(1-P)}$$

Where:

s = required sample size.

X2 = Chi-square for one degree of freedom at the desired confidence level, thus 3.841 is the table value.

N = population size, which is 577.

P = population proportion, it is assumed to be 0.50, which according to Rose et al. (2014), can give the largest sample size.

d = desire margin of error, thus the degree of accuracy expressed as a proportion at 5% (0.05).

Therefore, the sample size for a population of 577 is determined as:

$$s = \frac{3.841\ x\ 577\ x\ 0.50\ (1-0.50)}{0.05^2\ (577-1) + 3.841\ x\ 0.50\ (1-0.50)}$$

$$s = \frac{3.841\ x\ 577\ x\ 0.50\ (0.50)}{0.0025(576) + 0.96025}$$

$$s = \frac{554.06425}{1.44 + 0.96025}$$

$$s = \frac{554.06425}{2.40025} = 230.836059$$

s = 231 is the sample size.

The respective private-for-profit healthcare facilities constituted the study's units of analysis because of their respective roles in procuring various medical and pharmaceutical products to support their operations at the downstream healthcare supply chain. In the view of Alreck and Settle (1995), a sample size of 10% or more of the parent population less than 1000 is deemed as a representative sample to increase the confidence level of the researcher, mainly when a sample is statistically chosen. Burns and Bush (2000)

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emphasised that the probability of a study achieving its purpose is high if a sample size of 5% of the population was chosen scientifically.

Concerning the criteria for determining sample size in partial least squares structural equation modelling [PLS-SEM], Hair et al. (2011) stipulate that the least number of observations should equal either 10 times the highest number of structural paths aimed at a given construct or 10 times the highest number of items measuring that construct. On the contrary, when the largest number of structural paths pointing to any construct is two, the least number of observations required to attain the 80 percent level of statistical power to predict R^2 values of at least 0.25 in an endogenous construct with a p-value ≤ 0.05 is 33 (Hair et al., 2017a). With reference to the minimum thresholds discussed above, the study's sample size of 231 observations, therefore, satisfies both requirements.

Data Collection Instrument

A survey questionnaire is a recommended survey tool for data collection in situations where time and other resources required to undertake the study are somewhat constrained, particularly when the sample size is relatively large and the individual elements are geographically dispersed (Sarantakos, 2013; Saunders et al., 2019). Babbie (2005) posits that surveys are the main instrument employed in studies where the units of analysis are individual persons. The researcher chose the questionnaire as the principal instrument for gathering data since these observed issues applied to the study and hence relevant elements. Besides, the questionnaire was chosen because it provides some comparative benefits over a structured or unstructured interview schedule.

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For instance, Sarantakos (2013) notes that the subject matter of the questionnaire is relatively consistent, so it does not differ from one respondent of the same group to another. This is due to the uniformity in the numbering, wording, and type of questions asked. Furthermore, questionnaires in comparison to interviews are not susceptible to some weaknesses resulting from the interviewer's biases (Fraenkel & Wallen, 2003) which might undermine the validity of the study's findings. The latter two strengths of the questionnaire were crucial in achieving the main objective of the study. Considering Saunders et al. (2019) advice that the type of survey that the researcher chose will influence how many people respond directly, the study resorted to a structured survey questionnaire as the prime research instrument for gathering cross-sectional data. This was done in order to ensure that the study's respondents gave unbiased information which could also be compared and thereby allow for some possible generalisations of the research's findings.

Moreover, the use of the structured questionnaire made it possible for the researcher to elicit information from individual people about facts to examine changes in attitudes or behaviours over time. It further enabled the researcher to assess and describe the causal relationships and effect among the variables in order to choose whether to reject or not to reject the research hypotheses (Gill & Johnson, 2010). Using a structured questionnaire for the study enabled sampled participants to give unique answers to uniform questions in a predetermined and highly standardised manner (De Vaus, 2014). A structured questionnaire is also appropriate for the postpositivist paradigm because it enables the researcher to create numeric metrics for observations and investigation people's behaviour (Creswell & Creswell, 2018) since knowledge

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is shaped largely by the context and perspectives of both the researcher and participants (Guba & Lincoln, 2005). It further permits quantitative data to be analysed statistically using descriptive and inferential statistics to ensure objectivity in the results (Saunders et al., 2019).

Besides, the structured questionnaire offers participants who are not eloquent to readily provide answers from the pre-coded responses provided (Sarantakos, 2013). However, the major weakness of the structured questionnaire was that the rigid structures and a high level of homogeneity restrict self-expression, additional suggestions, or alternative responses, making it impossible for participants to respond creatively to the questions (Sarantakos, 2013). The construction of the questionnaire followed the research objectives and review of relevant literature on the subject matter. Only direct and closed-ended questions (Fink 2013) or forced-choice items (De Vaus 2014) were used throughout with a range of potential responses from which the participants are anticipated to select. The justification for choosing closed-ended questions over open-ended questions was due to their ability to provide consistency and greater uniformity of responses to enable easy processing of data with statistical tools (Babbie, 2005).

Additionally, the majority of the study's participants were people who are extremely busy as such had little free time to consent to any effective interviews to be conducted on them. The closed-ended question items were adapted from past studies after a detailed literature review to enhance the replication of the study and also to make it possible to evaluate dependability (Bourque & Clark, 1994). Participants were asked to evaluate how strongly they agree or disagree with a series of statements with possible answers to rating

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questions given in a rectilinear form on a Likert-style scale (Dillman et al. 2014).

Five components made up the survey questionnaire; thus, A to E (See Appendix A). Section A relates to isomorphic factors and the question items were sub-divided into coercive, mimetic, and normative factors. Section B covers question items on eco-procurement practices under the subdimension: eco-sourcing, eco-purchasing, and reverse logistics. The question items on the downstream healthcare supply chain performance [DHSCP] were contained in section C while section D featured questions on organisational culture. The final section (E) comprised question items about the respondents' socio-demographic profile and hospital (firm) size. The survey instrument is self-reported to simplify participants' tasks in responding at their convenience and also to increase the return of properly completed questionnaires (Sarantakos, 2013; Saunders et al., 2019).

Variables and Measurement

Several concepts in social sciences cannot be measured directly, hence the need to reduce these vague, abstract, or unclear concepts into measurable, and concrete empirical terms or referents to make their measurement possible, precise and clear (Sarantakos, 2013; Sekaran & Bougie, 2016). For this reason, concepts have to be transformed into empirical measurements, or quantifying variables in order to determine their values, such as their frequency, occurrence, and strength (Sarantakos). Therefore, the measurement indicators on the survey questionnaire were designed based on a thorough literature review to address the variables or constructs in the conceptual framework within the context of the downstream healthcare supply chain performance. The survey questionnaire

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used many indicators or items from several existing studies to operationalise the five variables or constructs in the framework.

Table 1: Variables Measurement and Sources

Variables	Measurements/Indicators	Sources
Isomorphic Factors	Coercive, mimetic, and normative factors	(Carter & Carter, 1998; Eltayeb et al., 2010; Zailani et al., 2011).
Eco-procurement practices	Eco-sourcing, eco-purchasing, and reverse logistics.	(Carter & Carter, 1998; Carter & Jennings, 2004; Paulraj, 2011; Rogers & Tibben-Lembke, 2001; Zhu et al., 2013).
Downstream healthcare supply chain performance	Service service level, quality, cost, flexibility.	(Chen et al., 2013; Hult et al., 2006; Muntaka et al., 2017).
Flexibility orientation culture	developmental and group cultures.	(Cameron & Quinn, 2011; Quinn & Spreitzer, 1991).
Hospital (firm) size	Facility type	Barnato et al., 2005; Liu et al., 2015).

Source: Field survey, (2023).

Thus, all the indicators measuring the five variables of the study were adapted from previously validated instruments in earlier studies. Nevertheless, minor modifications were made to the phrases in the measurement items to improve comprehension while still capturing and reflecting the study's purpose and objectives. All five variables were rated on a Likert scale with a range of one to five to gauge how strongly respondents agreed or disagreed with the items posed. Lu et al. (2018) noted that a five-point Likert scale makes it easier for respondents to indicate their stance and can avoid biased. The study employed a reflective measurement model taking into consideration the advice of Bisbe et al. (2007) that the participants' responses manifest the underlying

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conditions of the latent variable. The measurement items or indicators and sources for the five constructs are illustrated in Table 1 above.

Validity and Reliability

The design, structure of the study's questionnaire, and thoroughness of pre-testing have a significant influence on the measurement of validity and reliability of data collected and the return rate achieved (Saunders et al., 2019). For this reason, the adapted measurement items from established sources were validated by the researcher's academic supervisors and two experienced experts in the Ghanaian medical supply chain industry to ensure that the items assess the construct they were meant to measure within the study's parameter. The comments from the academic supervisors and experienced experts on the survey questionnaire were used to modified the sequence and wording of the questions to enhance understanding and effective measurement of the constructs (Adams et al., 2014; Saunders et al., 2019).

Subsequently, the survey instrument was pre-tested on 25 individuals from polyclinics, municipal hospitals, and faith-based hospitals in the Greater Accra Region. The pre-testing helped remove any ambiguities and assess the questionnaire's consistency and suitability (Babbie, 2005; Sekaran & Bougie, 2016). Before the actual data collection began, the survey instrument was reviewed further with minor corrections based on the feedback from the pre-testing to improve the structure. The Cronbach alpha was utilised to check the reliability of the survey questionnaire to ensure accuracy, consistency, and repeatability using the same approach under similar conditions with the same participants. Similarly, cross-loading and confirmatory factor analysis (CFA) for content validity was tested.

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Data Collection Procedures

Prior to gathering primary data, an introductory letter from the Head of the Department of Marketing and Supply Chain Management, University of Cape Coast, was obtained and delivered personally to the management of all the private hospitals involved in the study to grant legal access to their facility and the respondents for data collection. Similarly, a clearance letter from obtained the institutional review board (IRB) was affixed to all the questionnaires before delivering them to the respective participants of the study. This was done to reassure participants that all ethical issues surrounding the study have been addressed and to voluntarily allow them to take part in the study. In line with Dillman's (2014) tailored design method for administering a survey, self-reported cross-sectional survey questionnaires were used.

The questionnaires were hand-delivered by the researcher to all 231 participants after permission was granted. The self-reported cross-sectional survey took place between 16th December 2022 and 30th January 2023. Thus, four weeks on average excluding weekends and Christmas holidays. The participants used three weeks to voluntarily complete the questionnaire while the researcher used a week to pick up the completed questionnaires from the participants. This was done to offer every participant enough time to voluntarily respond anonymously to the standardised questions in order to increase completion rates. Each participant would spend approximately 25 minutes to complete the questionnaire.

A major challenge faced in gathering data from some healthcare administrators was difficulty in getting access to some of the study units on time because of the bureaucratic nature of the healthcare facilities. However, this

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challenge was overcome after showing the student's identity card and explaining further that the study is for academic and research purposes. Another issue that posed a significant challenge to data collection was the extremely extensive follow-ups that the researcher had to do before some of the study units responded to and returned the study's questionnaires.

Return Rates

One indicator of the sample respondents' representativeness is the total response rate (Babbie, 2013). The ease of locating the healthcare facilities made it possible to practically distribute the 231 questionnaires to the sampled participants. All 231 questionnaires were retrieved from the participants because the researcher personally went to their respective workplaces to collect them. Out of the number, 26 were incomplete due to non-responses to some questions, hence excluded from the valid ones. This was done to eliminate the likelihood of incomplete responses influencing the data as well as the outcome of the study. Moreover, analysis of incomplete responses may result in missing data if they are not handled appropriately and this might affect the study's findings (Babbie, 2005). The number of total valid responses received for the study's analysis was 205, thus 88.70% return rates were attained.

Table 2: Return Rates

Categories	Number of healthcare facilities	Percent (%)
Sample size	231	100.00
Receivable responses	231	100.00
Incomplete responses	26	11.30
Valid/usable responses	205	88.70

Source: Field survey, (2023).

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The return rate of relevant responses gathered and their corresponding percentages are illustrated in Table 2. The high return rate achieved was attributable to the several follow-ups and reminders sent to respondents once a week to ensure their voluntary participation. For any study's analysis and reporting, a return rate of 50% is enough, 60% is satisfactory, and 70% is extremely good (Babbie, 2005, p. 272). The study's return rates in Table 2 were very good since they ranged from 70% to 90%, as suggested by Babbie (2005). The latter source emphasised that these response rates are only guidelines without any statistical support. Nonetheless, a verified absence of response bias is much more significant than high return rates (Babbie). It is instructive to note that a significant nonresponse bias is less likely to occur with a high response rate than with a low rate.

A low return rate, on the other hand, is a warning indicator since the nonrespondents are likely to vary from the responders in ways other than merely their desire to take part in the survey (Babbie, 2013). Although, these comparisons put the study's survey return rate in perspective, a greater than average response rate does not imply the findings of the study are unbiased (Rogelberg & Stanton, 2007). Alternatively, a lower than average return rate is not necessarily an indication that responses are inevitably biased (Saunders et al., 2012).

Ethical Considerations

When using human participants in social research, Punch (1994) suggests that research ethics must address concerns like informed consent, no harm, voluntary participation, anonymity, confidentiality, privacy, and plagiarism. Before applying for ethical clearance, the researcher's supervisors

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provided a supporting letter (see Appendix C) to consent to the request. Prior approval of ethical clearance (see Appendix B) was requested from the Institutional Review Board [UCCIRB] at the University of Cape Coast before data collection began. The rationale was to safeguard the research participants' interests and avoid risking the individuals and the private-for-profit health institutions being studied. Complementing this was a letter sent to the management of private-for-profit health institutions to request permission and consent for data collection.

Also, information relating to the study's purpose was disclosed to participants to secure their voluntary participation and avoid any possible scope of deception. The anonymity and confidentiality of participants during data analysis and beyond were ensured by using pseudonyms to nullify any actual or perceived identities of responses to any particular individuals or health institutions studied. Similarly, the survey data collected was stored in a password-controlled folder to limit access to unauthorised copying and/or destroyed when it is no longer needed to ensure anonymity, confidentiality, and privacy. Finally, all the sources quoted or paraphrased in the study have been duly acknowledged in line with the referencing style adopted by the University to get out of being accused of plagiarism.

Data Processing and Analysis

Conclusions for the respective population may be drawn after analysis of sampled data from beliefs, thoughts, attitudes, opinions, feelings, and knowledge gathered via a survey (Fraenkel & Wallen, 2003). Sarantakos (2013) posits that primary data collected through surveys require data preparation, counting, categorising, linking, predicting, and statistical testing. For this

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reason, the survey data was reduced numerically before being analysed scientifically using statistical techniques. The data was therefore keyed into a Microsoft Excel comma-separated values [CSV] file and subsequently cleaned of visible errors resulting from missing values, repeated and incomplete responses to ensure reliability and consistency (Blumberg et al., 2014). Coding was done according to the latent variables in the framework.

Taking Sekaran and Bougie's (2016) suggestion that quantitative data must be precise, complete, and suitable for further analysis into consideration, IBM Statistical Package for Social Sciences [SPSS] version 26 was further employed to carry out descriptive statistical analysis. The descriptive summarised the demographic profiles of respondents in relative frequencies and percentages as well as expressed numerically other descriptive variables of the study using means, standard deviations, kurtosis, and skewness (Malhotra, 1999). The PLS-SEM version 4.0 was utilised to perform the inferential statistics to accomplish all the study's objectives. In other words, the inferential statistical tools were used to assess indicator reliability, discriminant and convergent validity, multicollinearity, and also test the model's basic assumptions by performing correlation and multiple regression to ascertain the links between the exogenous and endogenous variables.

The Rationale for Using the PLS-SEM

Partial least squares path modelling, often referred to as PLS-SEM, is a variance-based structural equation which is being used in diverse fields, including healthcare (Avkiran, 2017; Henseler et al., 2016). However, studies on healthcare typically failed to defend the selection of PLS-SEM as well as the inability to perform robustness testing (Avkiran). PLS-SEM is a second-

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generation multivariate tool (Ringle et al., 2012) and incorporates first-generation characteristics. Thus, both principal components and linear regression analysis. In comparison with other variance-based structural equation modelling [SEM] techniques such as AMOS and LISREL), the PLS technique has been dubbed a silver bullet and considered to be the most completely developed all-purpose system (Bagozzi & Yi, 2012).

Consequently, the PLS approach was chosen over other SEM techniques for analysing data due to its ability to perform structural equation models with latent variables and series of relationships involving cause and effect analysis in an acceptable way (Chin, 1998; Hair et al., 2017a; Henseler et al., 2016). PLS-SEM aims at maximising the explained variance of endogenous latent variables when the multivariate normality assumption is loosened (Avkiran, 2017). Further, nonnormal data in social science studies that do not conform to a multivariate normal distribution can be analysed with the PLS approach since it does not need normality assumption to estimate model parameters. Also, the PLS-SEM technique can handle much larger and more complex structural models with many constructs as a result of its superior statistical power and quick convergence (Avkiran; Hair et al.).

Specifically, it is a regression-based technique for investigating linear linkages between many independent exogenous constructs and one or more endogenous variables (Hair et al.). Hair et al. (2021) note that the integration of multiple regression and factor analysis enabled the PLS path modelling to minimise residual variances of endogenous variables. Additionally, the PLS can perform both structural and measurement models estimate with many latent variables and indicators even with small sample sizes (Sarstedt et al., 2016).

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Determining the appropriate criteria for a sample size in PLS-SEM research has generated several discussions in past studies, and it was suggested that the sample must be at least 10 times the maximum number of indicators linked to an outer model (Hair et al., 2014b; Hair et al., 2017a).

Moreover, PLS is considered a suitable approach for estimating and developing the statistical model since it offers researchers the chance to examine relationships between variables and ascertain the existing pathways among them (Ringle et al.,2015). The observations made from developing the statistical model highlight potential relationships and proposed hypotheses that may or may not be tested later. This made PLS-SEM the most appropriate tool for prediction and application to theory validation. Based on the above strengths, the PLS path modelling has been chosen as a method for testing the hypotheses of the study to help healthcare researchers and policymakers make informed decisions and choices.

Chapter Summary

The research methods used to address the study's research questions were discussed in the chapter. A postpositivist epistemological stance involving a deductive reasoning approach was adopted for this study. An explanatory research design with a cross-sectional survey was used to collect data from private-for-profit clinics and hospitals in the Greater Accra Region. A sample size of 231 respondents was chosen probabilistically with a simple random sampling technique. The PLS-SEM tool was employed to analyse the data collected. Descriptive and inferential statistical methods were used in the data analysis.

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CHAPTER FOUR

RESULTS AND DISCUSSION

The study's purpose is to examine the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance of private-for-profit healthcare facilities in the Greater Accra Region with flexibility orientation culture playing the moderating role. The data was sourced through structured questionnaires, and the analysis of respondents' responses is performed in this chapter to answer the study's objectives. A total of the 205 fully completed questionnaires from the field survey were analysed with the Partial Least Squares Structural Equation Modelling (PLS-SEM) in this chapter. The presentation of results is divided into three parts: the demographic profile of the sample, reflective measurement model evaluation, and structural model assessment. The chapter further discussed the results under the study's objectives and hypotheses.

Demographic Profile of the Sample

This section used descriptive statistics to analyse the basic information about respondents' gender, position, academic qualification, and type of facility they work in. The findings are detailed in Table 3.

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Table 3: Demographic Profile of the Sample

Category	Frequency	Percent (%)
Gender		
Male	115	56.1
Female	90	43.9
Total	**205**	**100**
Position		
Purchasing Manager	85	41.5
Hospital Administrator	43	21.0
Medical Director	46	22.4
Pharmacist	10	4.9
Laboratory Manager	21	10.2
Total	**205**	**100**
Highest Educational Qualification		
Higher National Diploma	20	9.8
Bachelor's Degree	105	51.2
Master's Degree	60	29.3
Others	20	9.8
Total	**205**	**100**
Type of Healthcare Facility		
Clinic	145	70.7
Primary Hospital	60	29.3
Total	**205**	**100**

Source: Field Survey (2023).

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Concerning the gender of respondents, Table 3 indicated that 115 were males, which amounted to 56.1% of the total sample, whereas the remaining 90 accounted for females, thus 43.9%. This shows that the private-for-profit healthcare facilities sampled in the Greater Accra Region [GAR] are dominated by men. Regarding the individual respondent's position, purchasing managers of respective private-for-profit healthcare facilities who answered the questionnaire were 85, and constituted 41.5% of the total responses. The responses corresponding with medical directors and hospital administrators are 46 (22.4%) and 43 (21.0%), respectively. The pharmacists' respondents were 10 (4.9%), while responses accounting for laboratory managers were 21 (10.2%).

The findings in Table 3 regarding the position of respondents indicated that all the respondents fall within management and administrative functions and that their choice of medical devices and pharmaceutical products could greatly influence the healthcare facilities' supply chain performance. Regarding the highest educational qualification attained by respondents as presented in Table 3 above, 105, accounting for 51.2%, represented bachelor's degree holders, whilst 60 responses, amounting to 21.3%, have Master's degrees. Furthermore, 20 responses constituting 9.8%, indicated that they have Higher National Diploma [HND] and the remaining 20 responses representing 9.8%, fall under other educational qualifications. It is essential to state that the 'other' category of educational qualification relates to professional qualifications and/or training attained in a specialised discipline.

The findings relating to the highest educational qualifications of respondents showed that many of them had bachelor's degrees, hence have

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competence and ability to appreciate decisions relating to the downstream healthcare supply chain. Concerning the type of health facility respondents worked, Table 3 showed that 145 responses constituting 70.7%, indicated clinics, while the remaining 60 respondents accounting for 29.3%, represented hospitals. This finding implies that clinics dominated the majority of health facilities studied. It is instructive to note that the type of healthcare facility in the study's sample measured the size of the hospital and acted in the model as a control variable.

Descriptive Statistics of Constructs

Even though normal distributed data is not a prerequisite for analysis with PLS-SEM, the nonexistence of collinearity and extreme outliers are preconditions that must be met (Hair et al., 2018). In general, PLS-SEM does not assume random data distribution. Bootstrapping with non-normal data, in the view of Hair et al., can bring about distributions that are peaked and skewed bootstrap. In furtherance of this, evaluating data distribution before utilising inferential statistics is essential. Besides, the extent to which data deviates from normalcy becomes obvious when two distribution measures are examined for skewness and kurtosis. Smart PLS typically calculates the mean, standard deviation, skewness and kurtosis when data is entered into it. Basically, normally distributed data has both skewness and kurtosis as zero.

The data did not vary significantly from a normal distribution, and this is typical of nearly all primary data-based surveys in social sciences (Zhao et al., 2010). Table 4 illustrated the values of the mean (M), standard deviation (SD), skewness, and kurtosis (K). It could be inferred from Table 4 that the mean values for the model constructs are greater than 3.0, which denotes a

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higher-rated mean score. The variables' standard deviations are ISOCOE 0. 884, ISOMIM 0. 79443, ISONOR 0. 78501, ECOPP 0.71097, DHSCP 0.74774, FLEXOR 0.85865, and ISOMOPHIC 0.70016. These standard deviations imply that data points were clustered closely around the mean values of the individual constructs, indicating their high value. A skewness statistic of -0.675 was observed for ISOCOE and 1.58 kurtosis, ISOMIM had a skewness statistic of -0.604 and a kurtosis of.051.

Regarding ISONOR, it had a skewness statistic of -0.419 and a kurtosis of 0.175, ECOPP had a skewness statistic of -0.705 and 0.175, DHSCP had a -1.520. These results demonstrated that the data had not deviated considerably from a normal distribution, which is common with most primary data-based surveys in social sciences (Zhao et al., 2010).

Table 4: Descriptive Statistics of Constructs

Constructs	Min	Max	Mean	Std. Dev	Skewness	Kurtosis
ISOCOE	1	5	3.44	.884	-.675	.158
ISOMIM	1.00	5.00	3.58	.794	-.604	-.051
ISONOR	1.67	4.83	3.61	.785	-.419	-.625
ECOPP	1.69	5.00	3.75	.711	-.705	.175
DHSCP	1.14	5.00	3.83	.748	-1.520	3.337
FLEXOR	1.00	5.00	4.08	.859	-1.421	2.138
ISOMORPHIC	1.28	4.72	3.55	.700	-.452	-.092

Source: Field Survey (2023).

Note: ECOPP means = Eco-procurement practices, DHSCP = Downstream healthcare supply chain performance, ISOCOE= Isomorphic-Coercive Factors, ISOMIM = Isomorphic-Mimetic Factors, ISONOR Isomorphic-Normative Factors, FLEXOR =Flexible orientation.

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Model Specification

The model must be defined before the PLS-SEM analysis can be done. Hair et al. (2021) proposed two steps for determining the model - the definition of the measurement model and the structural model. The measurement model describes the relationship among constructs and their indicators or measures that go with them, while the structural model indicates the hypothesised relationships between constructs (Hair et al., 2021). Given the above assertion, the survey vividly described the measurement and structural models in the proceeding sections of the study.

Measurement and Structural Model Specification

The measuring model relates to the indicators used to assess each construct. Fifty-two indicators were utilised in this model to determine the eight constructs (coercive factors, normative factors, mimetic factors, eco-sourcing, eco-purchasing, reverse logistics, downstream healthcare supply chain performance and flexible orientation) under consideration. Little rectangles represent these indicators in Figure 2. Hence, the survey specifies the measurement model; to measure the construct coercive factors; an essential structural dimension of isomorphic factors, the adopted scale was itemised as ISO-CoeFac1, ISO-CoeFac 2, ISO-CoeFac 3, …, and ISO-CoeFac 6.

Normative factors: This construct also constitutes a critical structural dimension of isomorphic factors in the institutionalised business setting. The construct was also measured with six (6) indicators and was itemised as *ISO-NorFac 1, ISO-NorFac 2, ISO-NorFac 3…, ISO-NorFac 6*. Mimetic factors are the last dimension of isomorphic factors considered in this survey. Mimetic factors were also measured with six (6) indicators similar to normative and

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coercive pressures. The adopted and empirically validated scales of mimetic pressures were itemised as *ISO-MimFac 1, ISO-MimFac 2, ISO-MimFac 3,…,* and *ISO-MimFac 6.* The construct eco-procurement practices were operationalised in this survey as policies and green initiatives integrated into the procurement process of goods, products, and services to enable better environmental performance throughout their life cycle in the supply chain compared to products or services that serve similar functionality.

The construct, eco-procurement practices was measured by three sub-dimensions: eco-sourcing, eco-purchasing, and reverse logistics. Specifically, eco-sourcing was measured with five (5) empirically validated indicators. The construct was itemised as *ECOPP_SOU1, ECOPP_SOU2, ECOPP_SOU3,…,* and *ECOPP_SOU5.* Eco-purchasing was measured with five indicators and enumerated as *ECOPP_PUR1, ECOPP_PUR2, ECOPP_PUR3….,* and *ECOPP_PUR5.* Finally, the last dimension of eco-procurement practices is reverse logistics, and it was validated with six (6) indicators and itemised as *ECOPP_REVLOG 1, ECOPP_REVLOG 2, ECOPP_REVLOG 3,...,* and *ECOPP_REVLOG 6.*

The construct which acts as an endogenous variable to the isomorphic factors and eco-procurement practices was DHSCP and operationalised as effective and efficient resource deployment in clinical care and supporting processes to make hospital's supply chain respond quickly to the needs of their patients. It was measured with fourteen (14) validated questions, itemised as DHSCP *1,* DHSCP *2,* DHSCP *3,…,* DHSCP *14.* Lastly, flexible orientation was viewed as the moderator variable and, as such, was measured with four (4) indicators from empirically validated studies and operationalised in the model

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as *FO1, FO2, FO3, and FO4*. The study's structural model has two exogenous constructs, each having three sub-dimensions and one endogenous construct with a moderator variable. The study's exogenous constructs comprise isomorphic factors (coercive, normative, and mimetic) and eco-procurement practices (eco-sourcing, eco- purchasing and reverse logistics).

This survey's endogenous construct is downstream healthcare supply chain performance (DHSCP), and the moderator variable is flexibility orientation culture. The study's exogenous and endogenous variables are represented by thick blue circles shown in Figure 2. Therefore, the study empirically tests the survey's hypotheses using SmartPLS version 4.

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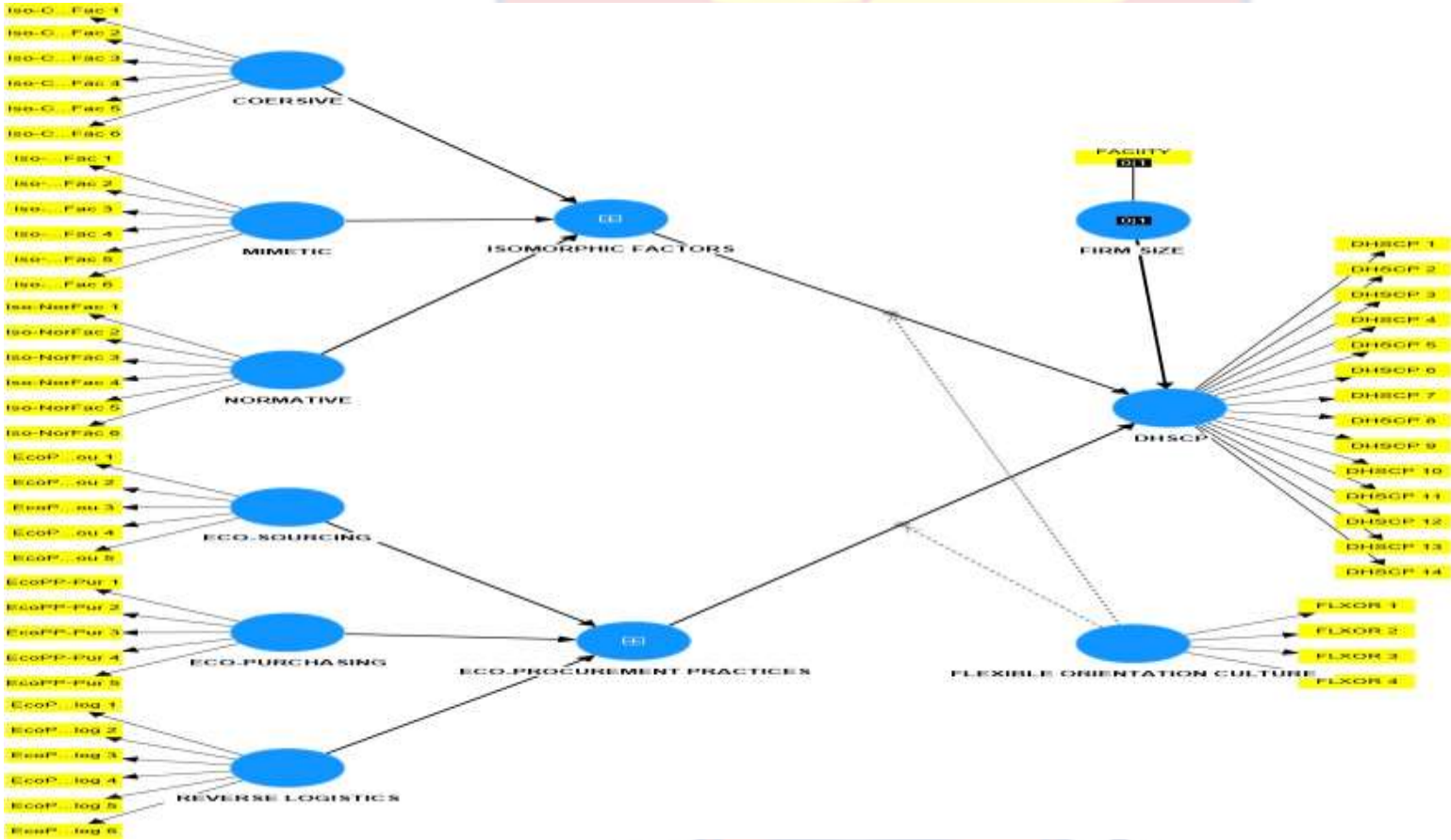

Figure 2: Model Specification

Source: Field survey (2023).

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Reflective Measurement Model Evaluation

The statistical method used to estimate the model to provide a causal description of isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance was PLS-SEM. A reflective measurement model evaluates the nexuses among the indicators and their measurement models (constructs) and between the latent constructs (Hair et al., 2014b, 2017a). Thus, the indicators of a reflective model are well-connected to each construct via loadings and indicate bivariate relationships among the indicator and the construct. The reflective measurement model aimed at ensuring the construct measures' reliability and validity to authenticate the appropriateness of their presence in the path model (Hair et al., 2014a). The factor loadings, indicator and construct reliability, convergent and discriminant validity, and collinearity are the criteria employed to evaluate the psychometric characteristics of the scales.

Indicator Factor Loadings

Indicator factor loadings illustrate how each indicator and/or item effectively describes the central construct within the study's context. Analysis of the indicator loadings of the reflectively measured latent construct is the first stage of determining the indicators' quality in the study. Hair et al. (2081) recommended that factor loadings be at least 0.70 and higher. Similarly, Hair et al. (2021) suggested a minimum desired threshold of 0.708 for an indicator factor loading. Therefore, for an item loading to be considered an acceptable measure of the quality of its latent construct, it must be higher than the 0.708 threshold. Items loading less than 0.708 were deleted from the model. Three items were dropped from coercive, mimetic and normative indicators, one item

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was dropped from the eco-sourcing indicator, two items were dropped from eco-purchasing, and one item was dropped from reverse logistics.

Similarly, eight items were dropped from downstream healthcare supply chain performance. The final model after deleting the loadings below the recommended threshold of 0.708 is presented in Figure 3.

Figure 3: Indicator Factor Loadings.

Source: Field survey (2023).

Reliability Analysis

The constructs' reliability and internal consistency were assessed after the factor loadings (Hair et al. 2014a). Reliability analysis is crucial in ascertaining the steadiness and consistency of instruments alongside the concepts being measured (Sekaran, 2003). The reliability was assessed using

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the composite reliability, Cronbach alpha and the Rho_A. In order to ensure that there is no issue with construct reliability, composite reliability must be greater or equal to 0.70. Similarly, Cronbach alpha and Rho_A values must be greater than 0.70 to ensure that the constructs are valid. The findings presented in Table 5 show that Cronbach alpha, composite reliability and Rho_A are more significant than 0.70. The Cronbach alpha values range from 0.726 to 0.952, composite reliability values range from 0.798 to 0.964, and Rho_A values range from 0.738 to 0.929, hence construct reliability has been achieved.

Table 5: Reliability Analysis

Items	Loadings	Cronbach's alpha	rho_A	Composite reliability
Downstream healthcare supply chain performance		**0.842**	**0.843**	**0.883**
DHSCP 1	0.712			
DHSCP 2	0.721			
DHSCP 3	0.746			
DHSCP 4	0.788			
DHSCP 5	0.777			
DHSCP 6	0.737			
Flexible orientation		**0.952**	**0.929**	**0.964**
FO1	0.916			
FO2	0.945			
FO3	0.928			
FO4	0.941			
Eco-purchasing		**0.795**	**0.709**	**0.832**
EcoPP-PP2	0.872			
EcoPP-PP3	0.786			
EcoPP-PP6	0.705			
Reverse Logistics		**0.810**	**0.812**	**0.868**

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EcoPP-Revlog 2	0.714			
EcoPP-Revlog 3	0.804			
EcoPP-Revlog 4	0.721			
EcoPP-Revlog 5	0.775			
EcoPP-Revlog 6	0.755			
Eco-sourcing		**0.738**	**0.740**	**0.835**
EcoPP-Sou 2	0.718			
EcoPP-Sou 3	0.757			
EcoPP-Sou 4	0.757			
EcoPP-Sou 5	0.756			
Coercive		**0.786**	**0.786**	**0.826**
Iso-CoeFac 2	0.768			
Iso-CoeFac 4	0.784			
Iso-CoeFac 5	0.797			
Mimetic		**0.736**	**0.749**	**0.850**
Iso-MimFac 4	0.813			
Iso-MimFac 5	0.869			
Iso-MimFac 6	0.741			
Normative		**0.726**	**0.738**	**0.798**
Iso-NorFac 1	0.792			
Iso-NorFac 2	0.761			
Iso-NorFac 3	0.706			

Source: Field Survey (2023).

Convergent Validity

Convergent validity indicates the extent to which a measure correlates well with other measures of the same construct (Hair et al., 2016). Hair *et al.* (2021) proposed a minimum extracted average variance (AVE) of 0.5 to demonstrate convergent validity. It is instructive to state that if the AVE value is 0.50 or higher, it signifies that more than half the variance of its indicators is explained by the construct on average. On the other hand, if the AVE is less than 0.50, it means that more errors in the items remained on average than the

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variance in the constructs explained (Hair et al., 2018). The result presented in Table 6 shows that all the AVE values are greater than 0.50, indicating no problem with convergent validity (that means convergent validity has been established). The AVE values presented in Table 6 ranged from 0.558 to 0.870.

Table 6: Average Variance Extracted (AVE)

Items	AVE
Downstream health supply chain performance	0.558
Flexible orientation	0.870
Eco-purchasing	0.625
Reverse logistics	0.569
Eco-sourcing	0.558
Coercive	0.613
Mimetic	0.655
Normative	0.569

Source: Field Survey (2023)

Discriminant Validity

Discriminant validity concerns the extent to which a construct actually differs from other constructs illustrated by the constructs in the model (Hair et al., 2016). Therefore, determining discriminant validity indicates that a construct is distinct and explains phenomena not covered by other constructs in the model (Hair et al.). Basically, Heterotrait-Monotrait (HTMT) ratio was used to test discriminant validity in the study. Compared to Fornell and Larcker's (1981) criterion (Hair et al., 2014a), the HTMT ratio is considered a superior and higher quality for assessing discriminant validity. For this reason, Sarstedt et al. (2016) propose it for measuring discriminant validity. Henseler et al.

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(2016) suggest that the HTMT score must fall within the confidence interval of -1 and 1 in order to establish discriminant validity.

However, the threshold Hair et al. (2021) suggested for HTMT correlation values is 0.90. Henseler et al. (2016) indicate that when the constructs are alike, the correlation between and among every construct should be less than 0.90. The result presented in Table 7 shows that all HTMT correlation values are within the 0.90 threshold. The implication is that there is no discriminant validity issue in this study. The following section evaluates the structural model after meeting the basic criteria for assessing the measurement model in the preceding section.

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Table 7: HTMT Correlation

Constructs	1	2	3	4	5	6	7	8	9	10
Coercive (1)										
DHSCP (2)	0.547									
Eco-Purchasing (3)	0.550	0.755								
Eco-Sourcing (4)	0.535	0.661	0.786							
Flexible Orientation (5)	0.280	0.089	0.161	0.073						
Mimetic (6)	0.502	0.578	0.517	0.491	0.183					
Normative (7)	0.747	0.583	0.610	0.568	0.141	0.732				
Reverse Logistics (8)	0.438	0.719	0.749	0.687	0.054	0.365	0.582			
Flexible Orientation X Eco-Procurement Practices (9)	0.079	0.158	0.070	0.099	0.036	0.086	0.046	0.079		
Flexible Orientation X Isomorphic Factors (10)	0.191	0.057	0.065	0.055	0.339	0.107	0.171	0.115	0.458	

Source: Field Survey (2023).

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Evaluation of the Structural Model

The study's hypotheses were tested after satisfying the construct and indicator reliability conditions together with convergent and discriminant validity. The structural model analysis aims to predict the output layer data using the input layer data (Janadari et al., 2016). Thus, the structural model depicts one or more dependent linkages connecting the construct of the hypothesised model. Hair et al. (2014) suggested that the assessment procedure for the structural model should be a five-step process. The performance of this task was fulfilled by evaluating the structural model for issues with multicollinearity among the constructs using variance inflation factor (VIF), examining the direction and strength of the path using the coefficient (β), assessing the coefficient of determination (R^2), the effect size (f^2), and the predictive relevance (Q^2) to determine the model's predictive power. Also, using 5,000 bootstrapping with significance level, p-values were determined.

Hair et al. (2014a) proposed that the T-statistics must be greater than 1.96, and the p-values must be less than 0.05 for the hypothesis to be statistically significant. The coefficient of determination shows a model's prediction accuracy and collective significance, typically abbreviated as R^2. Determining the standard path coefficient and the predictive ability of a model in each relationship indicates how much the exogenous variables are theoretically related to explaining the variation in the endogenous variable. The R^2 coefficient ranges from 0 to 1, with higher values denoting higher predictive accuracy. The importance of R^2 reveals the construct's variance level, which is accounted for by the model. The amount of

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variance accounted for by the exogenous constructs in their corresponding endogenous construct is depicted by R^2 (Chin, 1998), which shows the model variables' quality (Hair et al., 2017a).

The adjusted R^2 is a suggested metric for model assessment since it explains the model's complexity by controlling the number of predictors. This is very helpful when contrasting several models. It is worth noting that the R^2 value tends to increase with the number of predictors, which further emphasises the importance of using the adjusted R^2. Effect size allows for assessing the strength of correlations between latent variables (Wong, 2013). The effect size (f^2) relates to the modification in R^2 resulting from removing an exogenous variable from the model. With the threshold of Small (0.0 < effect size < 0.15), Medium (0.15 < effect size < 0.35), and Large (effect size > 0.35). The effect size (f^2) evaluation helps determine whether exogenous variables significantly influence endogenous variables.

After the computation of the effect size (f^2), the study's model predictive relevance (Q^2) is assessed in line with the nonparametric test espoused by Stone-Geisser to examine the model's predictive capability (Geisser, 1975; Stone, 1974). Shmueli et al. (2016) recommended that the predictive ability of variables should be measured with the Q^2 measure. Essentially, Q^2 values that fall within the range of 0 to 0.25, greater than 0.25 to 0.50, and greater than 0.50 are categorised as weak, moderate, and strong.

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Multicollinearity Test

According to Hair et al. (2014b), collinearity diagnostic must be first examined to ensure there is no bias in the path coefficients and minimise any substantial levels of collinearity among the predictor constructs. The outcomes of the VIF from Table 8 show that the paths are below the threshold of 5, as Hair et al. suggested. The VIF results shown in Table 8 indicate that the respective paths are devoid of multicollinearity, and the maximum VIF is 1.728, below the recommended threshold of 5 proposed by Hair et al.

Table 8: Multicollinearity Statistics

Items	DHSCP	Eco-Procurement Practices	Isomorphic Factors
Coercive			1.397
DHSCP			
Eco-Procurement Practices	1.534		
Eco-Purchasing		1.728	
Eco-Sourcing		1.695	
Flexible Orientation	1.175		
Isomorphic Factors	1.608		
Mimetic			1.371
Normative			1.613
Reverse Logistics		1.670	
Flexible Orientation X Eco-Procurement Practices	1.313		
Flexible Orientation X Isomorphic Factors	1.491		

Source: Field Survey (2023).

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The p-values only establish whether there is an effect among a set of constructs (Sullivan & Feinn, 2012). Advances in analytical techniques such as PLS-SEM enable further investigation of models' explanatory and predictive ability. The precondition to determine a model's predictive relevance is essential to analyse both in-sample and out-of-sample predictions. The whole data set is used for in-sample prediction to approximate a model before utilising these approximates to make projections of observations out of the same data set. The coefficient of determination (R^2) and effect size (f^2) are the two main statistical procedures for making such predictions. These tests assessed the model's explanatory power. The R^2 and f^2 are illustrated in Table 9 and Table 10, respectively.

Table 9: R squared

Construct	R-square (R^2)	R Square Adjusted
DHSCP	0.609	0.597

Source: Field survey, (2023).

The coefficient of determination (R^2) measures a model's predictive accuracy and combined significance. Thus, R^2 captures the exogenous variables' collective effect on the endogenous variable (Hair et al., 2014b). The R^2 shows the amount of endogenous variable's (DHSCP in this study) variance collectively explained by the exogenous constructs (isomorphic factors and eco-procurement practices in this study), which is linked theoretically. This effect ranges from zero to one, and high predictive accuracy is denoted by higher values (Hair et al.).

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Nevertheless, the general rule of thumb about acceptable R^2 values indicating the various levels of contributions of the exogenous variables to the endogenous variable are weak (0.25), moderate (0.50), and substantial (0.75) (Hair et al., 2016; Henseler et al., 2016).

The R^2 values increase with several predictors; hence, adjusted R^2 is proposed since the model's complexity is controlled, making it useful when models are being compared. The R^2 adjusted value for DHSCP in Table 9 is 0.597. This implies that 59.7% of the variance of isomorphic factors and eco-procurement practices collectively explained 59.7% of the variance in DHSCP.

Table 10: F-square

	Isomorphic factors	**Eco-procurement practices**	**Flexible orientation**
Downstream healthcare supply chain performance (DHSCP)	0.161**	0.523***	0.001*

Source: Field survey, (2023)
*0.02≤ f^2≤ 0.15 is a weak effect, **0.15≤ f^2≤ 0.35 is a moderate effect *** $f^2 \geq 0.35$ shows a strong effect.

A structural model's variable can be influenced and/or affected by various variables. For instance, removing the exogenous variables can influence the endogenous variable. The f^2 in Table 10 indicates the difference in R^2 caused by

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removing exogenous variables from the model. Cohen's (1988) f^2 impact criterion has been computed to determine the effect size of the exogenous variables. Using Cohen's suggested threshold to illustrate that the removal of the exogenous variables of isomorphic factors and eco-procurement practices will have a small or weak effect on the R^2 value for the endogenous value of downstream healthcare supply chain performance (DHSCP) (0.001). Thus, Small (0.02 < effect size < 0.15), Medium (0.15 < effect size < 0.35), and Large (effect size > 0.35). Similarly, removing the exogenous variable of isomorphic pressures will have a moderate effect on the R^2 value for the endogenous value of DHSCP (0.161).

Again, removing the exogenous variable of eco-procurement practices from the model will primarily or substantially affect the R^2 value for the endogenous value of DHSCP (0.523). Therefore, the difference between $R^2_{included}$ and $R^2_{excluded}$ will be high if the exogenous variable(s) makes a solid contribution to explain an endogenous variable; then, a high f^2 value will be produced (Hair et al., 2014b). Many cases may exist outside the sample used to estimate the model, much as R^2 and f^2 have been calculated from a sample. It is important to state that it is not only the sample used for estimating the model, but a greater number of cases are also not contained within the sample. The explanatory power does not infer predictive capacity because of the study's increased generalisability and the practical benefits of policy recommendations.

The emergence of using new data for computing Q^2 has recently led to increased demands for predictive capability. The blindfolding process was employed to determine the Q^2 via the estimated results from the variable score to

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derive the cross-validated redundancy score from them (Stone, 1974; Geisser, 1974). The cross-validated result extracted indicates the endogenous construct's predictability as well as the model quality. The model's prediction accuracy increases when the difference between predicted and original values is smaller, and the better the Q^2. (Hair et al., 2021). Furthermore, Hair et al. postulated that the model's predictive relevance is seen when Q^2 predict values are greater than zero; hence the study's model is relevant. Specifically, a Q^2 value that is more than zero for an individual endogenous variable is an indication of the predictive relevance of the path model for that particular construct.

Although comparing the Q^2 value to zero indicates if prediction of an endogenous variable, if possible, it must be noted that this comparison says virtually nothing about the quality of the prediction (Sarstedt et al., 2016). Based on the Q^2 values in Table 11, the model has a moderate level of predictive relevance. Therefore, isomorphic factors and eco-procurement practices collectively have a reasonable ability to predict the downstream healthcare supply chain performance.

Table 11: Predictive Relevance

	Q^2predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
DHSCP	0.576	0.655	0.505	0.662	0.508

Source: Field survey, (2023).

*0.02≤ Q^2≤ 0.15 weak effect, **0.15≤ Q^2≤ 0.35 moderate effect, *** Q^2≥0.35 strong effect.

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The structural model in Figure 4 shows the final model where the influence of isomorphic factors (coercive, mimetic, and normative) and eco-procurement practices (eco-sourcing, eco-purchasing, and reverse logistics) on downstream healthcare supply chain performance (DHSCP) is illustrated via path relationships. Every path in the model was hypothesised in line with a review of a relevant corpus of literature. Table 12 presents the results from the hypotheses tests indicating each direct effect path coefficient and their respective scores to determine whether significant effects exist among these relationships. The significance of the path coefficients, including the direction of every relationship, was established by a bootstrapping procedure in SmartPLS 4 software, as suggested by (Hair et al., 2021). Generally, path coefficients describe each exogenous variable's effect on the endogenous variable(s).

For the most part, the variance-based PLS-SEM method primarily uses the resampling with replacement and/or bootstrapping procedure to estimate the path coefficients and the corresponding standard errors (Awang et al., 2015). It could be observed from Figure 4 that isomorphic factors and eco-procurement practices influence downstream healthcare supply chain performance.

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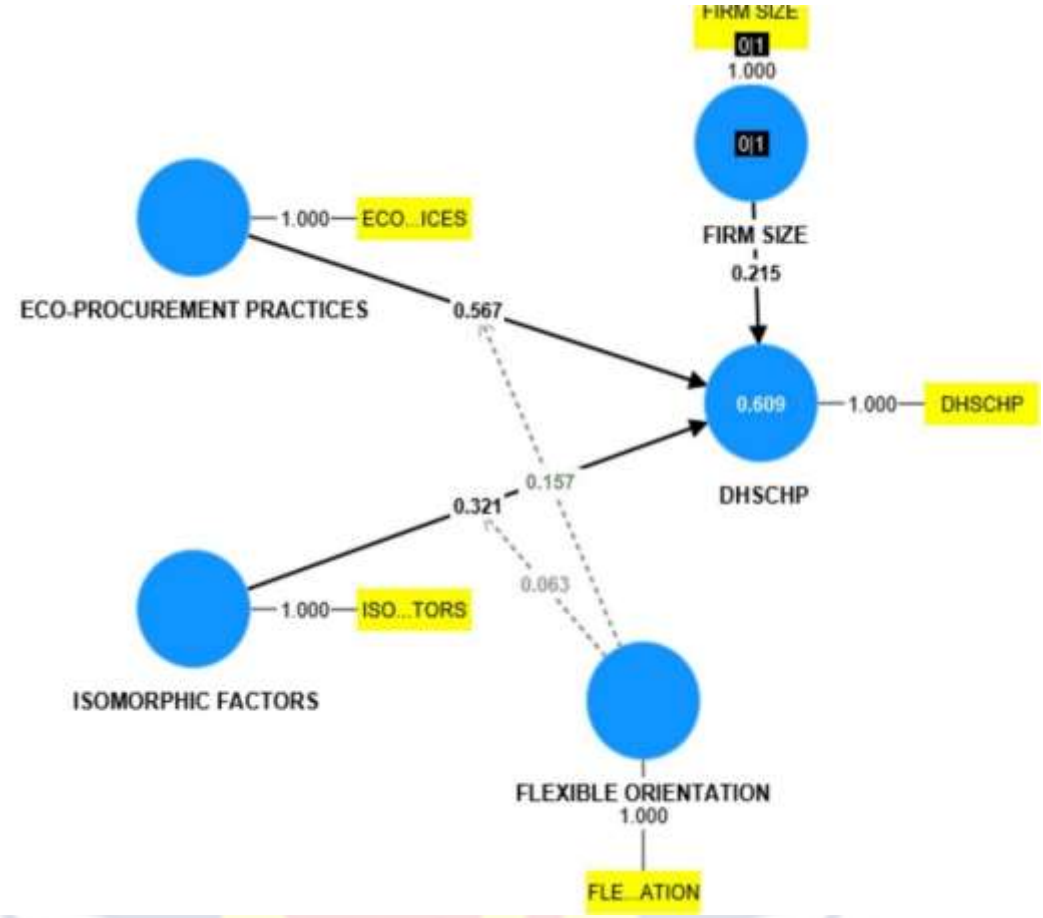

Figure 4: Final model

Source: Field survey, (2023).

Assessment of path relationships

The study was guided by three specific objectives and four main hypotheses, namely, the influence of isomorphic factors on the downstream healthcare supply chain performance, the effect of eco-procurement practices on downstream healthcare supply chain performance, the effects of flexibility orientation on the relationship between isomorphic factors and downstream healthcare supply chain performance, effects of flexibility orientation on the relationship between eco-procurement practices and downstream healthcare supply

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chain performance. The hypotheses test results were further discussed in relation to institutional isomorphism and resource dependency theories on which the study was grounded. The results of the PLS-SEM test on the four hypotheses concerning the study's objectives are presented in Table 12. Results of the specific direct effects were examined using path coefficients, p-values, and T-tests.

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Table 12: Assessment of Path Coefficients and Significance Level

Structural Relationships	(β)	STDEV	T Statistics	P-values	Decision
H1: Isomorphic Factors -> DHSCP	0.321	0.074	4.359	0.000	Supported
H1a: Coercive Factors -> DHSCP	0.177	0.075	2.373	0.018	Supported
H1b: Mimetic Factors -> DHSCP	0.201	0.062	3.245	0.001	Supported
H1c: Normative Factors -> DHSCP	0.083	0.064	1.307	0.191	Unsupported
H2: Eco-Procurement Practices -> DHSCP	0.567	0.072	7.862	0.000	Supported
H2a: Eco-Sourcing -> DHSCP	0.112	0.071	1.583	0.113	Unsupported
H2b: Eco-Purchasing -> DHSCP	0.141	0.065	2.177	0.030	Supported
H2c: Reverse Logistics -> DHSCP	0.315	0.072	4.376	0.000	Supported
H3: Flexible Orientation X Isomorphic Factors -> DHSCP	0.063	0.056	1.125	0.261	Unsupported
H4: Flexible Orientation X Eco-Procurement Practices -> DHSCP	0.157	0.068	2.315	0.021	Supported

Note: * = t > 1.96; p< 0.05

Source: Field Survey (2023).

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Preliminary analysis and the final model in Figure 4 revealed that firm size (control variable) has no significant influence on the dependent variable in the relationship established in the study. This shows that firm size, for example, the type of healthcare facility does not play a critical role in influencing the relationships' results. Consequently, none of the linkages established are influenced by a firm's size. For this reason, further analysis in this study excluded firm size since it does not influence any of the links established. Besides, it does not constitute the study's research hypotheses. The study's hypotheses were subsequently tested regarding the T-statistics as advised by several researchers (Henseler et al., 2016; Hair et al., 2021; Ringle et al., 2015). Specifically, these researchers recommended explicitly that hypothesised link is significant when the scores of t-statistics are more than 1.96 agreeing with p-values lower than 0.05 and vice versa.

Hair et al. further emphasised that the t-statistics scores should be >1.96 and equivalent to p=0.05 for any significant relationship to exist among the study's variables under consideration. In other words, the underlying rule on which decisions regarding the directional hypothesis illustrated in Table 12 of the study are supported is when its t-statistics is >1.96, implying that the nexus among the study's variables is significant. On the contrary, a directional hypothesis is unsupported or rejected if no significant link exists between the variables, thus if the t-statistics of the model is less than 1.96 (t-stat is <1.96). The results from specific direct effect path coefficient hypotheses testing are reported in Table 12 and then discussed. A critical observation of Table 12 showed the path coefficient of the hypothesised relationship between isomorphic factors and DHSCP as well as the relationship between eco-

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procurement practices (eco-sourcing, eco-purchasing, and reverse logistics) on DHSCP.

A detailed assessment of the hypothesised relationship revealed that isomorphic factors significantly and positively influence DHSCP ($\beta = 0.321$, $t= 4.359$, $p = 0.000<0.05$) and was supported at a significance level of five percent. Moreover, the hypotheses further showed that eco-procurement practices have a strong and statistically significant positive effect on DHSCP ($\beta = 0.567$, $t= 7.862$, and $p = 0.000<0.05$) and were supported at a significant level of five percent. Flexible orientation as a moderating factor in the relationship between eco-procurement practices and DHSCP was stronger at a five percent significant level. In particular, the hypotheses suggesting a direct effect of flexible orientation will be stronger when the moderating factor is high in the relationship, significantly moderating the relationship between eco-procurement practices and DHSCP ($\beta = 0.157$, $t= 2.315$, $p = 0.021<0.05$), hence was supported.

On the other hand, flexible orientation as a moderating factor in the relationship between isomorphic factors and DHSCP was not supported at a conventional significant level of five percent since the moderating effect was not high to make the relationship stronger as the T-stats value is less than 1.96 and the p–value greater than 0.05. Thus, the results indicated $\beta = 0.063$, $t= 1.125$, and $p = 0.261>0.05$ for the hypothesis proposing that the effect of flexible orientation will be stronger when the moderating factor is high in the relationship between isomorphic factors and DHSCP. It could be noticed that the regression coefficients in Table 12 show that eco-procurement practices explained a 56.7 percent variance in DHSCP. Isomorphic factors, however,

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contributed a relatively lower percentage of about 32.1 percent of the variance in DHSCP. Therefore, it is evident from the model that eco-procurement practices significantly influence DHSCP, hence the main predictor of DHSCP.

Discussion on Research Hypotheses and Objectives

The study aimed to investigate the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance [DHSCP] of private-for-profit healthcare facilities in the Greater Accra Region [GAR] with flexibility orientation culture playing the moderating role. The study's general objective was guided by four main objectives, from which four main hypotheses with six sub-dimension hypotheses were derived. The discussions of these objectives of the research including the study's findings presented above, its implications and validations are covered under this section of the chapter.

Influence of Isomorphic Factors on DHSCP

The study's first research objective sought to ascertain the influence of isomorphic factors on DHSCP. In furtherance of this, a hypothesis was developed and tested to determine whether isomorphic factors significantly influence DHSCP. It was realised from the result that isomorphic factors have a strong positive and statistically significant influence on DHSCP with β = 0.321, T-stat =4.359, P=0.000. The result of hypothesis one (H_1) revealed a significant positive relationship because the t-stat value was greater than the threshold of 1.96, and the p-value was also less than 0.05, the least threshold scores proposed by Hair et al. (2014a) and Henseler et al. (2016) for either rejecting or failing to reject a hypothesis. The study's finding indicates a direct relationship between isomorphic factors and DHSCP.

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The finding reveals that a percentage increase in isomorphic factors will enhance DHSCP by 32.1 percent (32.1%). That is to say that a one-unit increase in isomorphic factors is associated with a 0.321-unit increase in DHSCP. Also, the findings showed a moderate effect size between isomorphic factors on DHSCP f^2=0.161. The implication is that as the level of isomorphic factors increases, the downstream healthcare supply chain [DHSC] performance in Ghana is likely to improve. Essentially, these findings highlight that isomorphic factors depending on their nature and context, play a crucial role in encouraging conformance in the downstream healthcare supply chain.

The results of this study support the institutional isomorphism theory's claim that firms may follow identical practices in response to institutional pressures, which states that isomorphic factors have an impact on the performance of the downstream healthcare supply chain. Accordingly, consideration must be given to these institutional factors' as possible and limiting factors while leveraging their positive aspects to enhance the performance of the downstream healthcare supply chain in the Ghanaian health sector. This result reinforced the institutional isomorphism theory, which stipulates that institutional requirements in the form of regulatory structures and professionalism affect managerial decisions and policies in the context of downstream healthcare supply chains in Ghana (DiMaggio & Powell, 1983). The findings demonstrate that the healthcare sector is under growing pressure to sustain its operations while considering human and environmental factors (Rezali et al., 2018).

Furthermore, the findings support several empirical works (Bansal and Bogner, 2002; Rogers et al., 2007; Harrison, 2008; Kauppi, 2013) who assert

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that isomorphic forces play a significant role in gaining insight into managers' behaviour, supply chain linkages and operations management respectively. Similarly, these findings corroborate Zailani et al. (2012) view that isomorphic factors outside the firm's environment influence performance directly and indirectly through its proactive internal ecological policy. Besides, the findings validate Delmas and Toffel's (2004) empirical studies, which postulate that a firm's decision to embrace either a coercive or a cooperative approach to green supply chain management is contingent upon isomorphic pressures that the buyer is subject to. Similarly, Wongthongchai and Saenchaiyathon (2019) concluded in a study in Thailand using an institutional isomorphism theory that green supply chain management practices significantly affect an organisation's performance. These empirical studies from these scholars affirm and support H_1, which states that there is a significant positive influence of isomorphic factors on the DHSCP.

H1a was developed from the first objective to test for the statistically significant level of coercive factors under the broad umbrella of Isomorphic factors on downstream healthcare supply chain performance (See Appendix C). Again, the result from the analysis showed that coercive factors have a significant positive effect on DHSCP. The minimum threshold scores a t-statistics value less than 1.96 and a p value of less 0.05, respectively were assessed. The path coefficient of $\beta = 0.177$, along with a t-statistics value of $t = 2.373$ and a significant value of $p<0.05$, suggest that coercive factors have a strong statistically significant positive effect on DHSCP.

This findings concord with the study of Liu et al. (2018) whose study on the "relationships between isomorphic pressures and carbon management

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imitation behaviour of firms" in China's energy-intensive industries. The findings revealed that coercive factors positively link a firm's behaviour to imitating a competitor's carbon management techniques. The study concludes that a firm's cost to copy a competitor's carbon management practices is relatively low. A similar empirical study on "green supply chain management approaches: drivers and performance implications" by Tachizawa et al. (2015) demonstrated that coercive and non-coercive drivers' impact on green supply chain management practices has unique consequences.

With a path coefficient of $\beta = 0.201$, along with a t-statistics value of $t = 2.245$ and a significant value of $p<0.05$ (0.001), Hypothesis 1b reported a significant positive influence of the presence of mimetic factors on downstream healthcare supply chain performance. This is an indication that mimetic factors account for 20.1% of changes in DHSCP. This finding aligns with previous research on the impact of mimetic factors in healthcare supply chains. In the study, Dobrzykowski (2019) established that mimetic behaviors have a significant impact on the dynamics of supply chains.

In addition, the research conducted by D'Andreamatteo et al. (2018) provided evidence that mimetic factors have a substantial impact on performance outcomes in healthcare supply chains. Other scholars have also investigated the positive correlation between mimetic factors and the performance of the healthcare supply chain downstream. Smith and Johnson (2020) discovered comparable outcomes in their examination of healthcare organizations, highlighting the significance of mimetic isomorphism in influencing supply chain structures.

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H1c which sought to analyse the normative factors of the broad isomorphic factors on downstream healthcare supply chain performance presented path coefficient of β = 0.083, along with a t-statistics value of t = 1.307 and a significant value of p>0.05 (0.191) (See Appendix C). Hypothesis 1c is reported to have an insignificant impact of normative factors on the downstream healthcare supply chain performance.

The insignificant influence of normative factors aligns with prior research in the field. Jones et al. (2017) conducted a thorough investigation on the factors that make healthcare supply chains similar and found that while imitation and coercion had important effects, conformity did not have a statistically significant influence on performance outcomes. In their study, Smith and Brown (2019) contended that normative factors, while existing in healthcare supply chains, may not exert significant influence on performance variations. Their conclusion suggests that the impact of normative isomorphism may be less significant compared to other factors like technological advancements and regulatory changes.

Effect of Eco-Procurement Practices on DHSCP

The study's second research objective examined the effect of eco-procurement practices on DHSCP. One hypothesis was developed from this objective and tested. The result from the analysis showed that eco-procurement practices have a significant positive effect on DHSCP. The minimum threshold scores for a hypothesis to be either rejected or failed to be rejected are a probability value, and a t-statistics value less than 0.05 and greater than 1.96, respectively. The path coefficient of β = 0.567, along with a t-statistics score of t = 7.862 and a significant value of p<0.05, suggest that eco-procurement

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practices have a strong statistically significant positive effect on DHSCP in the study context.

The results revealed a positive relationship because the t-statistics value was greater than 1.96, and the p-value was lower than 0.05. These findings of the study indicate a direct relationship between eco-procurement practices and DHSCP. This implies that a percentage increase in eco-procurement practices will improve DHSCP by 56.7%. The findings showed a large effect size (f^2=0.523) between eco-procurement practices and DHSCP. This means that an increase in eco-procurement practices (eco-sourcing, eco-purchasing, and reverse logistics) will enhance the performance of downstream healthcare supply chains. Moreover, the performance of the health sector in Ghana will be improved when healthcare facilities consider the environmental consequences when sourcing for suppliers to supply medical and pharmaceutical products.

Studies have demonstrated that eco-procurement practices, such as environmentally conscious sourcing and eco-purchasing, may increase operational effectiveness, cost savings, waste reduction, and supply chain performance in general (Sarkis et al., 2011). These findings, therefore, underscore the importance of implementing eco-procurement practices to minimise the healthcare sector's ecological footprint to enhance the performance of the healthcare supply chain in the country. The findings are in support and are consistent with the studies of Dubey et al. (2013) and Khan and Dong (2017), who postulate that sustainable business practices, including eco-procurement and performance, are related; as such, hypothesis 2 (H_2) was validated. Empirically, further findings from Khan and Dong (2017) showed a

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strong positive correlation between eco-friendly business practices and an organisation's financial health.

The findings buttressed the views of Reali et al. (2018) that green healthcare supply chain practices in the healthcare sector indirectly boost hospitals' competitive edge and profitability. The authors particularly emphasised that procurement, warehousing and medical waste disposal could promote the development of the healthcare sector and facilitate advancements through environmental practices. Other studies (Mandal, 2017; Tseng et al., 2020) in the healthcare supply industry in India and Vietnam respectively confirmed the study's findings when it was observed that hospital-supplier partnership directly and positively affects hospital supply chain performance. This requires hospitals' management to commit more resources to enhance their dynamic capabilities to discover any environmental changes to maintain collaborative partnerships with favourable performance outcomes.

The findings further support the empirical evidence of Liu et al. (2019) that eco-procurement practices enhanced ecological performance in the purchase of healthcare supplies. This enables the assessment of environmental concerns of medical and pharmaceutical products to mitigate negative ecological consequences during healthcare delivery at the respective healthcare facilities. However, Bio et al. (2016) study in the Ghanaian pharmaceutical supply chain found that minimal collaboration and coordination exist between producers and downstream industry participants in the supply chain regarding sustainable product packaging, although industry players adhere to general environmental criteria and expected packaging standards.

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Unlike Campos et al. (2017) observation that the implementation of reverse pharmaceutical logistics is motivated by its potential for profit apart from reducing ecological effects, Kumar (2020) maintained that the relevance of each dimension of value chain flexibility in green service production in healthcare is contingent on eco-procurement, green service practices, and innovation of green service design. This illustrates that private-for-profit healthcare institutions may embrace eco-procurement practices as sustainable practices become more common in their institutional setting to comply with these standards to show their dedication to attaining sustainable development goals [SDGs]. Similarly, eco-procurement practices can be viewed as a strategic approach by private-for-profit healthcare facilities to minimise their reliance on scarce or costly resources. Therefore, the H_2 was confirmed and verified based on the underlying empirical evidence, t-statistic criteria least p-value benchmark.

Again, the first hypothesis (H2a) formulated under eco-procurement practices investigated the impact pf eco-sourcing on downstream healthcare supply chain performance. With a path coefficient of $\beta = 0.112$, along with a t-statistics value of $t = 1.583$ and a significant value of $p>0.05$ (0.113), Hypothesis 2a (See Appendix C) reported an insignificant but positive influence of the presence of eco-sourcing practices on downstream healthcare supply chain performance. According to Howell (2012), the t-statistic measures how much a sample mean differs from the population mean, and its significance is crucial in determining if a difference is likely due to chance. Ruxton (2006) asserts that a significant amount of variation within groups can result in a t-statistic that is not statistically significant.

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This outcome may evoke studies that highlight the intricacy of evaluating the influence of sustainability practices on the performance of the supply chain, as pointed out by Carter and Rogers (2008), who contend that the connection can depend on multiple factors. Furthermore, studies investigating the impact of environmental practices on organisational performance in the context of sustainability have also found insignificant but positive relationships (e.g., Wu et al., 2015).

Hypothesis (H2b) (See Appendix C) specifically sought to assess the impact of eco-purchasing on downstream healthcare supply chain performance. With a Beta (β) value of 0.141, t value of 2.177 and p value less than 0.05 (0.030), these figures interpret the significant impact of eco purchasing on downstream healthcare supply chain performance.

This discovery supports previous research, such as the study conducted by Sarkis et al. (2011), which emphasises that environmentally-friendly purchasing can help improve the sustainability and efficiency of supply chains. The positive Beta coefficient signifies a direct and significant correlation between eco purchasing and downstream healthcare supply chain performance. This outcome aligns with the wider body of research on sustainable procurement, highlighting its capacity to have a positive influence on different aspects of supply chain management (Carter & Jennings, 2002).

Lastly, hypothesis 2c (H2c) (See Appendix C) posited a significant positive impact of reverse logistics on downstream healthcare supply chain performance. The structural path of the relationship was assessed. With a path coefficient of $\beta = 0.315$, along with a t-statistics value of $t = 4.376$ and a significant value of $p<0.05$ (0.000), Hypothesis 2c reported a significant and a

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positive influence of reverse logistics on downstream healthcare supply chain performance.

This finding supports the notion that incorporating environmentally friendly reverse logistics practices can greatly improve the overall performance of the supply chain in the healthcare industry. This aligns with the existing body of research that highlights the strategic significance of reverse logistics in promoting sustainability and efficiency in supply chains (Rogers & Tibben-Lembke, 2001). The statistical significance of the path coefficient enhances the empirical robustness of this positive impact, providing valuable insights for practitioners and scholars who are interested in the environmental aspects of healthcare supply chain management.

Flexibility Orientation Culture, Isomorphic Factors, and DHSCP

The third and research objective assessed the moderating effect of flexibility orientation culture on the relationship between isomorphic factors, and DHSCP. The following discussion is centred on the analysis and findings of the study about the extent to which flexibility orientation culture moderates the relationship between isomorphic factors, and DHSCP. The hypothesis is given below:

H3: Flexibility orientation culture positively moderates the relationship between isomorphic factors and the DHSCP when the moderating effect is high and stronger.

The study's research and results indicated that the effect of flexibility orientation is not strong enough to reach statistical significance in the relationship between isomorphic factors and DHSCP. Therefore, the study did not support the hypothesised moderating effect. The results from Table 12 did

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not support the hypothesis (**H3**) because the t-test score of 1.125 was lower than the 1.96 cutoff set by Hair et al. (2014b), and the probability value was higher than 0.05 with a value of 0.261. In hypothesis testing, a t-value greater than 1.96 for a two-tailed test at a 5% (0.05) significance level is commonly regarded as statistically significant. The non-significant results show that the moderating effect of flexible orientation culture may not strongly affect the relationship between isomorphic factors and supply chain performance in the context of the interaction between flexible orientation, isomorphic factors, and DHSCP.

This suggests that although a flexible orientation culture may benefit general organisational performance, it may not substantially affect the specific relation between isomorphic factors and DHSCP. However, it is worthwhile to investigate this further and consider additional moderating variables that can strengthen the relationship. The path coefficient of 0.063 represents the strength and direction of the relationship between the exogenous and endogenous variables. Since the coefficient is positive, it suggests a positive relationship between isomorphic factors and DHSCP. Notwithstanding, the magnitude of the coefficient is relatively small. The findings of H_3a align with the earlier observation of Liu et al. (2010) that the flexibility orientation culture may weaken the effect of isomorphic factors on DHSCP.

Also, the findings are in support of the views of (Dubey et al. (2017) and Dai et al. (2018) that flexible orientation culture plays a distinct role in the differential influence of isomorphic factors in shaping supply chain sustainability performance. The authors concluded that flexible orientation and external pressures could not influence supply chain sustainability performance alone since external forces are highly effective under the organisational

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structure. Meanwhile, El-Baz and Iddik's (2021) investigation found conflicting evidence about organisational culture; thus, it either facilitates or constrains management of the green supply chain and/or influences green supply chain management on performance. In summary, the results suggest that the hypothesised moderating factor does not have a statistically strong strengthening effect on the relationship between isomorphic factors and DHSCP.

The lack of a significant moderating effect for isomorphic factors and DHSCP, when viewed in the context of institutional isomorphism theory, suggests that the organisational culture's flexible orientation may not significantly influence the pressures to adhere to institutional norms and practices. For this reason, the hypothesis was rejected by the study's findings concerning hypothesis H_3a with a t-test value lower than 1.96 and a probability value greater than 0.05. That is, the study's findings do not validate H3.

H4: Flexibility orientation culture positively moderates the relationship between eco-procurement practices and the DHSCP when the moderating effect is high and stronger.

The fourth and final hypothesis (H4) is derived from research objective four which proposed that flexibility orientation culture positively moderates the relationship between eco-procurement practices and the DHSCP when the moderating effect is high and stronger. The result of H4 was supported in contrast to the preceding hypothesis because the p-values and t-statistics value indicated a relationship between eco-procurement practices and DHSCP with values lower than 0.05 and greater than 1.96, respectively. Specifically, the study's findings in Table 12 revealed that flexibility orientation culture is strong

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and significantly moderates the relationship between eco-procurement practices and DHSCP with beta = 0.157, t-test score = 2.315, and p-value = 0. 021.

The study's findings imply that a percentage increase in flexibility orientation will enhance the relationship between eco-procurement practices and DHSCP by 15.7%. This suggests that healthcare facilities at the downstream healthcare supply chain should consider flexible orientation culture and eco-procurement practices to improve performance. The findings also revealed a small and strong effect size between the interactive effect of flexibility orientation culture and eco-procurement practices, respectively, on DHSCP f^2=0.001 and 0.523. The findings conclude that flexibility-orientated culture positively moderates the relationship between eco-procurement practices and DHSCP; hence, combining these factors can positively influence supply chain performance.

Regarding these findings, healthcare facilities with a flexibility orientation culture are inclined to create distinctive practices due to heterogeneous requirements and expectations from each customer in the downstream supply chain for ecological sustainability practices instead of aligning organisational strategy with institutional isomorphic forces over time (Dai et al., 2018; Dubey et al., 2017; Hoejmose et al., 2014). Furthermore, Dai et al.'s. the assertion that healthcare facilities with highly flexible-oriented cultures are implausible to implement and adhere to one practice in terms of environmental sustainability practices over a period to improve their supply chain performance confirmed the study's observation. Similarly, the study's findings attest to the earlier study of Paulraj (2011) on the impact of an

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organisation's distinctive resources and/or competencies on sustainability performance.

The latter observed that a strategic procurement function alone could not contribute to achieving the ambitious goals of sustainability, hence the need to complement it with internal resources and/or capabilities to enhance performance. The study's findings are also consistent with earlier research by Dubey et al. (2019) that the moderating effects of flexible orientation culture on the relationship between big data analytics capabilities and collaborative performance is positive and significant. Nevertheless, Srivastava and Singh (2021) pointed out that improved integrated supply chain performance of hospital operations positively impacted care quality and patient-centeredness within the downstream supply chain. In summary, a flexible-oriented culture enables healthcare facilities to adapt to changing conditions, use their internal resources to work together effectively and drive innovation within the downstream healthcare supply chain to enhance performance. The results are, therefore, in line with the study's hypothesis.

Linking the findings to institutional isomorphism theory, the significant moderating effect for eco-procurement practices is an indication that the implementation and consolidation of environmentally sustainable procurement practices may be enhanced and more effective when supported by a flexible orientation culture within the healthcare facility. Moreover, the significant moderating effect of flexibility orientation culture on the relationship between eco-procurement practices and DHSCP, as seen from the perspective of resource dependency theory, highlights the importance of organisational culture as a resource in leveraging the benefits of eco-procurement. Also, the coefficient

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of determination was analysed, and the findings revealed that isomorphic factors and eco-procurement practices jointly explain 60.9% variation in DHSCP. Lastly, the predictive relevance was also examined. The statistical measures of Q_2_predict have verified the significance of the model, indicating that the effect of the independent variable on the dependent variable is not zero. The model's estimated predictive relevance for the endogenous variable is deemed satisfactory as the Q_2_predict statistics exceeds zero (Wong, 2016). According to the data presented in Table 8, the Q_2 score for predicting the value of the dependent variable is 0.576. According to the findings shown in Table 11, the estimated model has predictive relevance for the estimated constructs.

Chapter Summary

This chapter employed the PLS-SEM analysis reporting format to present the results and the discussions according to the research objectives and hypotheses. The demographic profile of respondents was introduced first and then followed by the measurement and the structural model. The findings showed that isomorphic factors and eco-procurement practices positively and significantly influence the performance of the downstream healthcare supply chain. Another observation of the results proved that the relationship among flexible orientation, eco-procurement practices, and DHSCP is relatively strong, suggesting that combining these factors can positively impact supply chain performance. However, hypothesis three from the third objective proved that flexibility orientation could only moderate the relationship between isomorphic factors and downstream healthcare supply chain performance by chance but not statistically. The summary, conclusions, and recommendations are discussed in the subsequent chapter.

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CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The summary of the study's findings, conclusions, and recommendations are presented in this chapter. A summary of the findings is provided first, and then conclusions are drawn based on the findings. Recommendations to guide policy directions and suggestions for further study concluded the chapter.

Summary

The study's purpose is to examine the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance [DHSCP] of private-for-profit healthcare facilities in the Greater Accra Region [GAR] with flexibility orientation culture playing the moderating role. The study specifically sought to:

1. Ascertain the influence of isomorphic factors on DHSCP
2. Examine the effect of eco-procurement practices on DHSCP.
3. Assess the moderating effects of flexibility orientation culture on the relationship between isomorphic factors and DHSCP.
4. Assess the moderating effects of flexibility orientation culture on the relationship between eco-procurement practices and DHSCP.

Ten hypotheses based on the research objectives were developed and subsequently tested using a quantitative approach and explanatory research design to validate them. A simple random sampling technique was employed to gather data from 231 healthcare facilities from the downstream supply chain within the Greater Accra Region [GAR] and registered with Health Facilities Regulatory Agency [HeFRA]. The study's target population consists of clinics

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and primary hospitals. A valid data set of 205 was derived from the completed structured questionnaires after the field survey, which achieved 84.36% response rate. The primary data gathered from the field survey was initially processed and cleaned with IBM SPSS version 26 before exporting it in a comma-separated values file to PLS-SEM for robust analysis. The results generated from further investigation with the PLS-SEM were thoroughly discussed in the preceding chapter. The study's key findings are summarised according to the research objectives below.

The first research objective investigated the influence of isomorphic factors on DHSCP. The study's finding revealed a significant and positive effect of isomorphic factors on DHSCP. This finding was consistent with related studies that demonstrated that as the level of isomorphic factors increases, the DHSCP in Ghana is likely to improve. It was further noted that isomorphic factors depending on their nature and context, play a crucial role in encouraging standardisation, quality assurance, and knowledge sharing within the downstream healthcare supply chain. The study's finding provides valuable insights into how institutional isomorphism can influence supply chain performance in the healthcare sector, particularly within the context of private-for-profit healthcare facilities in Ghana's GAR. Therefore, the study concluded that isomorphic factors within private-for-profit healthcare facilities in the GAR improved the supply chain performance of downstream healthcare institutions.

Specifically, the study tested the individual constructs under institutional isomorphism and how they individually influence downstream healthcare supply chain performance of private-for-profit healthcare facilities. The findings reported that coercive and mimetic factors of institutional

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isomorphism had a significant and substantial positive influence on downstream healthcare supply chain performance of facilities in the Greater Accra Region of Ghana. Notwithstanding the significant impact on DHSCP, Normative factors of institutional isomorphism reported a positive but insignificant influence as an individual factor on downstream healthcare supply chain performance of private-for-profit healthcare facilities in the GAR.

Furthermore, the second research objective examined the effect of eco-procurement practices on DHSCP in private-for-profit healthcare facilities in the GAR of Ghana. It was grounded in both institutional isomorphism theory and resource dependency theory. The study's finding indicates that eco-procurement practices play a significant and positive role in enhancing the performance of downstream healthcare supply chains of private-for-profit healthcare facilities. Three specific hypotheses were particularly developed to ascertain how eco-sourcing, eco-purchasing, and reverse logistics individually contribute to the positive influence of downstream healthcare supply chain performance. The practice of eco-purchasing and reverse logistics reported a significant and positive influence on the performance of downstream healthcare supply chain. Though, eco-sourcing had a positive influence of DHSCP, its significance was not achieved.

The researcher concludes that practicing eco-procurement activities in private-for-profit healthcare facilities in the GAR of Ghana positively and significantly influences the performance of downstream healthcare supply chains. This finding aligns with institutional isomorphism and resource dependency theories, which showed that private-for-profit healthcare facilities respond to institutional constraints and norms connected to ecologically

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responsible operations to reduce risks related to resource scarcity and even gain access to new resources or markets.

The third research objective assessed the effects of flexibility orientation culture on the relationship between isomorphic factors and DHSCP. The results from the moderation analysis revealed that the effect of flexibility orientation culture as a moderator was not strong enough to reach statistical significance. This suggests that although beneficial for overall organisational performance, a flexible orientation culture may not considerably affect the specific relationship between isomorphic factors and DHSCP. Therefore, the investigation did not support the hypothesised moderating effect of flexibility orientation culture in this context. Thus, the lack of a significant moderating effect for isomorphic factors and DHSCP implies that the pressures to conform to institutional norms and practices may not significantly influence the organisation's flexible orientation culture.

Nevertheless, the fourth research objective which examined the relationship between eco-procurement practices and DHSCP indicated a positive and significant effect of flexibility orientation culture as a moderator. This suggests that a healthcare facility's flexibility orientation culture may enhance the positive effects of eco-procurement practices on the efficiency of the downstream healthcare supply chain. The study concludes that a flexible orientation culture can act as a valuable resource that complements and strengthens the positive impact of eco-procurement practices in the healthcare supply chain.

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Conclusions

The study's purpose sought to examine the relationship between isomorphic factors, eco-procurement practices, and DHSCP of private-for-profit healthcare facilities in the GAR, with organisational culture, precisely flexibility orientation playing the moderating role. Therefore, this purpose was accomplished through three specific objectives and four hypotheses formulated to guide its direction. The following definitive conclusions were drawn in line with the major findings of the study:

Regarding the first objective, the study demonstrates how isomorphic factors can effectively drive supply chain performance, especially the downstream echelon involving private-for-profit healthcare facilities in the GAR. Moreover, the study sheds light on how these factors promote standardisation, quality assurance, service delivery, and knowledge sharing within the downstream healthcare supply chain. Based on the findings presented, the study concludes that isomorphic factors, particularly coercive and mimetic factors have a significant and positive influence on the supply chain performance in the healthcare industry in Ghana, particularly in the context of private-for-profit healthcare facilities in the GAR.

The results clearly demonstrate that coercive factors, which are influenced by external regulations and pressures, have a significant and beneficial impact on supply chain outcomes. Likewise, mimetic factors, which involve copying and imitating others in the industry, have a substantial impact on improving performance in the future. Nevertheless, the study emphasises that normative factors, although showing a positive correlation, do not have a

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statistically significant influence on the performance of the downstream healthcare supply chain.

Furthermore, the findings establish that eco-procurement practices, especially, eco-purchasing and reverse logistics favourably affect the DHSCP of private-for-profit healthcare facilities in the GAR of Ghana. The study's findings also highlight how eco-procurement practices significantly and positively affect DHSCP of private-for-profit healthcare facilities in the GAR of Ghana. The results align with institutional isomorphism and resource dependency theories, emphasising the importance of ecologically responsible operations in the downstream healthcare supply chain to mitigate resource scarcity risks and access new opportunities or markets. Conclusively, this study established a strong link between eco-procurement practices and DHSCP in private-for-profit healthcare facilities within GAR.

The results clearly demonstrate that implementing strategic initiatives focused on environmentally conscious procurement practices and efficient reverse logistics processes have a substantial positive impact on overall supply chain performance. The study shows that although eco-sourcing factors are positively related to downstream performance, this relationship is not statistically significant. This comprehensive understanding highlights the importance for healthcare supply chain participants to prioritise and allocate resources towards environmentally conscious procurement and reverse logistics strategies, acknowledging their capacity to improve sustainability and operational effectiveness.

Finally, this study underscores the value of a flexible orientation culture in enhancing the positive effects of eco-procurement practices on the

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performance of the healthcare supply chain downstream, especially the private-for-profit sector in the GAR. The findings suggest that while a flexible orientation culture may not significantly moderate the relationship between isomorphic factors and DHSCP directly, private-for-profit healthcare facilities should still endeavour to cultivate a flexible and adaptive culture that enables responsiveness, service delivery, quality assurance, collaboration, and continuous learning within the downstream healthcare supply chain in the GAR and similar contexts. In conclusion, a flexible orientation culture does not significantly moderate the relationship between isomorphic factors and DHSCP, as an organisation's flexibility orientation culture may not substantially influence such institutional pressures.

The study discovers, however, that flexibility orientation culture has a favourable and substantial moderating influence on the link between eco-procurement practices and DHSCP. This suggests that a private-for-profit healthcare facility's flexible orientation culture can enhance the positive effect of eco-procurement practices on the performance of the downstream healthcare supply chain. Consequently, a flexible orientation culture can be recognised as an indispensable resource that strengthens and complements the positive influence of eco-procurement practices in the healthcare supply chain in general. Healthcare facilities in the downstream supply chain can leverage this insight to better adapt to institutional pressures, strengthen eco-friendly procurement practices, and enhance overall supply chain performance and sustainability. In conclusion, this study reveals the potential influence of flexibility orientation culture on the relationships between isomorphic factors, eco-procurement practices, and DHSCP.

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Recommendations

The study provides the following recommendations to practitioners and policymakers in the healthcare supply chain about the major findings and conclusions.

Corpora of literature recognised in chapters one and two of the study that the downstream healthcare supply chain is complex and confronted with a range of external and institutional pressures in the form of regulatory, competitive, and market forces which can positively and negatively influence performance. To overcome the negative impact of isomorphic factors, the study recommends that healthcare practitioners and policymakers within the industry should devise effective strategies and policies to integrate these pressures into the supply chain strategies of private-for-profit healthcare facilities in the GAR to strike a balance between compliance and opportunities for innovation to enhance the performance of the downstream healthcare supply chain.

It is further recommended that policymakers provide regulatory support to private healthcare facilities' supply chains in the form of accreditation rewards to healthcare facilities that demonstrate adherence to standards practices, guidelines, and regulatory requirements that were found to positively influence supply chain performance in the GAR and beyond.

In order to consolidate the favourable effect of eco-procurement practices (eco-purchasing, and reverse logistics) on the performance of the downstream healthcare supply chain in the GAR, healthcare practitioners in private-for-profit facilities should actively integrate these practices into their supply chain operations. Besides, policymakers should promote and support private-for-profit facilities to adopt these practices through targeted incentives

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and regulatory measures. Healthcare supply chain leaders should give top priority to integrating eco purchasing and reverse logistics in order to achieve sustainability, as these practices have a positive influence on downstream performance. Although acknowledging the beneficial impacts of eco sourcing, the absence of statistical significance highlights the necessity for meticulous assessment and potential enhancement of eco sourcing strategies. Engaging actively in ongoing improvement endeavours and fostering collaboration with suppliers can augment the efficacy of environmentally conscious sourcing initiatives. Healthcare supply chains enhance ecological well-being and strengthen their long-term resilience and efficiency by implementing these environmentally-focused practices within a globally environmentally conscious context.

Moreover, policymakers should collaborate with industry experts and other stakeholders to further develop clear and comprehensive eco-procurement guidelines specific to the healthcare sector to advance sustainable business practices across the healthcare supply chain to enhance overall performance.

Also, to help private-for-profit healthcare facilities navigate regulatory requirements and complexities and adapt to evolving industry dynamics, including technological advancements, the study recommends that managers of private-for-profit healthcare facilities should develop efficient reverse logistics systems to effectively cater for the proper disposal and recycling of medical waste and equipment to improve DHSCP.

It is further recommended that healthcare practitioners within private-for-profit facilities should prioritise creating an organisational culture that is adaptable and flexible to promote organisational values that embrace

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responsiveness, agility, and continuous learning in the downstream healthcare supply chain to enhance its performance.

Lastly, healthcare practitioners and policymakers should recognise the value of a flexible orientation culture in driving positive outcomes within the downstream healthcare supply chain to foster a work environment that encourages peer learning, innovation, adaptability, and continuous improvement to enhance the overall healthcare supply chain.

Conclusively, policymakers and authorities can actively promote and disseminate success stories of healthcare facilities that have successfully leveraged a flexible orientation culture to enhance eco-procurement practices and supply chain performance to inspire other healthcare facilities in the downstream healthcare supply chain to embrace environmental sustainability.

Suggestions for Future Studies

The study examined the relationship between isomorphic factors, eco-procurement practices, and downstream healthcare supply chain performance [DHSCP] of private-for-profit healthcare facilities in the Greater Accra Region [GAR] with flexibility orientation culture playing the moderating role.. The study was, however, limited by sample frame, sector (private health), and spatial coverage. Therefore, future studies could be carried out to explore this gap by expanding the sample frame to include registered and unregistered healthcare facilities in both private and public sectors in other regions of Ghana. This would indicate adherence to standards, practices, and guidelines that positively influence healthcare supply chain performance.

Similarly, the study employed a quantitative approach using a cross-sectional design, which can statistically limit the findings; hence, it is

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recommended that further studies adopt a mixed approach to carry out cross-sectoral study involving both public and private healthcare sectors to understand how environmental procurement practices and specific isomorphic factors influence supply chain performance across different sectors. The results of this investigation might help the healthcare sector improve ecological procurement by identifying best practices and common themes that could be adapted in the healthcare sector.

Finally, the study's model used only flexible orientation culture while ignoring the control orientation culture to moderate the relationship among isomorphic factors, eco-procurement practices and DHSCP. Therefore, a comparative study involving public and private healthcare sectors in the GAR and other regions of Ghana will be conducted to understand the specific isomorphic factors that influence the performance of the healthcare supply chain. By this, the similarities and differences in regulatory, competitive, and market forces affect public and private health sectors, along with each sector's strategies and policies to respond to external pressures. These suggestions for future research would not only strengthen policy. Still, they can also further advance appreciation of complexities associated with downstream healthcare supply chains and sustainable procurement practices, resulting in improved performance and environmental sustainability in the healthcare industry.

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APPENDICES

Appendix A: Questionnaire

UNIVERSITY OF CAPE COAST

COLLEGE OF HUMANITIES AND LEGAL STUDIES

SCHOOL OF BUSINESS

DEPARTMENT OF MARKETING AND SUPPLY CHAIN MANAGEMENT

Dear Respondent/Participant,

The study aims to examine "**Isomorphic Factors, Eco-procurement Practices, and Downstream Healthcare Supply Chain Performance: The Flexibility orientation culture**." It is strictly for an academic purpose that will result in the award of a degree, and any data solicited from respondents will be treated with the highest confidentiality and will not be disclosed to anybody. Participation in this study is voluntary, and you can withdraw from it anytime. Thank you in advance for your cooperation.

SECTION A: ISOMORPHIC FACTORS

This section examines the influence of isomorphic factors on the downstream healthcare supply chain performance. *Isomorphic factors affect how organisations deal with change and drive firms in the same area to adopt similar policies within the institutional environment*. Kindly use a scale of five to rate each of the following statements according to your level of agreement by ticking [√] only one of each item.

RATINGS: ***Strongly agree*** = 5; ***Agree*** = 4; ***Not sure*** = 3; ***Disagree*** = 2; ***Strongly disagree*** = 1.

COERCIVE FACTORS					
Measurement Items	**5**	**4**	**3**	**2**	**1**
1. The government regulatory agencies imposed some environmental regulations or restrictions on the hospitals' supply chain.					
2. Our healthcare facility avoids or lessens the threat of future government environmental legislation through the hospital's supply chain initiatives.					
3. Regular inspections or audits by government regulatory agencies ensure our hospital's supply chain complies with environmental laws.					
4. Our hospital's supply chain initiatives go beyond basic compliance with environmental laws and regulations.					
5. The government's environmental regulations influence supply chain decisions at our healthcare facility.					

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6. Our hospital's supply chain faces potential conflicts between products and environmental regulations.					
MIMETIC FACTORS					
1. Competitors mimic our hospital's supply chain initiatives to enhance performance.					
2. Our healthcare facility's supply chain practices are typically regarded as the most appropriate initiative to achieve business objectives in the health sector.					
3. Many healthcare facilities imitate our supply chain decisions due to operational benefits in the health sector.					
4. Our healthcare facility imitates our leading competitor's supply chain strategies to improve our facility's image in the sector.					
5. The benefits of mimicking our key competitor's supply chain strategies in the downstream healthcare supply chain far outweigh their costs.					
6. Our hospital's supply chain decisions are motivated by competitors and environmental protection strategies.					
NORMATIVE FACTORS					
1. Our leading suppliers and patients often require us to adhere to supply chain standards.					
2. Our primary customers would hold back their contracts if our supply chain did not meet specific environmental performance criteria.					
3. Key supply chain partners have a clear policy statement concerning supply chain performance.					
4. Customers' awareness of environmental protection influences our supply chain decisions.					
5. Our supply chain decisions are influenced by customers' awareness of environmental protection.					
6. Vendor certification influences our current supply chain decisions.					

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SECTION B: ECO-PROCUREMENT PRACTICES

This section assesses the effect of eco-procurement practices on the downstream healthcare supply chain in terms of eco-sourcing, eco-purchasing, and reverse logistics. *Eco-procurement practices enable the procurement of goods, products, and services with better environmental performance throughout their life cycle than products or services that serve similar functional purposes.* Kindly use a scale of five to rate each of the following statements according to your level of agreement by ticking [√] only one of each item.

RATINGS: ***Strongly agree*** = 5; ***Agree*** = 4; ***Not sure*** = 3; ***Disagree*** = 2; ***Strongly disagree*** = 1.

ECO-SOURCING					
Measurement Items	**5**	**4**	**3**	**2**	**1**
1. We select suppliers based on their environmental competency to support our environmental objectives, such as reducing air emissions.					
2. We select suppliers based on their environmental competency to support our environmental objectives, such as reducing waste.					
3. We select suppliers based on their technical and eco-design capabilities.					
4. Suppliers with ecological competency are chosen to support our environmental objectives, such as reducing hazardous substances.					
5. We choose suppliers based on their abilities to develop environmentally friendly products.					
ECO-PURCHASING					
1. Our healthcare facility is keen on ISO14001 certification of suppliers.					
2. Our healthcare facility participates in the design of products for recycling or reuse.					
3. Our healthcare facility actively contributes to the reduction of packaging material.					
4. We are decreasing the consumption of hazardous and toxic materials.					
5. We use a life cycle analysis to evaluate the environmental friendliness of products and packaging prior to procurement.					
REVERSE LOGISTICS					
1. Our healthcare facility gathers used products from the wards for disposal, recycling, reclamation, or reuse.					
2. Our healthcare facility collects used packaging from the wards for reuse or recycling.					
3. Our healthcare facility requires suppliers to collect their packaging materials.					

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4. Our healthcare facility returns products to suppliers after their life cycle for recycling, retaining materials, or remanufacturing.					
5. Our healthcare facility returns its packaging to suppliers for reuse or recycling.					
6. Our healthcare facility returns some products for a safe refill.					

SECTION C: DOWNSTREAM HEALTHCARE SUPPLY CHAIN PERFORMANCE

Section 'C' measures the downstream healthcare supply chain performance by service level, quality, cost, and flexibility. *The downstream healthcare supply chain relates to hospitals and frontline agents such as clinicians, physicians, and patients directly involved in healthcare delivery.* Kindly use a scale of five to rate each of the following statements on downstream healthcare supply chain performance according to your level of agreement by ticking [√] only one of each item.

RATINGS: ***Strongly agree*** = 5; ***Agree*** = 4; ***Not sure*** = 3; ***Disagree*** = 2; ***Strongly disagree*** = 1.

Downstream Healthcare Supply Chain Performance					
Measurement Items	**5**	**4**	**3**	**2**	**1**
1. Order fulfilment is improving with our allied hospital supply chain.					
2. Our healthcare facility delivers short and efficient order service time.					
3. Our supply chain relationships have improved due to on-time delivery.					
4. Mistakes or errors occurring in any process along the supply chain are reduced to the barest minimum.					
5. We are satisfied with the quality of the order fulfilment process.					
6. Our healthcare facility provides high-quality care, even when demands vary greatly.					
7. The order fulfilment process is cost-efficient.					
8. Our healthcare facility reduces costs along the entire supply chain.					
9. Cost reduction initiatives have improved our supply chain relationships with allied hospitals.					
10. Flexibility enables us to improve our supply chain relationships with key supply chain partners.					
11. The flexibility of the order fulfilment process has improved with time.					
12. Flexibility enables us to adjust service capacity in response to changes in patients' demands.					

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13. We can rapidly introduce new technological advancements in the care process due to flexibility.					
14. Flexibility helps us introduce large numbers of service improvements/variations.					

SECTION D: FLEXIBILITY ORIENTATION CULTURE

This part measures the flexibility orientation culture in the relationship between isomorphic factors, eco-procurement practices and downstream healthcare supply chain performance. *Flexibility orientation structures that enable openness to new ideas, approaches, willingness to change, and support innovation*. Kindly rate each of the following statements according to your level of agreement by ticking [√] only one of each item.

RATINGS: ***Strongly agree*** = 5; ***Agree*** = 4; ***Not sure*** = 3; ***Disagree*** = 2; ***Strongly disagree*** = 1.

FLEXIBILITY ORIENTATION					
Measurement Items	**5**	**4**	**3**	**2**	**1**
1. Loyalty and tradition are the glue holding our healthcare facility together.					
2. Our healthcare facility is very dynamic and entrepreneurial, and employees are willing to stick their necks out and take risks.					
3. Our healthcare facility is committed to innovation and development.					
4. Our healthcare facility emphasises growth through developing new ideas.					

SECTION E: SOCIO-DEMOGRAPHIC PROFILE OF RESPONDENTS

This part solicits information about respondents. Kindly tick (√) the most appropriate option(s) provided.

1. Gender: Male [ ]. Female [ ].
2. Position: Purchasing Manager [ ]. Hospital Administrator [ ]. Medical Director [ ]. Pharmacist [ ]. Laboratory Manager [ ].
3. The highest educational qualification attained: Diploma [ ]. Bachelor's degree [ ]. Master's degree [ ]. Others, please specify ……
4. Type of healthcare facility: Clinic [ ]. Primary hospital [ ].

THANK YOU FOR YOUR PARTICIPATION!

Appendix B: Ethical Clearance for Data Collection

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UNIVERSITY OF CAPE COAST

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YOUR REF: -
OMB NO: 0990-0279
IORG #: IORG0011497

7TH DECEMBER, 2022

Mr. Phidelis Mawunyo Komla Ebledzi
Department of Marketing and Supply Chain Management.
University of Cape Coast

Dear Mr. Ebledzi,

ETHICAL CLEARANCE – ID (UCCIRB/CHLS/2022/58)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your research on **Isomorphic Factors, Eco-Procurement Practices, and Downstream Healthcare Supply Chain Performance: The Role of Organisational Culture.** This approval is valid from 7th December, 2022 to 6th December, 2023. You may apply for a renewal subject to the submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Kofi F. Amuquandoh

Ag. UCCIRB Administrator

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Appendix C: Supervisors Letter of Support for Ethical Clearance

SUPPORT LETTER FROM SUPERVISOR

11th May, 2022.

The Chair

Institutional Review Board

University of Cape Coast

Dear Sir/Madam

APPLICATION FOR ETHICAL CLEARANCE

The bearer of this letter, **Mr Phidelis Mawunyo Komla Ebledzi,** is a second-year Master of Commerce student in Procurement and Supply Chain Management at the School of Business, College of Humanities and Legal Studies, University of Cape Coast.

He is researching the topic "**Isomorphic Factors, Eco-Procurement Practices, and Downstream Healthcare Supply Chain Performance: The Role of Organisational Culture**" as part of the requirement for obtaining a Master of Commerce in Procurement and Supply Chain Management at the University of Cape Coast.

I write to support his application for ethical clearance from your outfit.

I shall be grateful if he is given the necessary assistance to enable him to commence data collection.

Thank you.

Yours faithfully,

Professor Anokye M. Adam

Supervisor

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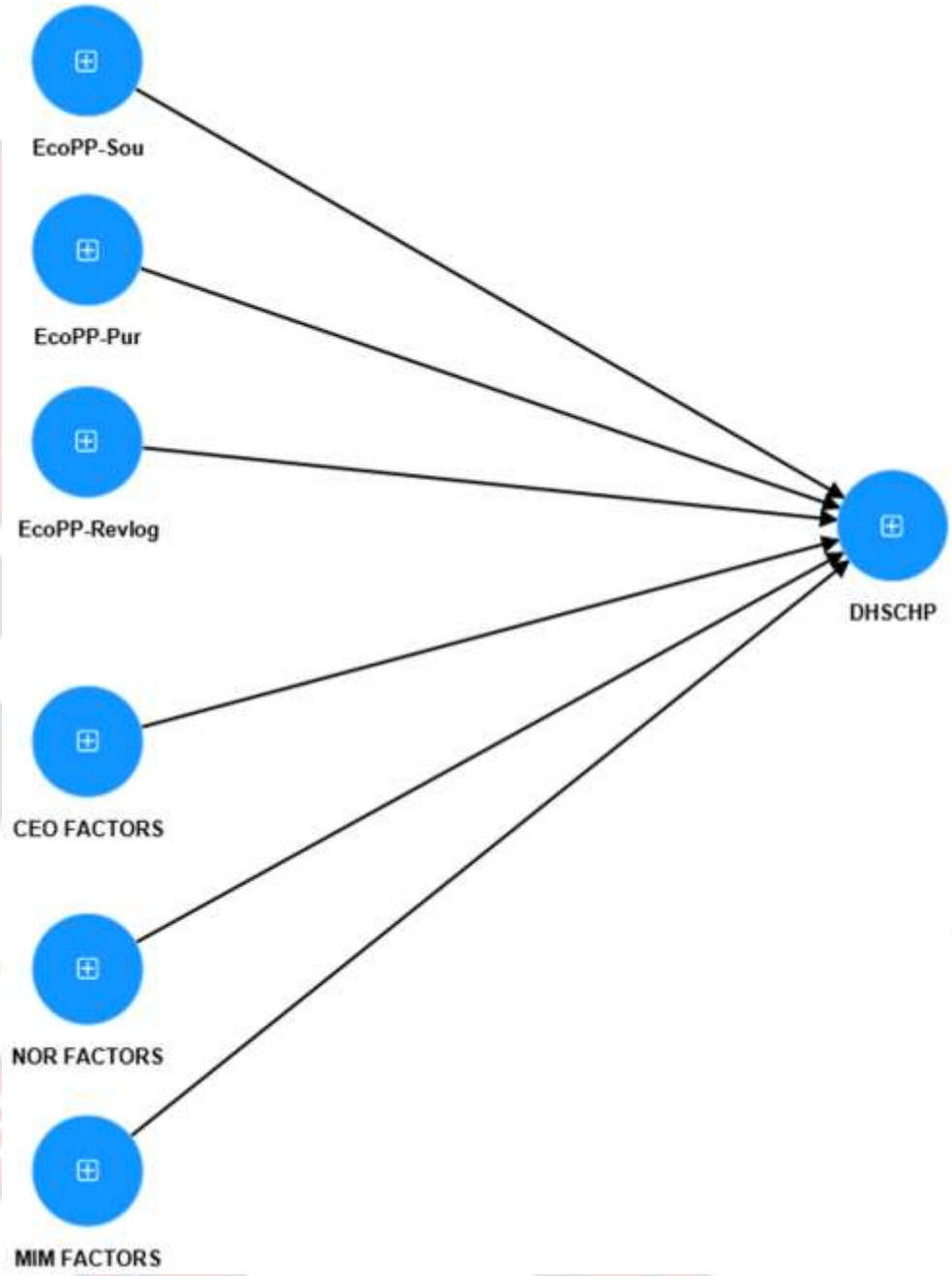
Appendix C: Impact of Dimensions of Isomorphic Factors and Eco-procurement Practices on DHSCP



Source: Field survey, (2023).

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