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**The Relationship between E Procurement and Ethical Behavior in Public Sector: A
Mediating Role of Business Process Outcomes**

By

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requirements for the award of the degree of

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DECLARATION

I hereby affirm that this thesis is my own work towards a partial fulfillment of the requirements for the award of Master of Science in Logistics and Supply Chain Management. To the best of my knowledge, all materials by other writers utilised in this study have been duly recognised and cited, and this is solely my original work that has not been submitted anywhere else for a degree or any other academic reason.

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DEDICATION

I dedicate this thesis to my family and friends. A special thank you to my devoted husband and kids for their unfailing support and encouragement throughout my difficult times.

I also dedicate my work to my coworkers who gave me the encouragement and drive to finish this course. Their assistance is gratefully received.



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I appreciate Prof David Asamoah taking the time to advise and mentor me as I conducted my research. Without any hesitation, it can be said that his guidance and remarks were invaluable and that this research would not have been feasible without them.

The fact that there is never a good time to seek out higher knowledge is something I would also like to express my gratitude to everyone for the support.



ABSTRACT

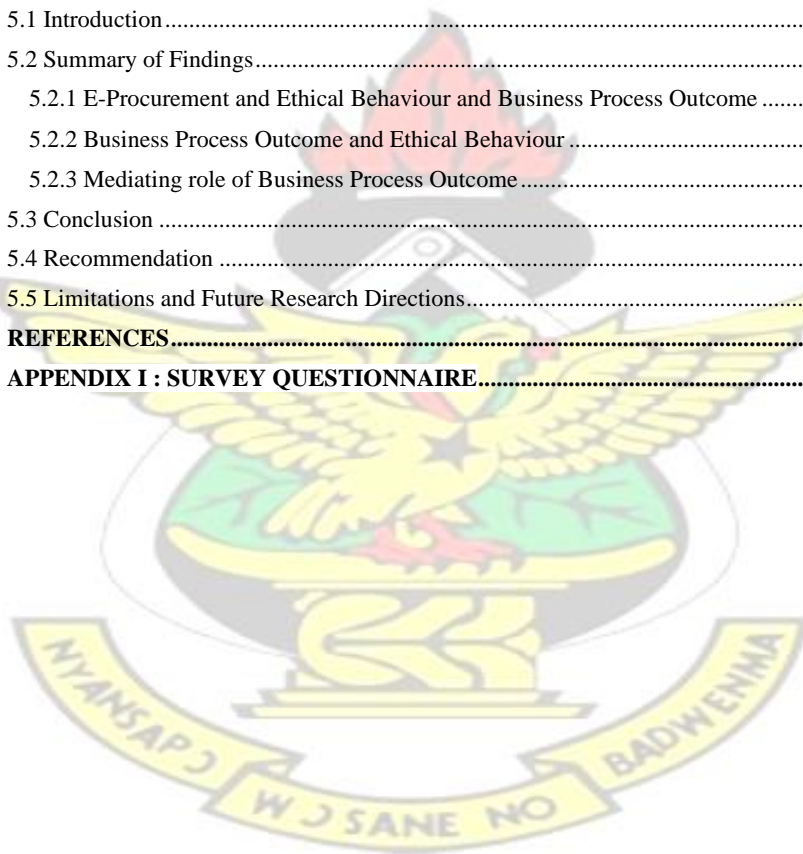
The study is aimed at providing a comprehensive understanding of the mediating role played by business process outcomes in the e-procurement and ethical behaviours model with empirical evidence from public institutions. The study employed a cross-sectional explanatory research design with quantitative methods. The study population comprised of top and medium level managers in logistics, supply chain, and operations at Ghanaian public institutions. The study employed both random and purposive sampling techniques to collect data from a sample of 250. The study utilised inferential analysis aimed at achieving the study objectives with SPSS v26, Amos and Hayes Process Macro which were employed to evaluate the hypotheses of the study. The findings showed that e-procurement has positive and significant effect on ethical behaviour among the public institutions. The study also found that business process outcome significantly drives ethical behavior and also mediates the relationship between e-procurement and ethical behaviour. Based on the findings it is recommended that public organizations engage in thorough training programmes that teach personnel about ethical concepts, norms, and the value of ethical behaviour in procurement procedures.

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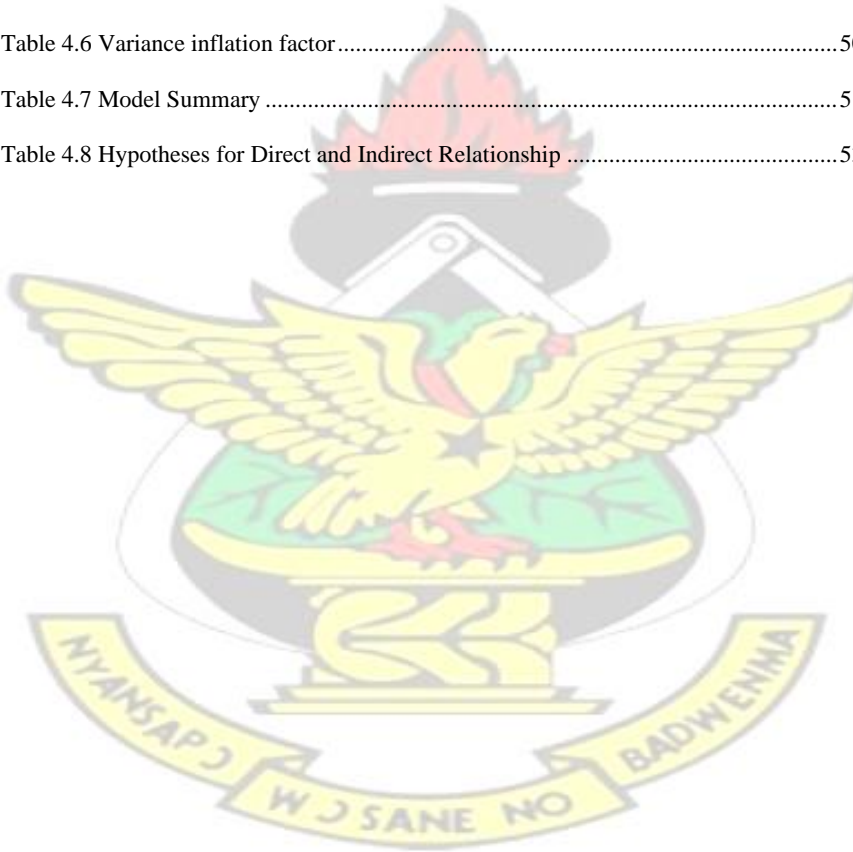
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LIST OF ABBREVIATIONS

BPO- Business process outcomes

EB- Ethical Behavior

EP- Electronic Procurement

SEM- Structural Equation modeling

PLS –Partial Least Squares

SC – Supply Chain

SCM – Supply Chain Management

SPSS – Statistical Package for Social Sciences



CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The public sector plays a crucial role in shaping the global economy, as it encompasses government organizations and institutions that provide essential services and infrastructure to citizens (Cagigas et al., 2021; Chen and Aklikokou, 2021). In Africa, the public sector's contribution is particularly significant, as it supports economic development, social welfare programs, and public service delivery across the continent (Baez-Camargo et al., 2020; Bincof, 2020; Mlambo, 2019). Similarly, in Ghana, the public sector's involvement is instrumental in driving growth, promoting stability, and addressing societal challenges through policies and initiatives that benefit the nation as a whole (Ali et al., 2021; Frimpomaa-Afrane, 2023). With that being said, supply chain management (SCM) plays a crucial role in the public sector's contribution to the global economy, as it ensures efficient delivery of goods and services (Fourie and Malan, 2020; Saddikuti et al., 2020). However, Africa and Ghana face specific challenges in this area, such as inadequate infrastructure, corruption and limited access to technology (Amankwah-Amoah and Hinson, 2019; Cambaza, 2023). For organizations to run smoothly in order to stay competitive as well as improve their overall performance, including the supply chain, they must invest in technological infrastructures due to advancement in modern technology (Asamoah and Andoh-Baidoo, 2018). Moreover, ethical behavior (EB) is essential for maintaining transparency and trust within supply chains, preventing corruption, and ensuring fair practices that benefit both the public sector and the overall economy (Rehman et al., 2023).

Accordingly, SCM literature contended that the adoption of technology in the procurement process enhance accountability and transparency. Hence, it helps to check EB among organizations (Attaran, 2020; Bai et al., 2022; Di Vaio et al., 2023; Kagondou, 2023; Mackey and Cuomo, 2020). In line with, electronic procurement or e-procurement, has received increased attention and adoption in recent years due to its potential to streamline purchasing processes and drive cost savings (Singh and Chan, 2022; Yevu and Yu, 2020). According to Singh and Chan (2022), e-procurement refers to the use of digital technology and online platforms for purchasing goods and services in the public sector. The EB within public procurement processes has been significantly impacted by this contemporary approach. E-procurement technologies have reduced corruption, favoritism, and unethical activities that were common in old procurement methods by expediting the procurement process and boosting transparency (Hannah and Nani, 2021; Themeli, 2022). Additionally, e-procurement has promoted fair competition among vendors, ensuring that all participating vendors have an equal chance to succeed (Abul Hassan et al., 2021; Ahmad et al., 2019). This has boosted quality and innovation in the market while also encouraging businesses to compete for government contracts. A digital record of every transaction provided by e-procurement systems has also improved accountability and made it simpler to spot any fraudulent behavior or abnormalities (Afolabi et al., 2022; Khalfan et al., 2022). In general, the adoption of e-procurement has unquestionably transformed the landscape of public sector procurement, promoting a more open, equitable, and moral environment for both buyers and suppliers.

Evidently, examining the association between e-procurement and EB that these systems can be quite helpful in fostering ethical behavior within firms (Chan and Owusu, 2022; Yu et al., 2020). Nevertheless, additional strategies can be used to further deter and prevent unethical behavior (Karim et al., 2007). Business process outcomes (BPO) is one of these

techniques (Asamoah and Andoh-Baidoo, 2018). In an organization, EB can be shaped and strengthened in a big way via BPO. E-procurement technologies, for instance, can improve accountability and transparency in the procurement process when they are deployed properly (Mackey and Cuomo, 2020). Increased transparency can aid in discouraging unethical actions like bribery or partiality in contract selection. Additionally, by streamlining and automating procurement processes, e-procurement can reduce the opportunities for unethical behavior to occur, as it minimizes human intervention and potential biases (Asokan et al. 2022). Ultimately, the combination of e-procurement and BPO can create a more ethical and efficient procurement environment for organizations. However, the combination of e-procurement, BPO and EB in a single study is less explored. Therefore, this study examined the effect of e-procurement on ethical behaviour and mediating effect of BPO in the relationship in public institutions in Ghana.

1.2. Problem Statement

In Sub-Saharan Africa countries including Ghana, the public sector contributes significantly to the overall economy, including GDP, and plays a crucial role in providing essential services to the population (King and Shackleton, 2020; Myovella et al., 2020; Taiwo et al., 2022). However, research indicates that the public sector is recognised to have always faced challenges in ensuring transparency and accountability in their operations including SC functions (Dutta et al., 2020, Shahaab et al., 2023). Due to the complex nature of SC, it can be difficult for public sector organizations to monitor and regulate the ethical practices of their suppliers (Asamoah et al., 2015). Additionally, the pressure to reduce costs and deliver services efficiently may sometimes lead to compromises on ethical standards, further exacerbating the challenge (Albahri et al., 2023). Research indicates that one of the measures to address these challenges is to invest

in technology solutions that enable better visibility and traceability throughout the SC (Dasaklis et al., 2022).

In accordance, scholars and practitioners of SCM contended that the application of e-procurement can further enhance supply chain visibility and traceability (Dasaklis et al., 2022; Dutta et al., 2020; Khan et al., 2022; Kayikci et al., 2022). Additionally, e-procurement systems can integrate with other technologies, such as supplier management platforms, to gather comprehensive data on supplier performance and compliance with ethical standards (Dutta et al., 2020). In line with the above, prior studies have found a positive correlations between technology procurement and EB in firms (Almajali et al., 2023; Asamoah and Andoh-Baidoo, 2018; Basir et al., 2022; Norziation et al., 2021). While it offers numerous benefits, such as cost savings and efficiency, there is growing concern about its impact on EB within organizations. The relationship between e-procurement and EB is complex and multifaceted. Also, e-procurement impact studies mainly focus on developed and industrialised nations (Almajali et al., 2023; Sánchez-Rodríguez et al., 2020; Kumar, N. and Ganguly, 2021; Pattanayak and Punyatoya, 2019). Again, similar study conducted by Asamoah and Andoh-Baidoo (2018) concentrated on both private and public institutions and suggested for further study to consider only public institutions. This is due to the fact that only 14% of public institutions were covered in their research (Asamoah and Andoh-Baidoo, 2018).

Moreover, the complex nature of the relationship between e-procurement and EB has resulted in suggestion for other institutional factors may influence EB. Previous studies (e.g. Asamoah and Andoh-Baidoo, 2018; Asamoah et al., 2015; Karim et al., 2007) suggested that BPO could be a potential factor that influences EB in e-procurement. BPO refer to the results or consequences of the various processes and activities involved in e-procurement, such as the efficiency of the procurement process, cost savings, and supplier

relationships (Karim et al., 2007). These outcomes can have a significant impact on EB, as they can either incentivize or discourage unethical practices. However, the mechanism through which e-procurement impact ethical behaviour is not fully explored. More precisely, there is dearth of research on how BPO could mediate the effect of e-procurement on EB. In bridging the gap in literature, this study explored the intervening effect of BPO on the e-procurement and ethical behaviour relationship in the context of public institutions in developing nation like Ghana.

1.3 Research Objective

This research is aimed at providing a comprehensive understanding of the mediating role played by business process outcomes in the e-procurement and ethical behaviours model with empirical evidence from public institutions.

1.3.1 Specific Objectives

The study specific objectives are:

1. To examine the relationship between e-procurement and ethical behaviour.
2. To determine the link between business process outcomes and ethical behaviour.
3. To establish mediating effect of business process outcomes in the e-procurement and ethical behaviour model.

1.4 Research Questions

1. What is relationship between e-procurement and ethical behaviour?
2. Can the outcomes of business processes mediate the relationship between e-procurement and the ethical behavior model?

1.5 Significance of the Study

The research contribute to theory and practice. Theoretically, it advances our knowledge of how e-procurement procedures may affect moral conduct in public institutions. This research offers light on the mechanisms through which e-procurement might support or undermine ethical decision-making and behavior by examining the mediating function of business process results. Additionally, it offers useful knowledge for practitioners and policymakers in creating efficient e-procurement systems that support moral behavior in public organizations. This study also emphasizes how crucial it is to take into account the organizational setting in which e-procurement procedures are used. It implies that e-procurement's success in fostering ethical conduct may differ based on elements including company culture, leadership, and staff members' attitudes toward ethics. In order to maximize the ethical consequences of these practices, policymakers and practitioners should not only concentrate on the technical aspects of e-procurement platforms but also take into account the larger organizational environment. This study also underlines the requirement for continuing monitoring and assessment of e-procurement systems to guarantee their continued efficacy in encouraging ethical behavior. Policymakers and practitioners can find any gaps or flaws that might obstruct the ethical outcomes of e-procurement systems by routinely evaluating the cultural values, leadership styles, and employee attitudes within an organization. This will provide them the ability to put the appropriate interventions and training programs in place to deal with these problems and promote a more moral workplace. Additionally, constant monitoring and assessment will enable the detection of any alterations in the organizational environment that would need modifying the e-procurement system in order to preserve its efficacy in fostering ethical behaviors.

1.6 Scope of the Study

Conceptually, the study examined the direct relationship between e-procurement and ethical behaviours. In addition, it explored how business process outcomes could play an intervening role in the relationship. To further understand the relationship between these variables, the agency theory and the institutional theory were employed by the research. Geographically, the study focused on public institutions in Ghana.

1.7 Overview of Methodology

The study used an explanatory research design and a quantitative/deductive research methodology. They are significant because they enable deductive theory testing by allowing the researcher to hunt for evidence to either confirm or refute the hypothesis. The population, which consists of logistics, supply chain, and operations officers, was chosen by convenience and purposive sampling. A sample of 250 public institutions were recruited to participate in the study. The study interacted with respective firms and respondents based on approval and consent. The purpose of the survey was initially explained to the respondents, as well as the questionnaire. All respondents who have voluntarily agreed to participate in the survey then received the questionnaire. After data collection, the primary information gathered from the field was examined for reliability and accuracy. The completed questionnaires were entered into Epidata to speed up analysis and analysed using Amos software. This study employed two data analysis methodologies, namely descriptive and inferential analysis, using multivariate data analysis techniques such as Structural Equation modeling (SEM) and factor analysis through Smart-PLS in order for the study objectives to be achieved. The basis for the descriptive analysis was the information provided by the respondents and that of the organization. The descriptive analysis included statistics for frequencies, percentages, means, skewness, and kurtosis in order to test for normality. The objective of this investigation was to validate the suitability

of the collected data for covariance-based SEM analysis. Missing data, outliers, and data distribution were all investigated. The study's hypotheses were put to the test using inferential analysis.

1.8 Limitations of the Study

Like other researches, this study was subjected to some limitations. The study's lack of generalizability as it only focused on public institutions was one of its limitations. Additionally, additional potential mediating elements that can affect the connection between e-procurement and ethical behavior were not taken into account by the investigation. Additionally, the study did not take into account the effects of other organizational elements like leadership styles or organizational culture, focusing only on the association between e-procurement and ethical behavior. The thorough knowledge of the complex dynamics at work within public organizations and their procurement processes is constrained by this narrow emphasis. Once more, the study did not examine the potential moderating effects of outside factors that might affect the association between e-procurement and ethical conduct in public institutions, such as laws or industry standards. Future research should therefore focus on addressing these drawbacks and offering a more comprehensive understanding of the mediating function of business process outcomes in the moral conduct of public organizations. Researchers can better understand how to optimize e-procurement methods to support ethical behavior and accountability inside public institutions by taking these extra elements into account. In order to guarantee the honesty and transparency of public procurement procedures, politicians and administrators can use this knowledge to provide useful recommendations and guidelines.

1.9 Organization of the Study

The thesis was divided into five chapters. The introduction, background material, and problem statement were all covered in Chapter 1 of the study. This part also includes a description of the study's aims, which serve as the foundation for its research questions. The significance of the study, a synopsis of the methodology, the study's scope, and its organization are all covered in this section of the research paper. The relevant literature on e-procurement, EB and business process outcomes were covered in the second chapter. Parts of the literature review were both theoretical and empirical. Chapter two goes into the study's various concepts in more detail. The third chapter, which focuses on the research methodology, describes the strategies employed to achieve the study's objectives. Chapter 3 discussed the research sample, the techniques utilized to collect the data, and the part on data analysis. The study's findings were examined in chapter four and related to earlier works of literature. Chapter 5 provided the study's recommendations, suggestions for further research, and a summary of the findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The thesis's chapter two is divided into four primary subheadings for organization and clarity. The content within this section is structured to cover “conceptual review, theoretical review, empirical review”, and the eventual formulation of the “research model and predictions”. The conceptual review component serves to provide precise definitions, rationalizations, and instances demonstrating the practical application of key concepts within this study. The theoretical review section delves into the foundational theories that underpin this work. The study's proposed model effectively illustrates various propositions, while extensive discussions address the interconnections between them. The culmination of the chapter presents an enumeration of the research's weaknesses and limitations.

2.2 Conceptual Review

The definitions and operationalizations of the terminology used to describe the constructs and their application in the study are provided in this part. Three primary components (Electronic Procurement, Ethical Behavior, and Business Process Outcomes) are included in the study model. These structures were operationalized in the sections that followed (see 2.2.1-2.2.3).

2.2.1 Electronic Procurement

A computerized method of coordinating and carrying out procurement activities within an organization is known as electronic procurement, or e-procurement (Yu et al., 2020). It entails utilizing technology to automate and simplify several phases of the procurement process, from request through payment, using tools like electronic platforms and software

systems. E-procurement attempts to increase procurement operations' efficiency, transparency, correctness, and cost-effectiveness (Sitompul, 2022).

Additionally, E-procurement is fundamentally a digital method of acquiring products, services, and projects from outside providers (Nani and Ali, 2020). Utilizing technologies effectively allows businesses to streamline and improve many phases of the procurement process, resulting in increased effectiveness and better results. The procedure also starts with the computerized production of purchase demands, which takes the place of conventional paper-based forms (AlNuaimi et al., 2021). Requests may now be submitted online by authorized staff or users, eliminating the need for original paperwork and speeding up the request-initiation process. By providing a database of vendors, e-procurement solutions enable a more deliberate and informed supplier selection. Corporations can assess prospective suppliers using factors including cost, value, and past performance (Afolabi et al., 2019).

The utilization of electronic catalogs is another important benefit of e-procurement. These online databases offer thorough details on the products and services offered, enabling customers to make educated decisions. Requisitions are submitted, at which point automatic approval routines are activated (Akaba et al., 2020). These workflows eliminate delays and lower the risk of mistakes associated with manual approval processes by routing requests to the right stakeholders for assessment and authorization. Furthermore, purchase orders, a crucial part of procurement, are automatically prepared and sent to suppliers via electronic means (Kumar and Ganguly, 2021). This reduces the possibility of errors brought on by human data entering and improves accuracy. E-procurement systems also make it easier to manage bids and seek quotes, letting suppliers submit their bids online. Better offer comparison and more informed decision-making are the results of this (Ramkumar et al., 2019). E-procurement solutions facilitate the effective management

of contractual relationships with suppliers. Electronic storage of contract papers allows for simple retrieval and compliance monitoring. These systems also link with banking software, making it easier to process and pay invoices. Transparency and traceability in financial transactions are further improved by this connection (Ahmad et al., 2019).

Concisely, via spend analysis tools, e-procurement offers a thorough perspective of expenditure patterns in addition to the immediate process benefits (Rolas et al., 2019). To enhance their procurement strategy, organizations may spot potential for cost savings, track the success of their purchasing operations, and make data-driven choices. To sum up, e-procurement represents a considerable change from conventional procurement practices (Mackey and Cuomo, 2020). Businesses may increase operational effectiveness, decrease mistakes, increase openness, and improve their ability to make strategic decisions by adopting technology. E-procurement has an influence on every stage of the procurement lifecycle, whether through straightforward standalone products or complex end-to-end platforms, and this contributes to the general performance of contemporary firms (Maepa et al., 2023). Based on the aim of the study adopted the definition of electronic procurement by Yu et al. (2020) describes a computerized method of coordinating and carrying out procurement activities within an organization is known as electronic procurement, or e-procurement.

2.2.2 Ethical Behavior

The term "ethical behavior" refers to action that abides by morally acceptable and upright principles and ideals within a certain community, culture, or business (Cornwell and Korenman, 2021). It entails conducting oneself in ways that show consideration for individuals as well as the wider society. Establishing trust and keeping trustworthy connections, and upholding the norms of professionalism and societal accountability all depend on acting ethically (Apriliaswati and Fitrianingrum, 2022). Furthermore, ethical

conduct embodies the underlying ideas and values that direct all of our actions and choices, serving as the foundation of a just and peaceful society (Nguyen et al., 2020). Respect, honesty, and uprightness are the three essential tenets of ethical behavior. It acts as an ethical beacon that directs people toward activities that are seen as good and reasonable from a moral standpoint. This idea cuts beyond cultural barriers and social customs to create a global framework for interpersonal interaction (Yulianti et al., 2021).

In addition, honesty, a crucial aspect of ethical action, builds confidence and trust in partnerships. When people communicate honestly and openly, they foster an atmosphere of openness where miscommunication and deceit are reduced. Similar to authenticity, integrity strengthens the congruence between one's behaviors and values, encouraging character development (Eddleston and Mulki, 2021). Even in trying situations, acting morally indicates a commitment to one's values and builds an impeccable track record for dependability. Another key cornerstone of ethical action is respect. No matter their histories, positions, or differences in opinions, it demands that everyone be treated with decency. Since many viewpoints provide depth to shared experience, ethical people cherish variety in addition to acknowledging it. This polite attitude develops empathy and friendships that cross social barriers (Flom et al., 2023).

Moreover, ethical conduct encompasses greater obligations and contributions in addition to interpersonal relationships (Renusha and Opatha, 2023). Responsible behavior entails taking responsibility for one's choices and the results of those choices, as well as actively contributing to community improvement initiatives. This sense of citizenship motivates people to respect moral and legal requirements while striving to improve society as a whole. Additionally, consistent behaviors and open intentions form the basis of trustworthiness, an attribute frequently connected to ethical people (Im and Nam, 2019). People who act ethically consistently are trusted as friends, partners, and leaders because

they are seen as trustworthy and principled. Particularly when it comes to influencing the behavior of groups and organizations, ethical leadership is crucial. Leaders who give ethical issues top priority in their decision-making create a good example that affects how those they lead behave (Halbusi et al., 2019).

Furthermore, it requires moral judgment and critical thought to navigate ethical difficulties, which might result from opposing ideals or confusing circumstances (Chiaravutthi, 2019). When acting ethically, people must compare their options to the moral standards they uphold, looking for decisions that are consistent with their basic beliefs and benefit society. In conclusion, morality is the foundation upon which civilizations are created (Liao et al., 2022). It includes decency, honor, respect, accountability, and dependability, directing people toward decisions that are good for both them and the larger community (Bietti, 2020). This idea crosses cultural barriers and acts as a unifying factor that encourages communication, empathy, and cooperation amongst various groups of people. Maintaining moral standards impacts not just each individual's character but also the overall character of our linked environment (Saha et al., 2020). Based on the aim of the study adopted the definition of ethical behavior by Cornwell and Korenman (2021) refers to action that abides by morally acceptable and upright principles and ideals within a certain community, culture, or business.

2.2.3 Business Process Outcomes

Business process outcomes are the outcomes, advantages, or effects that a company experiences as a consequence of implementing and overseeing specific company procedures (Teinemaa and Depaire, 2019). These results are the immediate or indirect results of the planning, implementation, and execution of operations. They may significantly affect a company's efficiency, effectiveness, client satisfaction, and strategic objectives (Fischer et al., 2020). Additionally, company procedure outcomes, which stand

for the concrete and intangible outcomes that occur from the coordination and optimizing of numerous business processes, are at the core of good managerial practice. These results cover the dramatic improvements in achievement, ecological responsibility, and strategic development that may be brought about by clearly defined, effectively carried out, and continually improved procedures (Lombardi, 2019).

In addition, the goal of increased efficiency lies at the heart of business process results (Vecchi et al., 2021). Businesses may optimize workflows, cut down on redundant jobs, and speed up the execution of crucial tasks by identifying and removing bottlenecks. Automation not only saves precious resources but also results in immediate cost savings, allowing businesses to manage their money more wisely (Ehrendorfer et al., 2021). Additionally, when procedures are optimized, they frequently help create an operating environment that is more efficient and interconnected. Besides internal operations, the effects of streamlined business processes extend as well to the client expertise (Teinmaa et al., 2019). For example, a better order fulfilment process can result in faster delivery times, fewer mistakes, and higher levels of client happiness. These results increase client advocacy and loyalty, fostering long-term business development and competitive edge in the market. Superior goods and services are produced as a consequence of well-designed procedures with integrated quality controls, thus boosting the organization's image (Fashanu, 2021).

Furthermore, it is crucial to understand the connection between agility in organizations and the results of business processes. Flexible business processes enable firms to react quickly to market changes and capture new possibilities (Mikalef and Krogtie, 2020). Corporations can quickly react to shifting client preferences and market trends thanks to flexible structures, ensuring them stay at the forefront of technological development and relevance (Aydiner et al., 2019). Despite operational enhancements, streamlined

procedures also help with risk management and legal compliance. Businesses protect themselves from significant legal and regulatory problems by integrating risk management tactics and compliance controls into procedures. As a result, the operating environment is made more secure, and a culture of responsibility and transparency is fostered (Ivančić et al., 2019).

Moreover, the results of well-structured procedures have a significant impact on employee satisfaction and efficiency. Employee feeling of responsibility and accountability rises when they are aware of their tasks within well-defined operations (Jafari-Sadegh et al., 2020). Reducing the uncertainty and friction brought on by disorderly procedures improves job satisfaction and equips workers to make more significant contributions to the objectives of the business. Furthermore, business process outputs strategically match with an organization's main goals rather than only providing localized advantages (Baiyere et al., 2020). Corporations reach milestones like profitable product launches, market penetration, and boosts in revenue by efficiently executing procedures that support fundamental strategic ambitions. These results confirm the mutually beneficial link between efficient operations and successful strategy (Canhoto and Clear, 2020).

Data-driven decision-making is crucial in the digital era, and business process results are also of utmost importance (Yang et al., 2020). Corporations collect and examine information regarding the effectiveness of processes, offering insights that guide strategic decisions and future improvements. This iterative method of process improvement improves the organization's capacity to adjust to changing conditions and take advantage of new trends (Hermes et al., 2019). In summary, the results of business processes act as the visible representations of well-managed operations. These effects, which range from improved productivity and customer happiness to risk mitigation and strategy alignment, show the revolutionary power of efficient processes. Businesses that emphasize process

optimization open a door to continuous development, innovation, and resilience in a market that is always changing (Costin et al., 2021). Based on the aim of the study adopted the definition of Business process outcomes by Teinemaa and Depaire (2019) describes the outcomes, advantages, or effects that a company experiences as a consequence of implementing and overseeing specific company procedures.

2.3 Theoretical Literature Review

In this section, the review looked at the fundamental concepts as well as the mediating role played by business process outcomes in the e-procurement and ethical behaviors model with empirical evidence from public institutions. as a representative example. This study's guiding theories are the Agency Theory and its application to the Social Exchange Theory. Theoretical frameworks offer a distinct lens or perspective through which a topic is researched; they clarify the context and the relationships among all aspects and levels.

2.3.1 Agency Theory

The exacerbated interaction between electronic procurement procedures and moral conduct may be seen through the perspective of agency theory, which provides a useful framework for understanding the possible mediating function of business process results (Kumar and Ganguly, 2021). Agency Theory highlights the inherent disputes within an organization that might develop owing to different aims and knowledge asymmetry. It is based on the dynamics amongst proprietors (owners or stockholders) and agents (workers or administrators). This theory sheds light on how improving business procedures may affect and maybe moderate ethical behavior inside companies when it applies to the setting of electronic purchasing and socially responsible conduct (Kartika, 2022). The possibility for inequalities of interest and ethical risks also becomes clear in the context of e-procurement, when procurement specialists function as agents in charge of making purchase choices on behalf of the company (Maria et al., 2023). In their capacity as agents,

they could put their own interests like connections with vendors or financial gain ahead of those of the company. These private interests can take precedence over moral action. Where business process outputs have a mediating function is in this situation (Mélou and Spruk, 2020).

Moreover, streamlining corporate procedures for e-procurement can have a number of advantageous effects, including enhanced productivity, responsibility, and openness. The gaps among the interests of agents and their principals are filled by means of these results (Fazekas and Blum, 2021). Agents' choices and actions are more accessible and answerable to the company when procedures are forthcoming and in line with moral principles. The agency's ability to behave unethically and go undetected is decreased by this greater openness (Anin et al., 2022). Additionally, more effective procurement techniques can follow from better corporate procedures. The desire to participate in unethical action decreases when agents can obtain the same or greater results through ethical means. In order to accomplish their goals, agents are less likely to feel the need to take short cuts, break the law, or use unethical tactics. In order to maintain the priority of ethical concerns in decision-making, this shift in perspective and conduct is crucial (Mwelu et al., 2023).

Simply put, these favorable business process results might align agents' interests with those of the company from the perspective of a mediator (Mafini et al., 2020). Agents are more likely to view ethical behavior as not just desirable but also essential to obtaining desired results when they see how these outcomes favorably affect their positions and the business as a whole (Farrukh et al., 2022). As a result of their direct correlation with organizational performance, increased productivity, and improved professional reputation, ethical actions become more alluring options (Mwelu et al., 2023).

In conclusion, Agency Theory draws attention to the possibility for ethical issues and conflicts of interest in the field of electronic procurement (Dehghanpouri et al., 2020). As the goals of principals and agents are aligned, the mediating function of business process results is clearly seen (Augustine, 2021). Organizations may build a culture where ethical behavior is not only promoted but also seen as a necessary step toward attaining outcomes that benefit both parties by improving procedures to increase openness, effectiveness while and responsibility. The aforementioned theoretical structure provides insights into how businesses might strategically use business process changes to promote moral conduct within their procurement staff (Dehghanpouri et al., 2020).

2.3.2 Social Exchange Theory

A complex view of how business process results might mediate the connection among e-procurement procedures and moral conduct inside firms is offered by social exchange theory (Kumar and Ganguly, 2021). This theory gives insight on how streamlining company operations may alter shareholder dynamics and have an impact on ethical behavior. It is based on the premise that human relationships are regulated by the exchange of assets, advantages, and cultural standards (AlNuaimi et al., 2021). In addition, the Social Exchange Theory acknowledges that ethical behaviors are not separate acts but rather are woven into an intricate structure of social relationships in the setting of e-procurement. Practitioners in e-procurement interact with a variety of all parties involved, such as vendors coworkers, and the business as a whole, in their capacity as agents (Pattanayak and Punyatoya, 2019). Factors like knowledge, collaboration, and trust are exchanged in these interactions. These exchanges' quality can be affected by poor business practices, which might tilt the costs and benefits in a way that could influence moral judgment (Singh and Chan, 2022).

Furthermore, within the aforementioned structure for trade, enhanced Business Process Outcomes serve as mediators (Kumar and Ganguly, 2020). Corporations may create a more hospitable atmosphere for exchange by improving procedures. A fair allocation of finances and advantages is seen by other interested parties thanks to the openness and accountability that e-procurement systems foster. Stakeholders are more inclined to engage in conversations that are marked by mutual respect and trust when they experienced openness (She and Li, 2023).

Moreover, these enhanced interactions, made possible by improved corporate procedures, have a knock-on influence on moral conduct (Zhang et al., 2022). Participating stakeholders are more likely to respect ethical standards when they have good and fair interactions. It becomes crucial to act ethically to preserve a favorable exchange atmosphere. Examples include being fair in supplier relationships and being honest in reporting. Agents are aware that upholding moral principles improves their reputation, fosters stakeholder confidence, and promotes the long-term viability of beneficial exchanges (Ghouri et al., 2021).

The potential of business process outcomes to rebalance the ratio of costs to advantages in exchanges is another way that social exchange theory theorizes that they play a mediating function (Zhou et al., 2022). Concerned parties may believe that their initiatives are being misused or that their actions are being devalued when processes are ineffective or opaque. Given that they may feel justifiable in promoting their own financial goals without regard for ethical issues, people may lack commitment to ethical activities as a result of this perspective (Mélou and Spruk, 2020).

Stakeholder demands, on the other hand, realize that their achievements are acknowledged and that they are a part of a reciprocal exchange when procedures are improved and results are favorable (Fazekas and Blum, 2021). The stakeholders are compelled to behave morally to maintain the integrity of the positive trade dynamic as a result of this acknowledgment, which also develops a sense of reciprocity. Beyond only being morally required, ethical behavior also becomes a calculated decision that ensures the continuance of win-win interactions (Nurdin, 2021). To sum up, Social Exchange Theory provides significant insights into the mediating role performed by business process results in the link between ethical conduct and e-procurement practices (Arayankalam et al., 2021). This theory highlights how successful outcomes alter stakeholder views and motives by highlighting the need of fair and equitable exchanges made possible by streamlined procedures (Maddi et al., 2020). In the end, these results provide a setting where moral conduct is not just valued but also woven into the very fabric of relationships, fostering a culture of honesty and long-term cooperation (Nurdin, 2021).

2.4 Empirical Literature Review

This section aims to present and synthesize the findings, methodologies, and conclusions of previously conducted studies in the field, demonstrating how they contribute to the understanding of the mediating role played by business process outcomes in the e-procurement and ethical behaviors model with empirical evidence from public institutions.

2.4.1 The Relationship Between E-Procurement and Ethical Behaviour

Mwandembwa and Matiku (2022) to investigate how e-procurement has improved Mzinga Corporation's ethical behavior. The case study approach was used to gather qualitative information from Mzinga Corporation's divisions of shops, ICT, and human resource management. The interviews and focus groups comprised a total of 45 people. Thematic analysis was used in data analysis. The study's conclusions demonstrated that the adoption

of e-procurement had an impact on employees' ethical behavior. E-procurement, transparent specifications in the procurement system, a single platform for all procurement operations, decreased collusion and corruption, and unethical behavior. These actions decreased theft and corruption-related unethical behavior. The study also discovered that the usage of e-procurement has decreased disputes through fostering partnerships, upholding fairness and equity for suppliers and bidders, and decreasing bureaucratic complications. It was determined that e-procurement is a crucial instrument and a platform that connects the supplier pool with government organizations. One advantage of e-procurement is that it may regulate employee behavior in the public sector. Mzinga Corporation has ethical guidelines to help the employees perform ethically. It is advised that the procurement process be transparent and available to all workers in order to increase inclusion and involvement for the institution's best interests in resource management.

Kumar and Ganguly (2020) establish non-financial e-procurement performance metrics and determine if they are a leading predictor of the influence that e-procurement adoption will have on a firm's financial performance in terms of a decrease in production costs. The study approach has been put to the test using information gathered from target Indian procurement experts. The conceptual model hypothesis of mediation has been tested using structural equation modeling. For testing various mediators, the phantom model method has been implemented. According to the results of the current empirical study, adoption of e-procurement has a positive influence on production costs by increasing transparency, coordination, efficiency, and effectiveness, which are non-financial performance indicators of e-procurement. This study makes the case for managers to work on designing an e-procurement platform or choosing a third-party platform that keeps transaction costs to a minimum for improved coordination, working on a transparency policy with maximum information disclosure for improved transparency, and requesting a quick and

responsive system for improved efficiency and effectiveness. For the first time, this study sought to uncover non-financial performance indicators for e-procurement and to comprehend how these intermediate indicators affect company financial success. The study model has been constructed to experimentally analyze the interdependence of these financial measurements and its influence on production cost. The interdependence of non-financial performance variables has also been investigated.

Akbar (2019) experimentally investigate and demonstrate the moderating influence of an organization's ethical culture on the link between the adoption of e-procurement and the internal control system of the government with regard to fraud prevention in the purchase of goods and services. The 55 samples that were acquired using the purposive sampling strategy were examined using moderated regression analysis. The outcomes reveal numerous conclusions. First, the use of e-procurement has a big impact on preventing fraud. Second, fraud prevention is significantly impacted by the internal control structure of the government. The third and fourth findings show that the organizational ethical culture is supported as a moderating factor.

Sánchez-Rodríguez et al. (2020) examines e-procurement in small and medium-sized businesses (SMEs), its link to top management support, IT roadblocks, strategic purchasing, and its impact on performance (both business and procurement performance). A sample of 199 managers from manufacturing-related SMEs was used to test the hypotheses. The findings showed a substantial correlation between top management support, IT challenges, and strategic purchasing and e-procurement in SMEs. In a similar vein, the authors discovered a favorable correlation between company success and e-procurement and procurement process performance. When implementing e-procurement, the findings emphasize to SME managers the necessity to pay attention to top management support, IT challenges, and strategic purchasing. The benefits of e-procurement on

corporate performance and procurement process effectiveness are also demonstrated. This study addresses a gap in the literature by examining the performance effects of e-procurement in SMEs. The performance of SMEs, which make up a sizable portion of today's economy, may be greatly impacted by e-procurement.

Seo et al. (2018) The adoption of e-government services continues to be a major concern for academics and professionals. Although there has been significant progress in our understanding of how citizens have adopted e-government services, the knowledge of vendors' willingness to participate in government-to-business transactions (such as e-procurement) is much more limited in comparison, particularly from the perspectives of service convenience and performance failure. Due to this, there have been rising requests for more research on the variables influencing vendors' adoption of e-government services, particularly those present in developing nations. The paper advances a theoretical model based on the compatibility principle that attributes performance issues with e-government systems to object-based perceptions that influence vendors' behavioral-based ideas about the ease of their services. The find that the presence of information, function, and system failures negatively influences vendors' assessments of service convenience and that the effects of these failures vary across various dimensions of service convenience after analysing survey data gathered from 227 vendors based in Indonesia about their experiences with e-government procurement systems. The ease of using a service and performance issues, in turn, have opposing effects on suppliers' satisfaction with e-government systems.

2.4.2 The Link Between Business Process Outcomes and Ethical Behaviour

Schwepker (2019) gain a better understanding of how organizational members' job attitudes and employee perceptions may affect their ability to ethically provide value for customers. The idea is that high person-organization fit perception, more specifically

ethical values person-organization fit perception, can influence business-to-business salesperson commitment to delivering superior customer value both directly and indirectly through trust in sales manager while encouraging ethical salesforce behavior, a crucial component of communicating and delivering customer value. According to findings from a research of 408 business-to-business salespeople, a salesperson's dedication to delivering excellent customer value and management trust are favourably influenced by the ethical principle's person-organization fit. Commitment to customer value is directly impacted by manager trust, which also mediates the link between unethical intent and the fit between an individual's ethical ideals and the business. Future research directions are also presented, along with theoretical and managerial consequences.

Govind et al. (2019) examine the attitude-behavior gap in ethical consumption that has been noted in the literature but less examined. The research bases its arguments on the dual attitudes concept and puts those reasons to the test. According to the study, people's implicit and explicit views, which are influenced differently by stimuli, elicit distinct behavioral reactions, and have various ramifications for company ethics policy, are to blame for the ethical consumerism divide. To further comprehend how a person's dual attitudes affect preferences and decision, two longitudinal experiments are done. The results confirm that customers have contradictory mindsets. It is discovered that the nature of the stimuli has a simple way of influencing explicit sentiments. Implicit attitudes, on the other hand, are mostly influenced by the type of stimuli present and stay largely constant. According to the results, implicit attitudes influence behavior and shape a person's preferences. Despite the fact that explicit attitudes respond to the stimuli offered, our research indicates they have little influence on the decisions made by customers. These results contribute to a better knowledge of ethical consumption, explain why the attitude-

behavior gap exists, lay a framework for future study, and aid businesses in understanding the influence of perceived business on influencing ethical purchasing behavior.

Dimitriou and Ducette (2018) In order to assist hotels, comprehend the root of the problem, this study aims to pinpoint the key variables that have an influence on hotel staff members' ethical conduct. In order to see if the outcomes of Deshpande, Joseph, and Prasad's (2006) study, which was done in hospitals, will be similar, this study particularly aims to duplicate their work in three-, four-, and five-star hotels in Greece. This study is among the first ones to be undertaken in hotels as most research studies on this issue have been carried out in non-hospitality settings. It is based on a prior study that the first author presented at the EuroCHRIE 2013 conference in Freiburg, Germany. The following variables were looked at: the participants' experience in the position they were in as well as the hotel industry as a whole; their peers' and managers' ethical behavior; the hotel staff members' education in business ethics; and the role of gender, nationality, age, level of education, and their experience in the position they were in. The findings showed that several of these variables have a significant role in dictating how employees behave ethically in every situation.

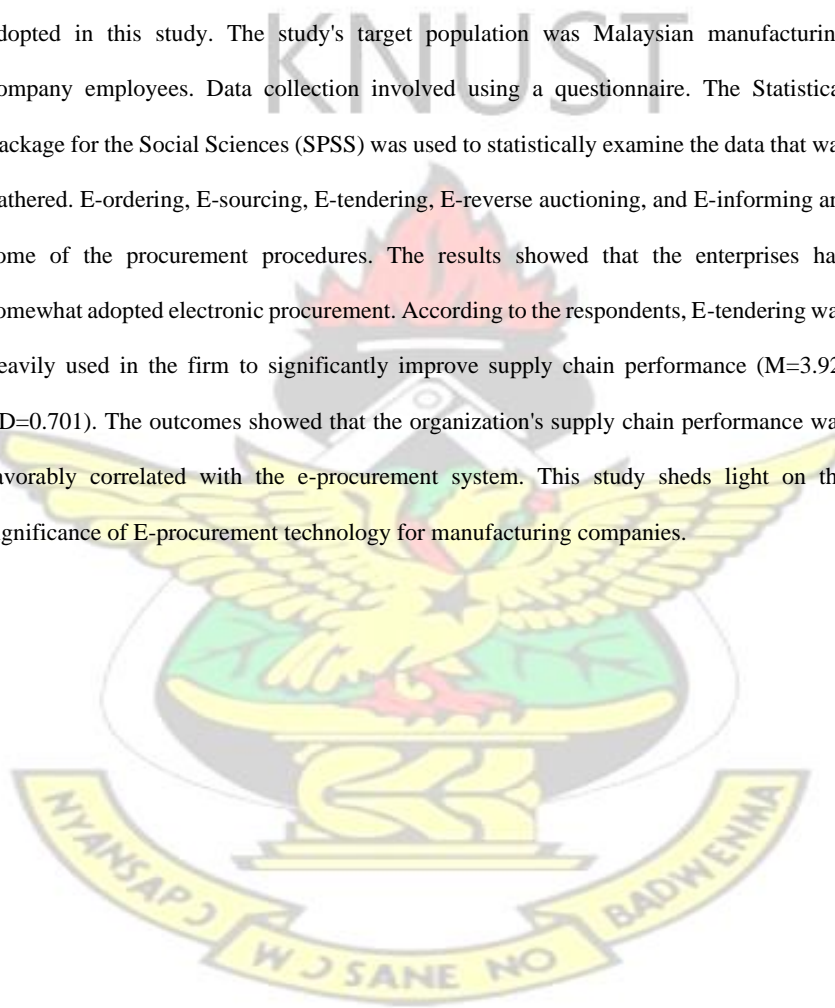
2.4.3 Establish Mediating Effect of Business Process Outcomes in the E-Procurement and Ethical Behaviour Model

Kumar and Ganguly (2020) identify non-financial e-procurement effectiveness indicators of performance and determine whether they are a leading indicator of the impact that e-procurement adoption will have on the financial health of an organization in terms of a decrease in production costs. The study approach has been put to the test using information gathered from target Indian procurement experts. For the purpose of evaluating conceptual model assumptions, such as mediation, structural equation modeling has been employed. For testing numerous mediators, the phantom model method has been used. Transparency, coordination, efficiency, and effectiveness are primary indicators of the influence of e-

procurement adoption on production costs, according to the results of the current empirical study. This paper suggests that managers should work on a transparency policy with maximum information disclosure for enhanced transparency, request a quick and responsive system for enhanced efficiency and effectiveness, and try to design the e-procurement platform or choose a third-party platform that reduces transaction costs to a minimum for enhanced coordination. In order to understand how these intermediate non-financial performance measures affect the firm's financial performance, this study sought to identify non-financial performance metrics of e-procurement for the first time. A study model has been built to experimentally analyze the interdependence of these financial metrics and their influence on production costs. The interdependence of non-financial performance variables has also been investigated.

Masudin et al. (2021) examines e-procurement in small and medium-sized businesses (SMEs), its link to top management support, IT roadblocks, strategic purchasing, and its impact on performance (both business and procurement performance). A sample of 199 managers from manufacturing-related SMEs was used to test the hypotheses. The findings showed a substantial correlation between top management support, IT challenges, and strategic purchasing and e-procurement in SMEs. In a similar vein, the authors discovered a favorable correlation between company success and e-procurement and procurement process performance. When implementing e-procurement, the findings emphasize to SME managers the necessity to pay attention to top management support, IT challenges, and strategic purchasing. The benefits of e-procurement on corporate performance and procurement process effectiveness are also demonstrated. This study addresses a gap in the literature by examining the performance effects of e-procurement in SMEs. The performance of SMEs, which make up a sizable portion of today's economy, may be greatly impacted by e-procurement.

Tiwari et al. (2019) ascertain the degree of e-procurement deployment in Malaysian firms and to establish a link between supply chain performance across Malaysian businesses and the e-procurement system. Technology Acceptance Model, one of the pertinent e-procurement theories, served as the study's foundation. A descriptive research design was adopted in this study. The study's target population was Malaysian manufacturing company employees. Data collection involved using a questionnaire. The Statistical Package for the Social Sciences (SPSS) was used to statistically examine the data that was gathered. E-ordering, E-sourcing, E-tendering, E-reverse auctioning, and E-informing are some of the procurement procedures. The results showed that the enterprises had somewhat adopted electronic procurement. According to the respondents, E-tendering was heavily used in the firm to significantly improve supply chain performance ($M=3.92$, $SD=0.701$). The outcomes showed that the organization's supply chain performance was favorably correlated with the e-procurement system. This study sheds light on the significance of E-procurement technology for manufacturing companies.



2.5 Conceptual Framework/ Model

The Agency Theory and its application to the Social Exchange Theory serve as the theoretical framework's two fundamental pillars (see Figure 2.1). It is expected that the mediating role played by business process outcomes in the e-procurement and ethical behaviors model with empirical evidence from public institutions.

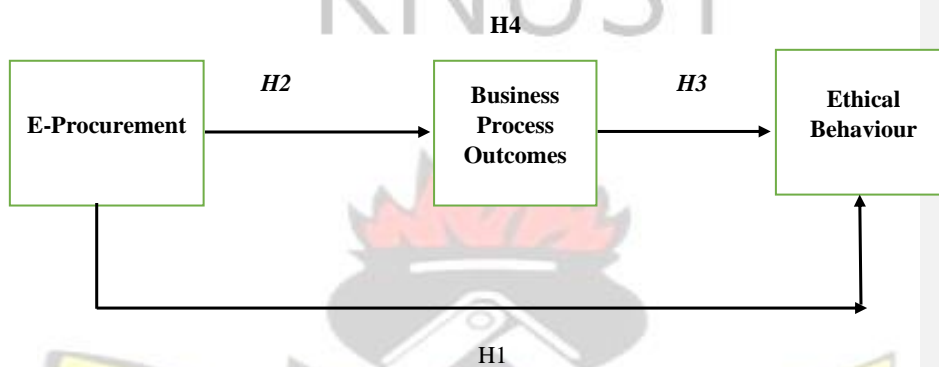


Figure 2.1 Conceptual framework

H₁. *E-Procurement has a positive and significant effect on Ethical Behaviour*

H₂. *E-Procurement has a positive and significant effect on Business Process Outcomes*

H₃. *Business Process Outcomes has a positive and significant effect on Ethical Behaviour*

H₄. *Business Process Outcomes mediates the relationship between E-Procurement and Ethical Behaviour*

2.6 Hypotheses Development

The main concepts covered in this study's chapter are depicted in Figure 2.1 above. The research paradigm has been used to establish and manage subareas for each of the statements.

2.6.1 Hypothesis 1: E-Procurement on Ethical Behaviour

The behaviors, choices, and behaviour of people or organizations that adhere to widely recognized moral and ethical norms and principles are referred to as ethical behavior (Mwandembwa and Matiku, 2022). It entails acting morally upright and justly, showing respect for others, and respecting ethical standards within a certain setting, society, or organization. Furthermore, increased openness is where e-procurement's impact on ethical conduct starts (Fourie and Malan, 2021). Stakeholders now have more access to data on vendor selection, price, and transaction specifics thanks to digital systems that offer real-time visibility into procurement processes. This openness discourages unethical practices like favoritism and covert bribes since any inconsistencies are more likely to be found and swiftly resolved (Norziation et al., 2021). As a consequence, because they are aware that their behavior is being watched, those who are active in procurement operations are more likely to uphold ethical standards. In conclusion, the adoption of e-procurement procedures has a favorable and comprehensive influence on moral conduct within businesses (Addo, 2019). E-procurement promotes an atmosphere where ethical behaviour is both encouraged and enabled through increased openness, standardized processes, efficiency gains, improved external engagement, and rigorous monitoring (Maria et al., 2023). Ethics is still a basic cornerstone of procurement procedures, ensuring that integrity and transparency are still essential components of procurement operations even as technology continues to transform procurement methods (Molepo and Jahed, 2022). Mwandembwa and Matiku (2022) state that the study's findings demonstrated that the adoption of e-procurement had an impact on employees' ethical behavior. Thus: ***H₁. E-Procurement has a positive and significant effect on Ethical Behaviour***

2.6.2 Hypothesis 2: E-Procurement on Business Process Outcomes

The results, affects, or repercussions that follow from the management and execution of particular business processes inside a corporation are referred to as business process outcomes (Masudin et al., 2021). These consequences are either directly or indirectly the outcome of the way procedures is developed, put into practice, and maintained. They may significantly affect a company's efficiency, effectiveness, customer satisfaction, and strategic goals (Hapsari, 2022). The influence of e-procurement also goes to strategic alignment. Companies may frequently establish approval hierarchies, adapt procedures, and enforce complying with procurement standards using modern e-procurement technologies. By customizing them, company operations are made to conform to both industry rules and the organization's strategic goals (Dachyar and Karenina, 2020). As a result, it is easier to direct procurement operations toward strategic goals, making sure that assets are deployed where they will have the biggest impact. In conclusion, e-procurement has a significant and revolutionary impact on the results of business processes. Businesses stand to profit much from the implementation of digital procuring systems, from greater strategy realignment to increased efficiency and transparency (Pattanayak and Punyatoya, 2019). These results add up to operations that are more efficient, cost savings, and a more competitive, ethical approach to purchasing procedures (Yuen and Cheng, 2023). The performance of the procurement process and e-procurement were shown to have a favorable impact on business performance, according to Sánchez-Rodrguez et al. (2020). In order to successfully adopt e-procurement, SME managers must pay close attention to top management support, IT challenges, and strategic purchasing, according to the findings. Thus: ***H₂. E-Procurement has a positive and significant effect on Business Process Outcomes***

2.6.3 Hypothesis 3: Business Process Outcomes on Ethical Behaviour

The behaviors, choices, and behaviour of people or organizations that adhere to widely recognized moral and ethical norms and principles are referred to as ethical behavior (Munoko et al., 2020). It entails acting morally upright and justly, showing respect for others, and respecting ethical standards within a certain setting, society, or organization. Additionally, improved business process results frequently result in greater efficiency and transparency. Tasks are carried out quicker and more effortlessly when processes are simplified (Enholm et al., 2022). This effectiveness lessens the possibility of bottlenecks and delays, reducing the pressure on people to take shortcuts or use unethical methods to fulfill deadlines. Employees are encouraged to act ethically as they realize they may use ethical methods to attain desired results without compromising their ideals (Wamba-Taguimdje et al., 2020). In conclusion, business process results have a significant and complex impact on ethical conduct. Process optimization fosters effectiveness, accountability, fairness, and strategic coordination, all of which contribute to a culture that not only supports but also nurtures ethical conduct. Corporations may make sure that ethical issues stay at the center of their daily activities while contributing to their long-term success by developing a culture of honesty and accountability (Hartley and Sawaya, 2019). Sánchez-Rodriguez et al. (2020) discovered a favorable correlation between the effectiveness of e-procurement and the procurement process and corporate performance. When implementing e-procurement, the findings emphasize to SME managers the necessity to pay attention to top management support, IT challenges, and strategic purchasing. Thus:

H₃. Business Process Outcomes has a positive and significant effect on Ethical Behaviour

2.6.4 Hypothesis 4: Business Process Outcomes mediates E-Procurement and

Ethical Behaviour

Electronic procurement solutions improve the speed, precision, and transparency of the purchasing procedure. They increase the efficiency of corporate processes by streamlining workflows, automating operations, and centralizing knowledge (Kumar and Ganguly, 2021). These results include faster processing times, fewer mistakes, and more visibility. As a result, the mediating influence of these results is visible in the moral conduct of staff members involved in the procurement processes (Almajali et al., 2023). Moreover, the influence that business process outputs have on fostering an ethical atmosphere is what serves as the mediating factor. When purchasing participants operate within an environment that encourages moral decision-making, procedures can be optimized (Pattanayak and Punyatoya, 2019). Workers have a clear grasp of their duties and responsibilities because to the decreased complication and enhanced clarity brought about by better procedures. A more mindful and considerate response to ethical concerns is made possible by this clarity (Fourie and Malan, 2021). In the end, the business process outcomes' intermediary role in the link among e-procurement and ethical conduct emphasizes the importance of these results in creating an ethical and principled company culture. Ethical conduct may grow as a result of e-procurement innovations that increase effectiveness, accessibility, and strategic alignment. Businesses that use these favorable results to promote moral behavior develop an atmosphere where values, openness, and effectiveness come together to fuel long-term success (Nurdin, 2021). Sánchez-Rodriguez et al. (2020) discovered a favorable correlation between the effectiveness of e-procurement and the procurement process and corporate performance. When implementing e-procurement, the findings emphasize to SME managers the necessity to pay attention to top management support, IT challenges, and strategic purchasing. Utilizing data gathered

from employees working for various firms, Valentine and Godkin (2019) conducted an investigation that shows that multiple aspects of moral intensity, primarily a seriousness of repercussions and social consensus, are beneficially related to elements associated with ethical decision making, specifically the awareness and perceived significance of an ethical issue, moral assessment, and ethical intention. Thus: *H4. Business Process Outcomes mediates the relationship between E-Procurement and Ethical Behaviour*

2.7 Chapter Summary

The study aimed at exploring the impact of digital operations on operational performance in SMEs: examining the role of digital culture and the effect of digital capability. There were five major components in the literature review that is the “Conceptual Literature Review, Theoretical Literature Review, Empirical Review, Conceptual Framework, and Hypothesis Formulation”. The research variables were thoroughly defined in the conceptual review, which was a part of the first section, along with an explanation of how they were employed in the study. Electronic Procurement, Ethical Behavior, and Business Process Outcomes are the make up the variables of the study. The theoretical review, which was the second section, recognised the theory mentioned in the thesis. The third component, an empirical evaluation, uncovered earlier research on the project's goals. The fifth and last element is the conceptual framework, which shows how the variables relate to one another. Creating hypotheses was the fifth phase, which required reading up on the relationships between the research variables. The next chapter, chapter three, contains the methodology of the study.

CHAPTER THREE

METHODOLOGY AND ORGANISATIONAL PROFILE

3.1 Introduction

The methodologies and procedures are objectively given in this chapter. The tactics described in this chapter are meant to accomplish the goals of the study and address its research questions. The methodology chapter's introductory paragraphs gave detailed explanations of the research design, sampling methods, and research instrument. In the last section of this research report, the suggested data analysis is explained.

3.2 Research Design

In this study, quantitative data were gathered using the explanatory design and quantitative research approach. After conducting the analysis, logical reasoning was used to reach the conclusions. A researcher can predict the outcome of a hypothesis by basing a study on it utilizing the deductive process (Wang and Cheng, 2020). Quantitative methods are widely used in deductive reasoning. Annual reports, bank scopes, data stream databases, and company websites are widely used in the quantitative approach of data collection for the survey report. To understand, predict, and/or manage occurrences, quantitative researchers gather and analyze numerical data. It gives a comprehensive overview of the pertinent testable research and has a strong emphasis on looking at the relationships between various components. When exploratory research is carried out and there is insufficient knowledge about a phenomenon or when a problem has not been precisely identified, the explanatory design is appropriate (Mneimneh et al., 2021). Instead of providing specific solutions to the study's questions, it seeks to examine the issue from a variety of perspectives.

According to Mneimneh et al. (2021) the conference will focus on fresh topics that have seen little to no prior research. Exploratory research lays the groundwork for more conclusive study even in the most difficult situations by establishing the original research

topic, sample methodology, and data collection method (Casula et al., 2021). It builds on descriptive and exploratory research to identify the true causes of a phenomenon's recurrence. An explanatory research looks for factors, explanations, and information that either support or refute a theory or prediction. It is done to look for and document any connections between different aspects of the event under consideration. Understanding how business process outcomes could mediate the effect of e-procurement on ethical behaviour was the main goal of this study. To do this, statistical and quantitative data must be generated, and efforts must be made to maintain the relationship with previously established quantitative research. Therefore, the optimum research design is one that addresses the how and why of the primary research issue. In order to ensure a thorough understanding of the phenomenon under study, the optimum research design is one that offers explanations for both the how and why of the primary research problem.

3.3 Population of the Study

Top and medium level managers in logistics, supply chain, and operations at Ghanaian public institutions made up the population of the study because the firms serves as the unit of analysis. The people in these organizations who hold managerial positions are the target audience.

3.4 Sample Size and Sampling Technique

Every study must make a critical choice regarding the ideal sample size. The majority of researchers accept a sample size of 100 to 150 subjects, while other researchers (Cao et al., 2022; Hair et al., 2021; RVSPK et al., 2020) have determined that the minimum acceptable sample size is 200 observations. According to Qian et al. (2022), 400 observations constitute the bare minimum acceptable sample size for studies with moderately complex conceptual models. According to Yang et al. (2019), who examined a variety of publications, sample sizes typically ranged from 250 to 500 subjects.

Researchers also contend that the general rule of 3 to 20 subjects per variable can be used to estimate the sample size for a study. The sample size for this study should be somewhere around 220 subjects because it has three factors and the general rule of thumb is 20 subjects for each factor. Nevertheless, to reflect the population size of the study, a sample size of 250 was chosen based on Jan and Shieh's (2014) recommendations for population size and a suitable sample size.

With regards to the sampling technique, this study employed both probability sampling and non-probability sampling methods. At the institutional level, public institutions were initially grouped into service and non-service using quota sampling technique. After that, organizations were then selected randomly. At individual level, top and middle managers such as supply chain, procurement officers or expertise in related field were selected purposefully. With this strategy, the researcher was only interested in people who possessed the traits and understanding of the subject under investigation. Thus, the researcher assert that this group of individuals were deemed reliable to provide the necessary information in responding to the research questions. However, the researcher only chose specific SC and operational officers who were available, willing, and able to engage in the study using the convenience technique. With this strategy, the researcher was far more interested in subjects who wanted to take part in the study and were not persuaded by the researcher rather than those who were forced or persuaded to participate.

3.5 Data Collection

A structure questionnaire was employed to gather quantitative primary data for this investigation. To make instrument validation easier, the study used a version of the questionnaire from earlier investigations. Two major sections made up the framework of the instrument that was created. Questions about respondent and organization characteristics were included in section one. The second section covered questions on the

study variables (see Table 3.1). Only closed-ended, Likert-scale questions were used in this instrument. This scale was used to ensure that respondents are specific and express their agreement or disagreement with the items presented. Shut-finished requests are also useful and efficient for the two respondents and the researcher (Shelley and Horner, 2021). For an effective instrument in data collection, the researcher conducted a pilot study using 30 institutions to ensure the items on the questionnaire served the purpose of the study, even though these items were initially validated by previous studies. After the piloting, all errors were detected and corrected to suit the main survey. It emerged that the instrument produced a high *Cronbach's alpha* above the threshold of 0.70 in terms of reliability (see Appendix). This implies that the instrument was reliable to obtain the study purpose.

Table 3.1: Operationalization of research variables

Name of variable	Definition	No. of Items/sub-dimensions	Sources
E-procurement	The process of purchasing goods and services through online platforms.	E-design (4-items) E-sourcing (4-items) E-negotiation (3-items) E-evaluation (3-items)	Chang et al. (2013)
Ethical behaviour	A set of values and principles that serve as a guide for people and organizations when making morally righteous decisions.	Corruption (5-items) Organizational control (4-items)	Asamoah and Andoh-Baidoo (2018);
Business process outcomes	Results of the various e-procurement procedures and activities, including cost savings, supplier relationships, and the effectiveness of the procurement process.	Effectiveness (6-items) Efficiency (3-items) Flexibility (4-items)	Asamoah and Andoh-Baidoo (2018); Karimi et al. (2007)

Source: Researcher's construct (2023)

The use of an electronic questionnaire (Google form) was strictly followed by data collection. This approach to collecting primary quantitative data is not only acceptable in academic research but also produces a high rate of response. Before the data were

collected, the researcher reached out to authorities of selected firms to seek permission to engage their firm and individuals in the study. In doing so, the researcher took the opportunity to debrief the organizations on the study's intention. Upon approval, the researcher and three other trained research assistants administered the questionnaires. All ethical issues that affected the data collection process were dealt with by the researcher. In line with this, the researcher ensured that the names of individual respondents or any identifiable items that could be linked to any participants were excluded from the instrument. Respondents were also assured of the confidentiality of their information as well as anonymity. They were also assured that they could withdraw from the study at any point in time if they felt the need to do so. Respondents who felt uneasy about providing a certain response to a particular question related to their job were allowed to skip such questions. The data collection process spanned for a period of August, 2023 to September, 2023.

3.6 Data Analysis

To achieve its objectives, this study combined descriptive analysis with multivariate data analytics like factor analysis and structural equation modeling (SEM). As analysis tools, Amos and the Statistical Package for Social Sciences (SPSS) version 26.0 were instruments for data analyses. Before the data set is sent to Amos for further analysis, the SPSS application was applied for data coding, input, cleaning, and exploration. The collected data were checked before being transferred to minimize errors, ensure that all scores were within the acceptable range for the scale, and ensure that no entering of incorrectly numbers. The statistical connection between the variables in this study were examined using the maximum likelihood estimation method, which was applied to all questions in confirmatory factor analysis (CFA), common method analysis, descriptive

statistics, inter-construct correlations, and multiple regression analysis, among other tests (Hair et al., 2021).

3.7 Validity and Reliability

In line with the above, tests for reliability verify that a survey instrument generates the same results across measures, whether they are conducted with the same population or with a similar population (Cohen et al., 2017). By measuring or analysing the Cronbach alpha coefficient, it is possible to determine or analyse the instrument's reliability. Following Amirrudin et al. (2021) *Cronbach alpha* coefficient of 0.7 or higher was considered to be a reliable instrument to meet the reliability standard.

Further, the process of ensuring that the survey accurately measured what it was intended to evaluate in terms of constructs in the model is known as validity of research instrument (Sürücü and Maslakçi, 2020). For data collection and analysis, proper research processes will be followed in order to verify the validity of the results. The instrument was presented to the supervisory team of experts to review the instrument. Once corrections were approved, no changes were made to the questionnaire and was distributed as such. The validity of the instrument was measured using the discriminant validity, convergent validity and average variance extracts.

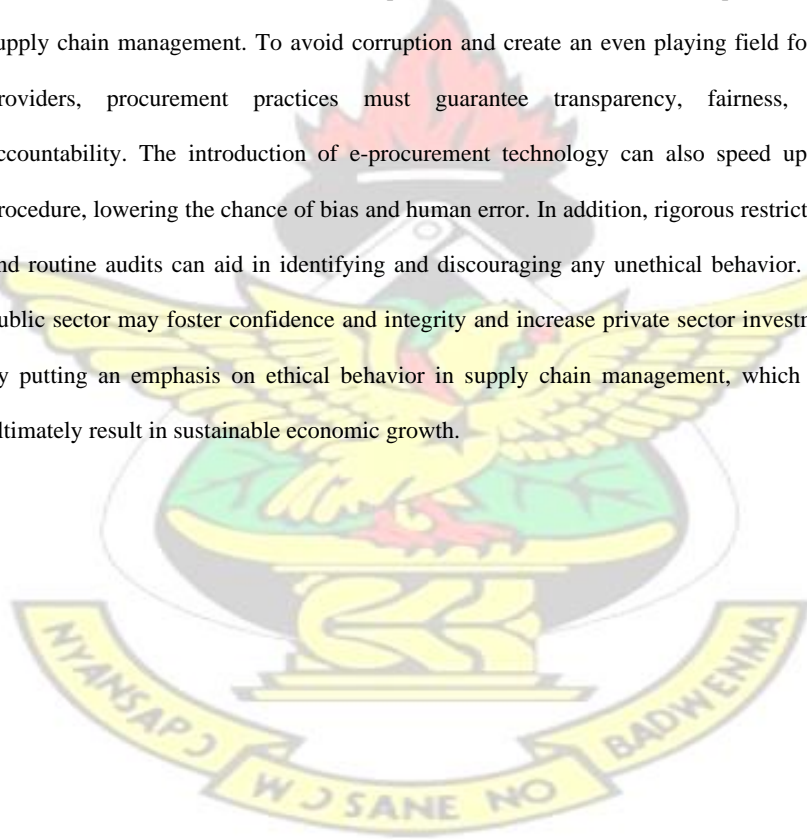
3.8 Ethical Consideration

In this study, some significant ethical issues in research were covered. Overviews was given on a mission to individuals who consented to take part in the study once the field officers had the approval from the administration of the respondents and firms. In order to get their attention and encourage them to participate in the survey, the participants were made aware of the significance and purpose of the study. Additionally, those who were unable to finish the questionnaire were disqualified from the study even though justification appeals were provided to the respondents. The study guaranteed and ensured

the respondents' or firms' confidentiality at the same time. Finally, the information gathered were only utilized for it intended purpose.

3.9 Organizational Profile

Impact on economic growth and job creation is a significant component of the public sector's contribution. The public sector is vital in promoting economic growth and generating job opportunities through funding infrastructure projects and offering necessary services. But it is crucial to address the problems with ethical conduct in public sector supply chain management. To avoid corruption and create an even playing field for all providers, procurement practices must guarantee transparency, fairness, and accountability. The introduction of e-procurement technology can also speed up the procedure, lowering the chance of bias and human error. In addition, rigorous restrictions and routine audits can aid in identifying and discouraging any unethical behavior. The public sector may foster confidence and integrity and increase private sector investment by putting an emphasis on ethical behavior in supply chain management, which will ultimately result in sustainable economic growth.



CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND DISCUSSION

4.1 Introduction

This section presents the data analysis performed by the researcher. The background information of the study participants was first provided. The evaluation of the measurement model was then discussed. In the next part, the results of the hypotheses were presented. The findings from the study were then discussed.

4.2 Demographic Data

The demographic data shows that 39.6% of the participants were females while 60.4% were males. Also, 2.8% of the participants were 23 years and below, 13.2% were between 24-29 years, 38.0% were also between 30-35 years, 28.4% were between 36-40 years and 17.6% were also 41 years and above. 34.4% of the participants have specified that their firms have been operation for 1-5 years, 12.0% indicated 11-15 years, 8.8% indicated 16-20 years, 19.6% also indicated 21 years and above, 23.2% also indicated 6-10 years and 2.0% also indicated less than a year.

Table 4.1 Demographic Data

Variables	Frequency	Percent
Gender		
Female	99	39.6
Male	151	60.4
Age		
23 years and below	7	2.8
24-29 years	33	13.2
30-35 years	95	38.0
36-40 years	71	28.4
41 years and above	44	17.6
Number of years the firm has been in operation :		
1-5 years	86	34.4
11-15 years	30	12.0
16-20 years	22	8.8
21 years & above	49	19.6
6-10 years	58	23.2
Less than 1 Year	5	2.0
Total	250	100.0

4.3 Descriptive statistics and Distribution (Normality)

The research is centred on the measures of central tendency. The results are shown in the table 4.2 below. The mean values of the items exhibit a range between 4.16 and 5.51, which denotes the average score or rating attributed to each item. In general, items that exhibit higher means tend to correspond with higher scores or ratings, whereas those with lower means tend to correspond with lower scores. The range of standard deviation values observed is between 1.324 and 2.020. The presence of a higher standard deviation in a set of scores or ratings suggests a greater degree of variability, thereby indicating a wider range of responses. On the contrary, objects exhibiting lower standard deviations manifest reduced variability, indicating a greater degree of uniformity in the evaluations.

Skewness is a statistical measure that quantifies the degree of symmetry of a given distribution. A distribution exhibiting negative skewness values is indicative of a left-skewed distribution, characterised by a longer tail on the left-hand side. A distribution that is skewed to the right can be inferred from positive skewness values. The dataset exhibits predominantly negative skewness values, which fall within the range of -0.167 to -1.325. This suggests that the distribution of these items is skewed to the left. Kurtosis is a statistical measure that quantifies the degree of peakedness or flatness of a probability distribution. Kurtosis values that are positive signify a distribution that has tails that are heavier and a peak that is sharper. Conversely, negative kurtosis values indicate a distribution that is flatter with tails that are lighter. The majority of the items within the dataset exhibit kurtosis values that are in proximity to zero, with a range spanning from -0.102 to 1.606. This implies that the distributions of said items exhibit a degree of proximity to a normal distribution. The evidence of data normality provides a justification for the utilisation of covariance-based statistical software like the Amos.

Table 4.2 Descriptive Statistics

Items	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
EDS1	250	1	7	4.88	1.943	-0.846	-0.567
EDS2	250	1	7	4.68	1.876	-0.769	-0.629
EDS3	248	1	7	4.76	1.874	-0.72	-0.698
EDS4	250	1	7	4.59	1.941	-0.574	-0.916
ESN1	250	1	7	5.03	1.809	-0.85	-0.435
ESN2	250	1	7	4.9	1.827	-0.84	-0.454
ESN3	250	1	7	4.65	1.948	-0.583	-0.834
ESN4	250	1	7	4.87	1.857	-0.921	-0.378
ENG1	250	1	7	4.16	1.866	-0.244	-1.153
ENG2	250	1	7	4.4	2.02	-0.413	-1.291
ENG3	250	1	7	4.32	1.921	-0.397	-1.143
EVN1	250	1	7	4.61	1.947	-0.619	-0.924
EVN2	250	1	7	5.05	1.768	-1.042	0.074
EVN3	250	1	7	4.63	1.906	-0.558	-0.96
COR1	250	1	7	5.16	1.828	-1.107	0.203
COR2	250	1	7	5.34	1.705	-1.325	0.867
COR3	250	1	7	4.95	1.776	-0.859	-0.205
COR4	247	1	7	4.76	1.921	-0.657	-0.796
COR5	250	1	7	4.22	1.904	-0.301	-1.23
OC1	250	1	7	4.05	1.962	-0.176	-1.302
OC2	250	1	7	4.13	1.874	-0.167	-1.122
OC3	250	1	7	4.54	1.899	-0.515	-1.035
OC4	250	1	7	4.14	1.903	-0.347	-1.174

ECFO 1	25 0	1	7	5.06	1.699	-0.893	-0.102
ECFO 2	25 0	1	7	5.13	1.56	-1.066	0.478
ECFO 3	25 0	1	7	5.14	1.576	-1.083	0.464
EFTO1	25 0	1	7	5.29	1.501	-1.061	0.852
EFTO2	25 0	1	7	5.34	1.555	-1.149	0.761
EFTO3	25 0	1	7	5.36	1.494	-1.297	1.483
EFTO4	25 0	1	7	5.34	1.448	-1.009	0.56
EFTO5	25 0	1	7	5.17	1.523	-0.967	0.437
EFTO6	25 0	1	7	5.25	1.503	-0.837	0.172
FXLO 1	25 0	1	7	5.29	1.353	-1.221	1.383
FXLO 2	25 0	1	7	5.09	1.509	-1.084	0.776
FXLO 3	25 0	1	7	5.33	1.367	-1.314	1.609
FXLO 4	25 0	1	7	5.51	1.324	-1.099	1.008

4.4 Measurement Model Assessment

The quality of the measurement models used in this research was evaluated using the criteria established by Hair et al. (2019). The indicators' loadings were calculated, and they were all determined to be more than 0.50. This is encouraging since it indicates the construct is strong enough to account for more than half the variation in the indicator, which means the constructs are valid. Each factor loading with a score lower than 0.500 was eliminated as stated in table 4.3.

4.4.1 Reliability

There are two basic ways for assessing construct reliability. Cronbach's alpha (CA) and composite reliability (CR) are two extensively used statistical indices for determining a measuring instrument's internal consistency. The process of assessing the reliability of

indicator constructs in CA involves analysing their correlations. The assessment of CR, on the other hand, focuses on accurately predicting the latent variable of one set of items using another set of items. A widely accepted criterion for evaluating the consistency of a construct is to verify if it attains a CR or CA score of 0.70 or greater. Table 4.3 displays the CR values for e-design, e-sourcing, e-negotiation, e-evaluation, corruption, organizational control, process efficiency and process flexibility. The CR values computed for these variables were 0.906, 0.924, 0.951, 0.840, 0.901, 0.804, 0.886, 0.947 and 0.939 respectively and the corresponding CA values are 0.903, 0.920, 0.950, 0.831, 0.898, 0.803, 0.871, 0.941 and 0.923 respectively. The data suggests that the model possesses unidimensionality, which means that it measures a single construct, and consistently produces the same results when replicated.

4.4.2 Validity

The extent to which a particular test aligns with other tests that measure the same or similar constructs demonstrates convergent validity. Convergent validity indicators can be established through theoretical as well as empirical sources. Using various evaluations that concentrate on the same constructs can serve as a technique to evaluate the precision of diverse measurement methods for assessing a particular attribute. The concept of convergence is observed in an association that exhibits a moderate level of strength and is characterised by a level of interconnectivity that is neither too strong nor too weak. Assessing convergent validity usually requires the use of two measures, namely average variance extracted (AVE) and factor loading (FL). Researchers commonly recommend applying factor loadings that are greater than 0.5. Researchers generally consider a validity measure to be satisfactory if the AVE value is 0.5 or higher. Based on the results presented in Table 4.3, all factor loadings exceeded the minimum threshold of 0.5, and the average AVE for each construct was greater than 0.5. These findings indicate the models' validity.

Table 4.3 Reliability and Validity

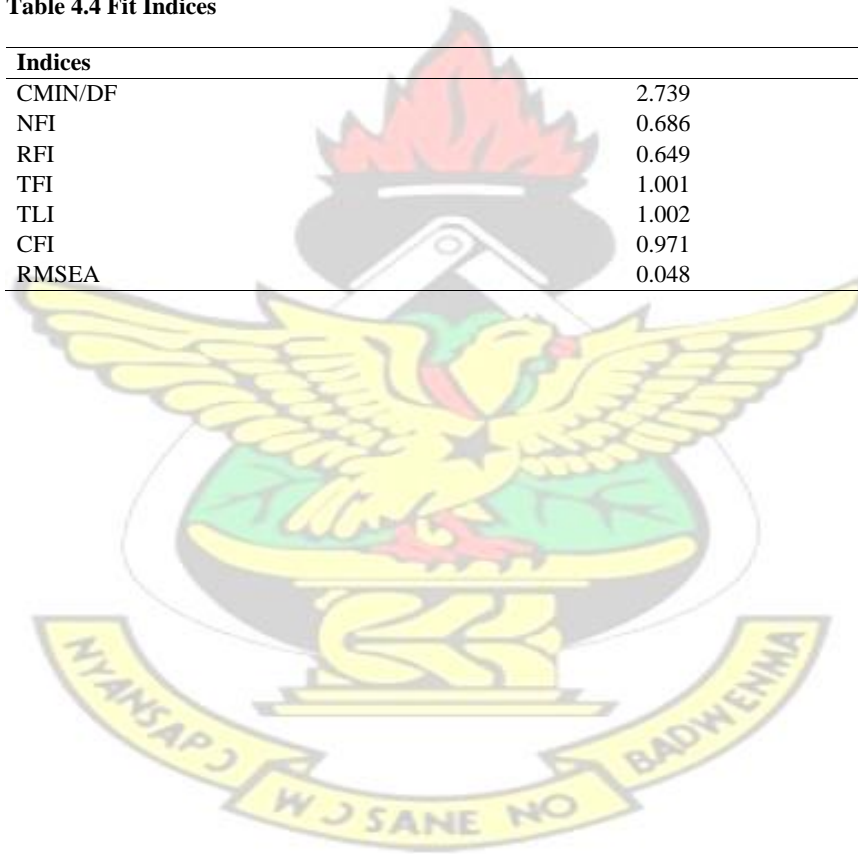
Constructs	Items	Loadings	CA	CR	AVE
E-design	EDS4	0.838	0.903	0.906	0.708
	EDS3	0.800			
	EDS2	0.866			
	EDS1	0.859			
E-sourcing	ESN4	0.868	0.920	0.924	0.752
	ESN3	0.908			
	ESN2	0.861			
	ESN1	0.829			
E-negotiation	ENG3	0.952	0.950	0.951	0.867
	ENG2	0.923			
	ENG1	0.918			
E-evaluation	EVN3	0.909	0.831	0.840	0.724
	EVN2	0.789			
Corruption	COR4	0.736	0.898	0.901	0.697
	COR3	0.874			
	COR2	0.882			
	COR1	0.839			
Organizational Control	OC4	0.770	0.803	0.804	0.510
	OC3	0.652			
	OC2	0.807			
	OC1	0.610			
Process Efficiency	ECFO3	0.830	0.871	0.886	0.722
	ECFO2	0.885			
	ECFO1	0.833			
Process Effectiveness	EFTO6	0.885	0.941	0.947	0.749
	EFTO5	0.865			
	EFTO4	0.825			
	EFTO3	0.837			
	EFTO2	0.914			
	EFTO1	0.862			
Process Flexibility	FXLO4	0.900	0.923	0.939	0.757
	FXLO3	0.925			
	FXLO2	0.874			
	FXLO1	0.772			
	EVN1	0.871			

4.5 Fit Indices

Table 4.4 displays the results of the model fit test conducted to ensure that the structural model aligns well with the dataset. The indices used and their outcomes are as follows: $CMIN/DF = 2.739$; $NFI = 0.686$; $RFI = 0.649$; $TFI = 1.001$, $TLI = 1.002$, $CFI = 0.971$ and $RMSEA = 0.048$. This result satisfies the requirement for a satisfactory goodness-of-fit, as proposed by Hooper et al. (2009) and mentioned by Shodeinde et al. (2023).

Table 4.4 Fit Indices

Indices	
CMIN/DF	2.739
NFI	0.686
RFI	0.649
TFI	1.001
TLI	1.002
CFI	0.971
RMSEA	0.048



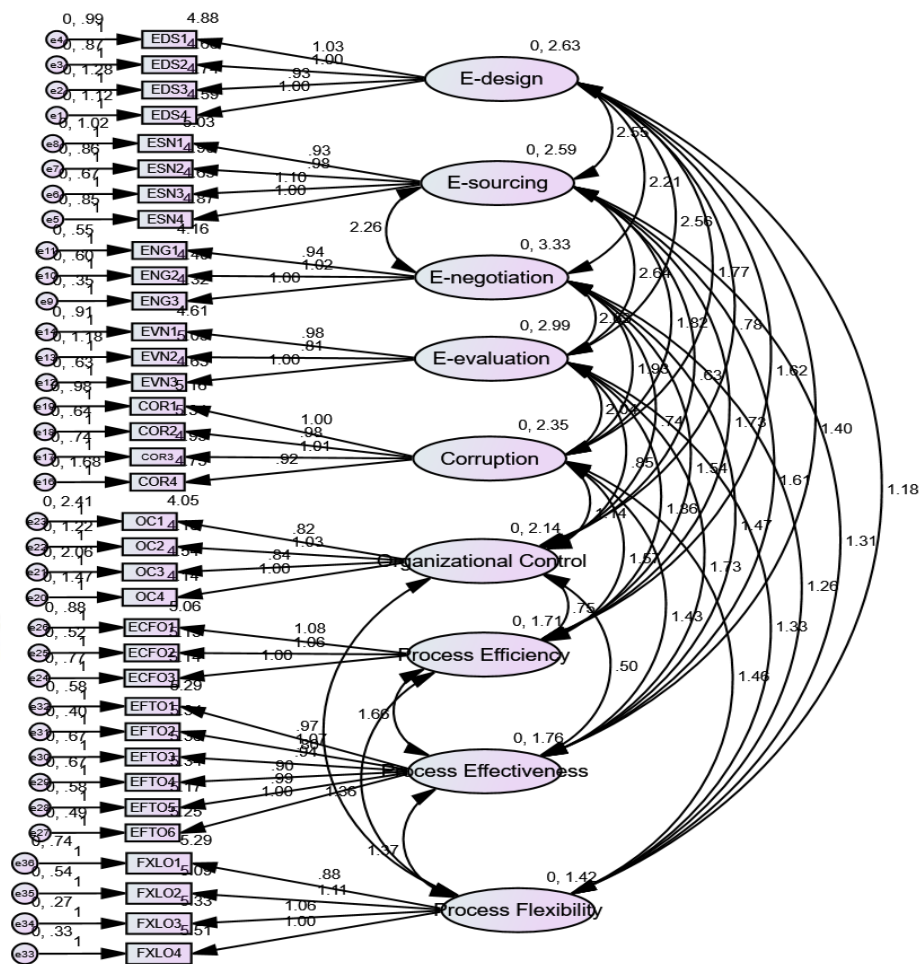


Figure 4.1: Measurement Model Assessment

4.6 Correlation Analysis

The potential correlations between the independent and dependent variables were investigated using the Pearson correlation, as shown in Table 4.5. It displays the strength of the relationship as well as whether its nature is negative or good. From the table, e-procurement is positively and moderately correlated with business process outcome and ethical behaviour ($r=.634$, $P<.01$; $r=.741$, $P<.01$). Business process outcome is moderately

correlated ethical behaviour ($r=0.560$, $P<.01$). The results show that the variables are significant correlated at 1%.

Table 4.5 Correlation Statistics

Variables	1	2	3
EProcurement	1		
Business Process Outcome	.634**	1	
Ethical Behaviour	.741**	.609**	1

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

4.7 Multicollinearity

As a result, multicollinearity may be avoided by checking for evidence of it among the explanatory factors. The multicollinearity among the explanatory factors was further investigated using the variance inflation factor (VIF) test. The variance inflation factor quantifies the extent to which multicollinearity artificially inflates the variance of the calculated coefficient. Test-based VIF values for the variables are shown in Table 4.6. Any multicollinearity test result above 5.00 is considered to be very significant (Kutner, Nachsheim, and Neter, 2004). Test results are shown in Table 4.6. Table 4.6 demonstrates that both the mean and all of the VIF's explanatory factors fall below the critical value (5). What this means is that multicollinearity between the variables is at a minimum. The findings of the multicollinearity test verify the correlation matrix results shown before in Table 4.6. For this reason, a multiple linear regression model allows for the simultaneous inclusion of all explanatory variables.

Table 4.6 Variance inflation factor

	VIF	1/VIF
Business Process Outcome	2.078	.481
E-procurement	2.078	.481
Mean VIF	2.078	.

4.7 Regression Analysis

4.7.1 Model Summary

As can be seen in the table 4.7, the model produce R^2 value of 44.5% for ethical procurement and 74.4% for business process outcome, indicating that variations in ethical behaviour and business process outcome can be explained by e-procurement. This implies that the unaccounted factors in the study could explain the remaining 55.5% and 25.6% of the variation in ethical behaviour and business process outcome respectively. Also, the F-test value is 97.188 for ethical behaviour and 301.012 for business process outcome. The statistical significance of this values has been established at the 0.000 level, since the $\text{prob}>F$ is significant at 5%. A statistically significant relationship exists between the variables, and the model provides a good fit for the data.

Table 4.7 Model Summary

Endogenous Constructs	Ethical Behaviour	Business Process Outcome
R-squared	0.445	0.744
F-test	97.188	301.012
Prob > F	0.000	0.000

4.7.2 Regression Coefficient

4.7.2.1 E-Procurement and Ethical Behaviour and Business Process Outcome

The study examines the influence of e-procurement on ethical behaviour. The findings show that e-procurement have positive and statistically significant influence on ethical behaviour ($\beta=.336$; $p\text{-value}<.01$). The findings support the study's hypothesis. The result showed a positive significant association between e-procurement and ethical behaviour. This implies that e-procurement improves ethical behaviour.

The study also evaluates the effect how e-procurement affect business process outcome. As shown in the table 4.6 business process outcome is positively and significantly influenced by e-procurement ($\beta=0.336$; $p\text{-value}<0.01$). The findings support the hypothesis stated in the study, this suggests that a unit increase in e-procurement will lead to 0.336-unit increase in business process outcome.

4.7.2.2 Business Process Outcome and Ethical Behaviour

The study also analyses how business process outcome affected ethical procurement. ethical procurement was shown to increase as a consequence of business process outcome, with the increase being statistically significant ($\beta=0.195$; $p\text{-value}<0.01$). The findings support the hypothesis outline in the study. This implies that all other things been equal, business process outcome accounts for a significant variation in ethical behaviour. This suggests that a unit increase in business process outcome may contribute to 0.195 increase in ethical behaviour.

4.7.2.3 The Mediating role of Business Process Outcome

The study also investigated how e-procurement can indirectly influence ethical behaviour through the mediating role of business process outcome. The findings indicated that the indirect role of e-procurement on ethical behaviour through the mediating role of business process outcome is positive and statistically significant. This means that business process outcome partially contributes to enhancing the link between e-procurement and ethical behaviour. The findings imply that business process outcome will account for increase in how e-procurement affects ethical behaviour.

Table 4.8 Hypotheses for Direct and Indirect Relationship

Hypotheses	Beta	STDEV	T statistics	P values	Decision
Business Process Outcome -> Ethical Behaviour	0.336	0.075	5.115	0.000	Supported
E-Procurement -> Business Process Outcome	0.606	0.032	23.469	0.000	Supported
E-Procurement -> Ethical Behaviour	0.321	0.074	4.792	0.000	Supported
E-Procurement -> Ethical Behaviour	0.195	0.056	3.032	0.000	Supported

4.8 Discussion of Results

The study is aimed at providing a comprehensive understanding of the mediating role played by business process outcomes in the e-procurement and ethical behaviours model with empirical evidence from public institutions. Therefore, the discussion of the results is presented according to the research objectives and the theoretical model.

4.8.1 E-Procurement and Ethical Behaviour and Business Process Outcome

First the study examined the influence of e-procurement on ethical behaviour. The findings showed that e-procurement have positive and statistically significant influence on ethical behaviour. The findings support the study's hypothesis. The findings of the study indicated a positive significant relationship between e-procurement and ethical behaviour. This means that e-procurement improves ethical behaviour.

The findings suggest that, the implementation and usage of electronic procurement systems is connected with a clearly increased tendency for individuals or organisations to participate in ethical and morally upright procurement practises. In practise, this means that when organisations use e-procurement platforms, they are more likely to adhere to ethical criteria in their procurement operations, such as openness, fairness, and accountability. This connection between e-procurement and ethical behaviour highlights the potential for technology-driven solutions to improve ethical practises, minimise corruption, and promote integrity in procurement processes, benefitting both the organisation and society as a whole. The results are consistent with a growing body of

studies highlighting the transformational influence of technology adoption on ethical procurement practises. In the context of public sector procurement Kumar and Ganguly (2021) discovered that e-procurement platforms considerably increased transparency by centralising procurement data and making it available to stakeholders, lowering the chance of fraudulent actions. Similarly, Singh and Chan (2022) discovered that e-procurement simplifies procurement workflows, enforces standardised procedures, and automates approval processes, all of which help to ensure compliance with ethical and legal norms. This is consistent with the findings of Patrucco (2017), who analysed the Italian public healthcare system and found that adoption of e-procurement led to higher transparency and adherence to ethical procurement practises. Furthermore, Parenti et al. (2022) emphasised the significance of e-procurement in increasing accountability and traceability, stating that digital record-keeping and audit trails serve as a disincentive to unethical behaviour. Their results are consistent with those of Singh and Chan (2022), who said that organisations engaging in e-procurement often prioritise staff training on ethical procurement practises, emphasising the relevance of ethical behaviour in procurement operations. These results support the claim that e-procurement technologies act as catalysts for ethical behaviour by encouraging openness, accountability, fairness, and compliance, hence adding to the overall integrity of procurement processes across several industries.

4.8.2 Business Process Outcome and Ethical Behaviour

Secondly, the study also analyses how business process outcome affected ethical procurement. ethical procurement was shown to increase as a consequence of business process outcome, with the increase being statistically significant. The findings support the hypothesis outline in the study. This implies that all other things been equal, business process outcome accounts for a significant variation in ethical behaviour. This suggests

that a unit increase in business process outcome may contribute to increase in ethical behaviour.

The findings imply that when business operations function smoothly, effectively, and successfully, employees are more likely to participate in ethical practises such as openness, honesty, and adherence to ethical norms. The positive effect of effective business processes on ethical behaviour emphasises the belief that organisational success and ethical behaviour are inextricably linked, with better results encouraging a culture of integrity and ethical decision-making. The results support with the findings of Martin et al. (2022), who found that organisational performance and effectiveness are positively connected with ethical behaviour, as personnel in high-performing organisations are more dedicated to ethical ideals. This is consistent with the results Sharma et al. (2019), who found that organisations with strong performance management systems that encourage accountability and efficiency are more likely to engage in ethical behaviour. Furthermore, Nguyen et al. (2022) discovered a substantial relationship between process-oriented organisational cultures and ethical behaviour, with successful procedures increasing workers' feeling of responsibility and ethical commitment. The idea that positive business process outcomes encourage ethical behaviour is also supported by research by Shindika and Cheteni (2023), who discovered that organisations with streamlined processes and a focus on efficiency foster ethical climates in which employees are more likely to report unethical behaviour.

4.8.3 Mediating role of Business Process Outcome

The objective of the study also set to establish the mediating effect of business process outcomes in the e-procurement and ethical behaviour model. The findings indicated that the indirect role of e-procurement on ethical behaviour through the mediating role of business process outcome is positive and statistically significant. This means that business

process outcome partially contributes to enhancing the link between e-procurement and ethical behaviour. The findings imply that business process outcome will account for increase in how e-procurement affects ethical behaviour.

The findings suggested that, when organisations use e-procurement systems that result in positive business process outcomes such as efficiency, transparency, and accountability, these enhanced processes act as a mediating mechanism that improves ethical behaviour among workers and stakeholders. In essence, e-procurement has a positive effect on how organisations perform their business operations, which develops an ethical culture. Prior research has looked at comparable mediating processes and offered insights into the complex dynamics at play. In the context of e-commerce, Nyarko, et al. (2022) discovered that the adoption of e-commerce platforms positively improved business process outcomes such as efficiency and transparency, which in turn encouraged ethical behaviour among online vendors. This is consistent with the results of Ahmed (2021), who showed how e-procurement platforms improve process efficiency, simplify processes, and increase transparency, resulting in enhanced organisational performance and ethical behaviour. Furthermore, Sharma et al. (2019) found that ethical behaviour is often connected to the efficacy of internal control systems and procedures inside organisations. Employees are better prepared to adhere to ethical norms when e-procurement technologies lead to more efficient and responsible corporate procedures, as they see a congruence between ethical behaviour and simplified processes (Brown & Trevio, 2020). Furthermore, Chaurasia et al. (2020) found that ethical behaviour is closely related to the clarity and transparency of organisational processes, with streamlined processes facilitating employees' understanding of ethical guidelines and their implementation.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study is concluded in this chapter by succinctly summarising the data, comes to firm conclusions, and makes intelligent recommendations in light of those results. It covers the limitations and significance of the research in great detail. The study's subsection gives more information on the specific goals that were established as a result of its results. The chapter's recommendations section offers crucial advice based on the study's primary conclusions. Future research directions are discussed in the section that follows.

5.2 Summary of Findings

The study is aimed at providing a comprehensive understanding of the mediating role played by business process outcomes in the e-procurement and ethical behaviours model with empirical evidence from public institutions. The important conclusions are highlighted by combining the aforementioned study with the existing corpus of literature. The reported results are deemed appropriate in light of the study's goals.

5.2.1 E-Procurement and Ethical Behaviour and Business Process Outcome

First the study examined the influence of e-procurement on ethical behaviour. The findings showed that e-procurement have positive and statistically significant influence on ethical behaviour. The findings support the study's hypothesis. The result showed a positive significant association between e-procurement and ethical behaviour. This implies that e-procurement improves ethical behaviour. The findings suggest that, the implementation and usage of electronic procurement systems is connected with a clearly increased tendency for individuals or organisations to participate in ethical and morally upright procurement practises. In practise, this means that when organisations use e-procurement platforms, they are more likely to adhere to ethical criteria in their procurement operations,

such as openness, fairness, and accountability. This connection between e-procurement and ethical behaviour highlights the potential for technology-driven solutions to improve ethical practises, minimise corruption, and promote integrity in procurement processes, benefitting both the organisation and society as a whole.

5.2.2 Business Process Outcome and Ethical Behaviour

Secondly, the study also analyses how business process outcome affected ethical procurement. ethical procurement was shown to increase as a consequence of business process outcome, with the increase being statistically significant. The findings support the hypothesis outline in the study. This implies that all other things been equal, business process outcome accounts for a significant variation in ethical behaviour. This suggests that a unit increase in business process outcome may contribute to increase in ethical behaviour. The findings imply that when business operations function smoothly, effectively, and successfully, employees are more likely to participate in ethical practises such as openness, honesty, and adherence to ethical norms. The positive effect of effective business processes on ethical behaviour emphasises the belief that organisational success and ethical behaviour are inextricably linked, with better results encouraging a culture of integrity and ethical decision-making.

5.2.3 Mediating role of Business Process Outcome

The objective of the study also set to establish the mediating effect of business process outcomes in the e-procurement and ethical behaviour model. The findings indicated that the indirect role of e-procurement on ethical behaviour through the mediating role of business process outcome is positive and statistically significant. This means that business process outcome partially contributes to enhancing the link between e-procurement and ethical behaviour. The findings imply that business process outcome will account for increase in how e-procurement affects ethical behaviour. The findings suggested that,

when organisations use e-procurement systems that result in positive business process outcomes such as efficiency, transparency, and accountability, these enhanced processes act as a mediating mechanism that improves ethical behaviour among workers and stakeholders. In essence, e-procurement has a positive effect on how organisations perform their business operations, which develops an ethical culture.

5.3 Conclusion

The study is aimed at providing a comprehensive understanding of the mediating role played by business process outcomes in the e-procurement and ethical behaviours model with empirical evidence from public institutions. The study employed a cross-sectional explanatory research design with quantitative methods. The study population comprised of top and medium level managers in logistics, supply chain, and operations at Ghanaian public institutions. The study employed both random and purposive sampling techniques to collect data from a sample of 250. The study utilised inferential analysis aimed at achieving the study objectives with SPSS v26, Amos and Hayes Process Macro which were employed to evaluate the hypotheses of the study. The findings showed that e-procurement has positive and significant effect on ethical behaviour among the public institutions. The study also found that business process outcome significantly drives ethical behavior and also mediates the relationship between e-procurement and ethical behaviour. Based on the findings it is recommended that public organizations engage in thorough training programmes that teach personnel about ethical concepts, norms, and the value of ethical behaviour in procurement procedures.

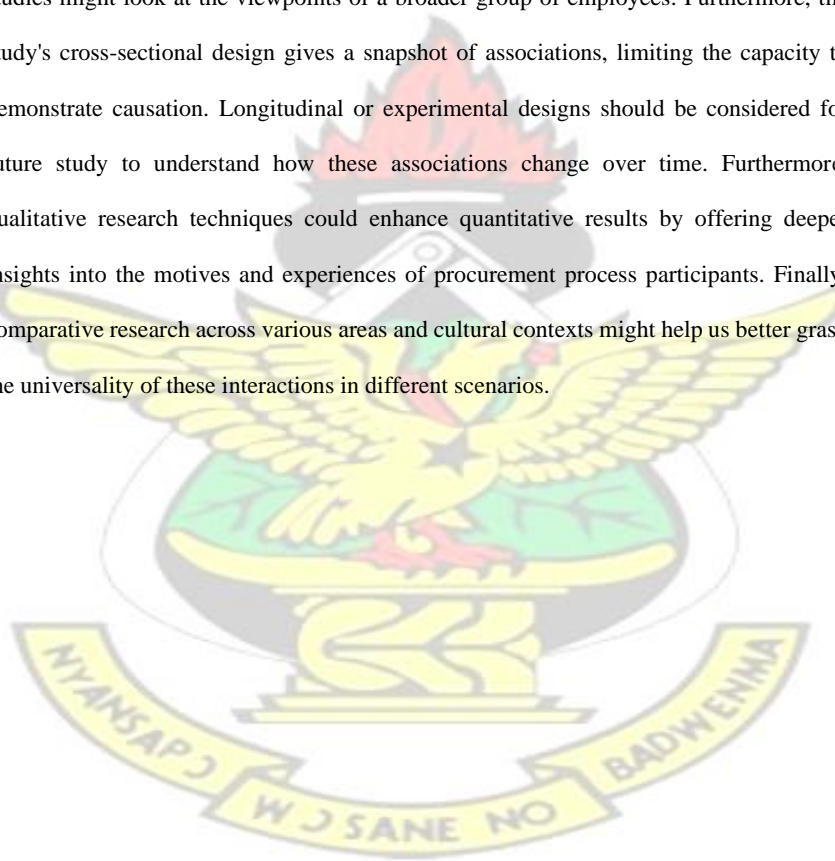
5.4 Recommendation

Based on the findings, the following recommendations are suggested.

- Public organisations should engage in thorough training programmes that teach personnel about ethical concepts, norms, and the value of ethical behaviour in procurement procedures. These programmes should be developed to raise ethical knowledge and consciousness among all procurement stakeholders. Furthermore, training should be a continuous process to ensure that personnel are up to current on changing ethical standards and practises.
- Public institutions should continue to invest in and develop their e-procurement systems, concentrating on features that promote procurement transparency, efficiency, and accountability. This includes features like audit trails, real-time reporting, and automated approval procedures. The objective is to guarantee that e-procurement solutions not only enable business process results, but also adhere to ethical values and comply with regulatory requirements.
- Public organisations should create and convey clear and comprehensive procurement-specific ethical norms. These rules should define anticipated ethical behaviour, the repercussions of unethical behaviour, and the reporting procedures in place. Developing a public and widely available code of ethics develops an accountability and ethical behaviour culture.
- A mechanism for continuous monitoring and assessment of business process results should be established by public institutions. This involves evaluating the efficiency, openness, and accountability of procurement procedures aided by e-procurement platforms on a regular basis. When inconsistencies or errors are discovered, remedial steps should be performed as soon as possible to ensure that favourable business process results continue to support ethical behaviour.

5.5 Limitations and Future Research Directions

The results provide important insights into the link between e-procurement, business process outcomes, and ethical behaviour in Ghanaian public organisations. However, various limitations and future research directions should be addressed. To begin, the study's concentration on top and mid-level managers in logistics, supply chain, and operations may restrict the results' applicability to other organisational levels. Future studies might look at the viewpoints of a broader group of employees. Furthermore, the study's cross-sectional design gives a snapshot of associations, limiting the capacity to demonstrate causation. Longitudinal or experimental designs should be considered for future study to understand how these associations change over time. Furthermore, qualitative research techniques could enhance quantitative results by offering deeper insights into the motives and experiences of procurement process participants. Finally, comparative research across various areas and cultural contexts might help us better grasp the universality of these interactions in different scenarios.



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APPENDIX I:

Survey Questionnaire

My name is ..., a postgraduate student at the Kwame Nkrumah University of Science and Technology, Kumasi, Department of Supply Chain and Information Systems. This survey instrument has been designed to enable me carry out research on the topic: **“IMPACT OF E-PROCUREMENT ON ETHICAL BEHAVIOUR IN THE PUBLIC SECTOR: MEDIATING ROLE OF BUSINESS PROCESS OUTCOMES”**. Any information provided will be used for academic purposes ONLY. There are no risks associated with your participation, and your responses will remain confidential and anonymous.

SECTION A: RESPONDENT'S BIOGRAPHY AND COMPANY PROFILE

When completing this questionnaire, please tick [☐] in the applicable box or provide an answer as applicable.

1. Gender: [☐] Male [☐] Female
2. Age: [☐] 23 years and below [☐] 24–29 years [☐] 30–35 years
 [☐] 36–40 years [☐] 41 years and above
3. Educational Background:
 [☐] No formal education [☐] Basic/Primary [☐] Secondary
 [☐] Bachelor's Degree [☐] Master's Degree [☐] Ph.D./Doctorate
4. Please, indicate the department you belong (e.g., Procurement, Marketing, HRM, Management, etc.) _____
5. Please, indicate your area of expertise (e.g., logistics and supply chain management, procurement management, operations management, etc.) _____
6. Please indicate your position in the firm (e.g. Supply Chain Manager, Operations Manager, etc.). _____
7. Number of years the firm has been in operation:
 [☐] Less than 1 year [☐] 1-5 years [☐] 6-10 years
 [☐] 11-15 years [☐] 16-20 years [☐] 21 years & above
8. Number of employees in the firm:
 [☐] Less than 6 employees [☐] 6-9 employees [☐] 10-29 employees
 [☐] 30-50 employees [☐] More than 50 employees
9. Type of ownership:
 [☐] Fully locally owned [☐] Fully foreign owned [☐] Jointly Ghanaian & foreign owned
10. Please, indicate the industry your firm belongs (e.g., food processing industry, agro-processing, etc.) _____

11. Firm's annual revenue (in Ghana Cedis)?
☐ Less than 500,000 ☐ 500,000 – 1,000,000 ☐ Above 1,000,000

SECTION B: E-PROCUREMENT ADOPTION (Source: Chang et al., 2013)

Indicate the extent to which you agree or disagree with each statement by checking the appropriate number from 1 to 7, using the following scale:

1 = Strongly Disagree 2 = Disagree 3 = Somewhat Disagree 4 = Indifferent/Not Sure 5 = Somewhat Agree 6 = Agree 7 = Strongly Agree								
Item	Statement	1	2	3	4	5	6	7
E-design (EDS)								
EDS1	Our company uses an electronic system to gather information at the procurement request stage.							
EDS2	Each department within the organization shares the same network platform for purchasing requests.							
EDS3	Each department within the organization requests purchases from the Procurement Unit by the use of technology.							
EDS4	The design of the purchases requirement or the standardized purchasing norm between the organization and their supplier will be communicated via the internet.							
E-sourcing (ESN)								
ESN1	Our organisation selects the most appropriate supplier through the information system.							
ESN2	Our organisation gathers the demand proposals about procurement information or related information through the information system.							
ESN3	Our organisation releases requirements or specifications via the information system.							
ESN4	Our organisation notifies the supplier on the arrival of tender documents and pro-forma invoices via the information system.							
E-negotiation (ENG)								
ENG1	Our company negotiates with the supplier through the internet.							
ENG2	Our company confirms the procedures concerning daily purchases with the supplier through the internet.							
ENG3	Our company negotiates the general procedures of purchasing with the supplier through the internet.							
E-evaluation (EVN)								
EVN1	Our company documents past purchasing information in an electronic form.							
EVN2	Our company sets up a database about procurement and utilizes it in the purchasing process							

EVN3	Our company evaluates the performance of suppliers from past purchasing information in the information system.								
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SECTION C: ETHICAL BEHAVIOUR (Source: Asamoah and Andoh-Baidoo, 2018)

Indicate the extent to which you agree or disagree with each statement by checking the appropriate number from 1 to 7 using the following scale:

<i>1 = Strongly Disagree</i>		<i>2 = Disagree</i>		<i>3 = Somewhat Disagree</i>		<i>4 = Indifferent/Not Sure</i>		<i>5 = Somewhat Agree</i>		<i>6 = Agree</i>		<i>7 = Strongly Agree</i>	
Item	Statement	1	2	3	4	5	6	7					
Corruption (COR)													
COR1	There are clear systems in place to prevent management from abusing their position for personal interests.												
COR2	There are clear systems in place to check employees who go against organizational and professional ethics.												
COR3	Our organization has implemented effective anti-corruption.												
COR4	Our organization is free from excessive bureaucratic regulations and controls.												
COR5	Information that can expose our organization to scrutiny by government institutions is not recorded.												
Organizational Control (OC)													
OC1	Our firm does not allow government institutions to have access to operational data.												
OC2	External stakeholders' activities that may improve organizational control interfere with the firm's operations.												
OC3	Important operational information is often withheld by top managers and owners.												
OC4	External stakeholders influence control of our organization.												

SECTION D: BUSINESS PROCESS OUTCOMES (Source: Asamoah and Andoh-Baidoo, 2018)

Indicate the extent to which you agree or disagree with each statement by checking the appropriate number from 1 to 7 using the following scale:

		1 = Strongly Disagree 2 = Disagree 3 = Somewhat Disagree 4 = Indifferent/Not Sure 5 = Somewhat Agree 6 = Agree 7 = Strongly Agree						
Item	Statement	1	2	3	4	5	6	7
Process Efficiency (ECFO)								
ECFO1	E-procurement implementation has improved the efficiency of our operations.							
ECFO2	E-procurement implementation has lowered our cost of operations.							
ECFO3	E-procurement implementation has reduced the amount of rework needed for data entry errors.							
Process Effectiveness (EFTO)								
EFTO1	Data provided by E-procurement add value to our operations.							
EFTO2	E-procurement implementation has improved timely access to corporate data.							
EFTO3	The e-procurement system provides a high level of enterprise wide data integration.							
EFTO4	E-procurement implementation helps us make better revenue forecasts than before.							
EFTO5	The functionalities of e-procurement adequately meet the requirements of our jobs.							
EFTO6	E-procurement implementation has improved our quality of operation.							
Process Flexibility (FLXO)								
FXLO1	E-procurement implementation has given us more ways to customize our processes.							
FXLO2	ERP implementation has made our company more agile.							
FXLO3	E-procurement implementation has made us more adaptive to changing business environment.							
FXLO4	E-procurement implementation has improved the flexibility of our operations.							

Thank you for participating in the survey.