UNIVERSITY OF EDUCATION, WINNEBA

ANALYSING THE EFFECTS OF E-PROCUREMENT ADOPTION ON SUPPLY CHAIN PERFORMANCE IN GHANA: THE ROLE OF ORGANIZATIONAL CULTURE

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DECLARATION

Student's Declaration

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

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Supervisors Certification

I hereby certify that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of dissertation as laid down by the University of Education, Winneba.

Supervisor's Name	Signature	Date
Dr. Evans Kyeremeh	……..	……..

DEDICATION

I would like to dedicate this work to my lovely Parents Nana Damptey Akom (deceased) and Regina Owusu Achiaa and to my entire family.

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LIST OF ABBREVIATIONS

EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
GHANEPS	Ghana Electronic Procurement System
ICT	Information Communication, Technology
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
RBV	Resource-Based View
SMEs.	Small and Medium-Scale Enterprises
TAM	Technology Acceptance Model
UEW	University of Education, Winneba

ABSTRACT

The purpose of study is to examine the effects of e-procurement adoption on supply chain performance; exploring the role of organizational culture. The study was done in the theoretical framework of Technology Acceptance Model (TAM) and Resource-Based View (RBV) theory. The study adopted quantitative research approach and positivism as a research philosophy. A cross-sectional design, descriptive and inferential research designs were adopted. Data was collected from 200 workers in the University of Education, Winneba, using self-administered questionnaires. Descriptive statistics such as mean and standard deviations and relative importance index were used to analyze the data collected. Also, inferential statistics such as regression analysis and correlational analysis were additionally used to analyse the data collected. The study found that the adoption of e-procurement at the University of Education, Winneba, is moderate. The results indicate a positive and statistically significant relationship between e-procurement adoption and supply chain performance. Again, the regression analysis demonstrates that organizational culture significantly moderates the relationship between e-procurement adoption and supply chain performance. The analysis further highlights several key challenges hindering the full adoption and effectiveness of e-procurement. These challenges include inadequate training programmes, security risks, insufficient technical expertise, employee resistance, outdated technological infrastructure, and difficulties in system integration. It is recommended that the University invests in comprehensive training programmes for its procurement staff. Additionally, the University should undertake a detailed assessment to identify areas that require improvement and develop a strategic plan to achieve full integration and utilization of e-procurement across all departments.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The procurement process is a critical component of supply chain management, encompassing the acquisition of goods and services necessary for organizational operations. Traditionally, procurement was conducted manually, involving paper-based systems that were often cumbersome, time-consuming, and prone to errors (Yu & Shen, 2013). The manual procurement system posed several challenges, such as lengthy procurement cycles, high transaction costs, lack of transparency, and difficulties in tracking and managing procurement activities (Siddiqui et al., 2022).

These challenges highlights the need for a more efficient and transparent procurement system, leading to the advent of Information and Communication Technologies (ICTs) in procurement processes. The introduction of Electronic Procurement (e-procurement) systems marked a significant shift from manual to digital processes, offering numerous benefits (Chan & Owusu, 2022). E-procurement systems streamline procurement activities by automating processes, reducing paperwork, and enhancing communication between buyers and suppliers (Boateng, 2021). Studies have shown that e-procurement adoption leads to improved procurement cycle times, increased order processing accuracy, and better supplier relationship management (Azanlerigu & Akay, 2015).

Globally, the adoption of e-procurement has revolutionized supply chain management, resulting in enhanced efficiency, transparency, and cost-effectiveness. Research in Kenya by Owuor and Ouma (2019) demonstrated significant improvements in supply chain partner performance and reduced procurement costs due to e-procurement adoption. Similarly, Iqbal et al. (2023) found that e-procurement significantly improves the supply chain performance of SMEs in Pakistan.

In developing countries like Ghana, the potential of e-procurement to drive efficiency and transparency in procurement processes has been increasingly recognized. The Ghanaian government has actively embraced e-procurement, exemplified by initiatives such as the Ghana Electronic Procurement System (GHANEPS), which aims to modernize public procurement processes (Addo, 2019; Fosso Wamba & Akter, 2019). Despite these advancements, empirical evidence on the impact of e-procurement on supply chain performance in Ghana remains limited.

The University of Education, Winneba, a prominent public institution in Ghana, stands at the forefront of academic excellence and institutional innovation. Recognizing the imperative of modernizing its procurement practices, the University has embarked on the adoption of e-procurement systems to align with evolving technological trends and global best practices. This institution serves as an ideal case study to investigate the dynamics of e-procurement adoption and its implications for supply chain performance.

Organizational culture plays a critical role in the successful implementation of e-procurement systems. It encompasses the shared values, beliefs, norms, and behaviors within an organization, shaping the way employees interact with new technologies. Supportive organizational culture, characterized by leadership that champions innovation, open communication, and employee engagement, can significantly enhance the impact of e-procurement on supply chain performance (Gyamfi, Adamu & Billa, 2021).

In the context of Ghana, both public and private sectors have shown a growing interest in e-procurement adoption to enhance transparency, accountability, and efficiency (Salifu et al., 2023; Addy et al., 2024). However, studies examining the role of organizational culture in shaping the relationship between e-procurement adoption and

supply chain performance are scarce. This study aims to fill this gap by exploring how e-procurement adoption influences supply chain performance at the University of Education, Winneba, with a specific focus on the moderating role of organizational culture. By understanding these dynamics, the study seeks to provide valuable insights for optimizing supply chain performance through strategic e-procurement initiatives and supportive organizational culture.

1.2 Statement of the Problem

The advent of information technology has ushered in significant transformations across various business activities, with electronic procurement (e-procurement) systems emerging as a key innovation (Gyamfi, Amadu, and Billa, 2021; Asare & Prempeh, 2017; Dwomoh, Affum & Addae, 2023). Traditional procurement processes, characterized by manual and paper-based methods, have often led to inefficiencies, lack of cost transparency, and limited insights into purchasing activities (Owuor & Ouma, 2019; Iqbal et al., 2023). The transition to e-procurement is driven by the need to overcome these challenges and enhance procurement efficiency, data quality, and stakeholder relationships World Bank (2022). However, despite the recognized benefits of e-procurement adoption, various barriers hinder its implementation, including inadequate technological infrastructure, high software costs, weak business procedures, and limited implementation capacity (Salifu, et al., 2023; Addy et al., 2024).

Studies (Ochieng'Oyugi & Kamaara, 2023; Lee et al., 2024; Kumar, Aziz & Khan, 2023; Al Naim, & Bhatti, 2022; Iqbal et al., 2023; Kiusya, 2018) have shown that the utilization of e-procurement systems brings significant improvements in supply chain partner performance, leading to reduced procurement costs, increased efficiency, and other benefits. However, the extent of these improvements and their impact on supply chain performance may vary depending on organizational culture. Organizational

culture, encompassing shared values, norms, and beliefs, plays a crucial role in shaping the acceptance and utilization of e-procurement within an organizational context. Yet, there is a dearth of research exploring the interplay between organizational culture, e-procurement adoption, and supply chain performance, particularly in the Ghanaian context. Therefore, this research seeks to address this study gap by investigating the how organizational culture influences the nexus between e-procurement and supply chain performance.

This study aims to investigate the relationship between e-procurement adoption and supply chain performance in Ghana, specifically exploring the moderating role of organizational culture. Organizational culture, comprising shared values, norms, and practices within an organization, significantly influences decision-making, communication, and collaboration. While existing literature ((Gyamfi, Adamu, & Billa, 2021; Addo, 2019; Fosso Wamba & Akter, 2019; Owuor & Ouma, 2019; Iqbal et al., 2023; Thomya & Saenchaiyathon, 2015; Gyamfi et al., 2021; Mingaleva et al., 2022) suggests a positive correlation between e-procurement adoption and supply chain performance, the impact may vary based on organizational culture. Studies indicate that organizations with transparent cultures are better positioned to adopt e-procurement systems effectively ((Nani & Ali, 2020; Larbi, 2023; Ochieng'Oyugi & Kamaara, 2023).

While existing studies have examined the benefits and challenges of e-procurement adoption in various sectors globally, research focusing on the public sector, particularly within educational settings remains limited. University of Education, Winneba presents a unique organizational culture and regulatory environment, necessitating an in-depth investigation into the effects of e-procurement adoption on supply chain performance. Understanding how organizational culture influences the relationship between e-

procurement adoption and supply chain performance within the public sector is crucial for informing policy formulation, managerial practices, and strategic initiatives aimed at enhancing procurement efficiency and supply chain performance in public institutions.

1.3 Purpose of the Study

The purpose of this research is to investigate how e-procurement adoption, supply chain performance, and organizational culture are interconnected in Ghana. That is the purpose of study is to examine the effect of e-procurement adoption on supply chain performance in public institutions in Effutu Municipality, exploring the role of organizational culture.

1.4 Research Objectives

Specifically, the study seeks to:

1. assess the level of e-procurement adoption at University of Education, Winneba
2. To investigate the relationship between E-procurement adoption and supply chain performance at University of Education, Winneba
3. To explore the moderating role of organizational culture in the relationship between E-procurement adoption and supply chain performance.
4. To identify the challenges of E-procurement adoption at University of Education, Winneba

1.5 Research Questions

1. What is the level of adoption of E-procurement adoption at University of Education, Winneba?

2. What is the relationship between E-procurement adoption and supply chain performance at University of Education, Winneba?
3. What is the moderating role of organizational culture in the relationship between E-procurement adoption and supply chain performance?
4. What are the challenges of E-procurement adoption at University of Education, Winneba?

1.6 Significance of the Study

This study contributes significantly to the theoretical understanding of e-procurement adoption, supply chain performance, and organizational culture within the context of public institutions, particularly in Effutu Municipality, Ghana. By empirically investigating the relationship between e-procurement adoption and supply chain performance, the study adds to the existing body of knowledge in procurement and supply chain management literature. The findings of this research would enrich theoretical models and conceptual frameworks, fostering deeper understandings into the mechanisms driving e-procurement success in public sector organizations.

From a practical standpoint, this study holds significant implications for public sector practitioners, procurement professionals, and organizational leaders involved in procurement and supply chain management. Understanding the relationship between e-procurement adoption and supply chain performance enables practitioners to leverage digital technologies effectively to enhance efficiency, transparency, and cost-effectiveness in procurement processes.

At the policy level, this study provides valuable evidence to inform the formulation and implementation of policies and regulations governing e-procurement adoption and supply chain management in Ghana's public sector. By identifying barriers to successful

e-procurement adoption and highlighting the importance of organizational culture, policymakers would design interventions and incentives to facilitate the uptake of e-procurement technologies. Ultimately, evidence-based policy recommendations derived from this research would contribute to the advancement of public procurement reforms, promoting transparency, accountability, and good governance practices within Effutu Municipality and across Ghana's public institutions.

1.7 Delimitation of the Study

The delimitation of a study sets the boundaries within which the research will take place. In the case of examining the impact of e-procurement adoption and supply chain performance in Ghana, with a particular emphasis on the role of organizational culture, it is imperative to establish precise parameters. This will guarantee that the research remains relevant, focused, and manageable within the set limits.

The study focuses specifically on public institutions within Effutu Municipality, Ghana. Effutu Municipality serves as the primary research setting due to its relevance to the researcher's context and accessibility for data collection. The study is limited to the public sector, particularly public institutions involved in procurement activities within Effutu Municipality. Private sector organizations and other sectors are beyond the scope of this research. The primary variables of interest include e-procurement adoption, supply chain performance, and organizational culture. The study investigates the relationships between these variables, with a specific focus on how organizational culture moderates the relationship between e-procurement adoption and supply chain performance. The study employs a quantitative research approach.

1.8 Definition of Key Terms

E-Procurement: E-procurement refers to the use of electronic means, such as internet-based platforms, electronic data interchange (EDI), or enterprise resource planning (ERP) systems, for the procurement of goods and services within an organization.

Supply Chain Performance: Supply chain performance measures and evaluates the effectiveness and efficiency of various activities within a supply chain network. **Organizational Culture**: Organizational culture represents the shared values, beliefs, norms, attitudes, and behaviours that define the collective identity of an organization.

1.9 Brief Methodology

This study adopts a quantitative approach, utilizing a questionnaire as the primary instrument for data collection. Guided by a positivist research philosophy, the research design employed is cross-sectional, allowing for data collection at a single point in time to provide a snapshot of the research variables' relationships. Data collection entails the development of a structured questionnaire designed to capture relevant variables related to e-procurement adoption, organizational culture, and supply chain performance at the University of Education, Winneba. Stratified random sampling is utilized to ensure representation across various departments and levels of procurement involvement within the university. A sample of staff members involved in procurement activities is selected to participate in the study. Quantitative data collected from the questionnaire responses are analyzed using descriptive statistics such as mean, standard deviation, and frequency distribution. These statistical measures provide insights into the central tendency, variability, and distribution of the research variables. Additionally, inferential statistics techniques, including regression analysis and correlation analysis, are employed to examine the relationships between variables and test the research hypotheses.

Ethical considerations are paramount throughout the research process. Ethical principles, including informed consent, confidentiality, and voluntary participation, are upheld. Participants are provided with clear information about the study objectives and their rights, and their anonymity and confidentiality are ensured.

1.10 Organization of the study

The study has been organized under five chapters. Chapter one delt with the introduction to the study. These included background of the study, research problem, purpose of the study, objectives of the study, research questions, research hypothesis, significance of the study, delimitations of the study, definition of key terms, and organization of the study. Chapter two covers the review of relevant literature for the study. This section provides a critical review of the existing literature on the study topic. Chapter two also explores theoretical frameworks and models underpinning the study. Existing literature was reviewed and key findings and research gaps in the literature has also been considered in this chapter. Chapter three highlights the research methodology adopted for the study. This includes the research design, research approach, target population, sample size, sampling technique, data collection methods and instruments, method of data analysis and ethical considerations. Chapter Four will also cover the data analysis and presentation of results. This section presents the findings of the study. This section also interprets and discusses the findings of the study in light of the existing literature, theoretical frameworks, and research objectives. Chapter five which is the final chapter also deals with the summary of findings, conclusion, and recommendations from the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This literature review focus on the impact of e-procurement adoption on supply chain performance in Ghana. Specifically, it will examine the role of organizational culture. The literature review is a crucial component of this research as it systematically explores the current knowledge, theories, and empirical data relevant to the study's objectives and research questions.

2.2 Conceptual Review

2.2.1 E-Procurement Adoption

This concept involves the integration of electronic technology into procurement processes, including purchasing goods and services, sourcing suppliers, and managing contracts, among others. The adoption of e-procurement systems has been studied extensively in recent years, with scholars examining its impact on organizational performance, particularly within the context of supply chain management. Understanding the factors influencing the adoption of e-procurement in Ghana, such as technological infrastructure, organizational readiness, and government policies, is crucial.

Numerous studies have been conducted to investigate the adoption of e-procurement and how it affects procurement practices and organizational performance. Alban (2012) and Owuor & Ouma (2019) examined the adoption of e-procurement in the public procurement sector in Tanzania and the Homa Bay County Government, respectively. Alban's research emphasized the progress made in e-procurement implementation while also highlighting the challenges impeding its full-scale adoption. Similarly, Owuor and Ouma (2019) provided insights into the adoption dynamics within the Homa

Bay County Government and the significance of e-procurement in enhancing the efficiency and effectiveness of the supply chain.

Suleiman (2013) studied e-procurement adoption in Tanzanian public institutions and its impact on value addition. The research underscored the role of e-procurement in improving procurement practices and promoting organizational development. Gholampur (2018) investigated the effects of e-procurement adoption on organizational performance and maturity. The study emphasized the need for organizations to align their e-procurement initiatives with strategic goals to maximize benefits and achieve sustainable growth.

In the same vein, Osir (2016) examined the role of e-procurement adoption in enhancing procurement performance in state corporations in Kenya. The findings highlighted the importance of technological integration and organizational change management. The study showed the potential of e-procurement to streamline procurement processes and improve overall performance outcomes. Moreover, Muhia and Afande (2015) investigated the adoption of e-procurement strategy and its impact on procurement performance in state corporations in Kenya, using the Kenya Revenue Authority as a case study. The study emphasized the importance of strategic planning and stakeholder engagement in successful e-procurement implementation.

Conversely, Ujakpa et al. (2016) have highlighted the difficulties faced by multinational companies operating in Ghana's oil and gas industry when it comes to adopting and integrating e-procurement into their business processes. These challenges primarily include resistance to change, inadequate technological infrastructure, and a lack of awareness regarding the benefits of e-procurement. Similarly, Oppong (2020) has discussed the challenges faced by commercial state corporations in implementing

electronic procurement systems, with a particular focus on issues such as high implementation costs and concerns around data security.

2.3 Organizational Culture

Organizational culture plays a significant role in determining the success of e-procurement systems on supply chain performance. In order for e-procurement initiatives to be effectively implemented and their potential benefits realized, it is essential to understand and manage organizational culture, particularly in the context of supply chain management in Ghana. Organizational culture acts as a lens through which e-procurement adoption and its impact on supply chain performance are interpreted and experienced within the organization (Ronald & Omwenga, 2015).

A positive organizational culture that values collaboration, innovation, and continuous improvement can promote a conducive climate for successful e-procurement adoption and enhanced supply chain performance (Gupta & Narain, 2012). On the other hand, a weak or dysfunctional culture may hinder adoption efforts and limit the potential benefits of e-procurement on supply chain performance.

There is no consensus among researchers on the definition of organizational culture, resulting in varied scholarly definitions. According to Tichy (1983), organizational culture is the "normative glue" that holds an organization together. It is the driving force that recognizes the efforts and contributions of its members and provides a comprehensive understanding of what needs to be achieved and how. Similarly, Narayana (2017) defines organizational culture as how employees carry out their tasks and communicate with each other within a given organization. This cultural pattern encompasses a variety of beliefs, values, rituals, and symbols that direct the operational approach of individuals within a company.

Moreover, according to Cameron & Sine (1999), organizational culture can be defined as the shared values, underlying assumptions, expectations, collective memories, and definitions that exist within an organization. It represents the dominant ideology that employees hold in their minds. It provides a sense of identity and unspoken guidelines for how to interact with others, thus ensuring the stability of the social system to which they belong. Nevertheless, Schein (1990) offers a widely used definition of organizational culture as a pattern of basic assumptions that are invented, discovered, or developed by a group as it learns to cope with external adaptation and internal integration. These assumptions have worked well enough to be considered valid and are taught to new members as the correct way to perceive, think, and feel in relation to those problems.

Mingaleva et al. (2022) emphasize the importance of managing organizational culture as a strategic element for fostering innovation and sustainable development within enterprises.

Numerous studies have explored the relationship between organizational culture and organizational performance across different industries and contexts. Ahmed and Shafiq (2014) conducted a case study in the telecom sector, demonstrating the significant impact of organizational culture on organizational performance outcomes. They found that a culture characterized by innovation, customer focus, and employee empowerment positively influenced organizational performance metrics such as profitability, productivity, and customer satisfaction.

Similarly, Awadh and Saad (2013) and Nazir and Zamir (2015) investigated the influence of organizational culture on employee performance, highlighting the importance of a supportive and empowering culture in enhancing employee motivation,

engagement, and productivity. Moreover, Osei et al. (2023) examined the role of organizational culture in improving sustainable supply chain performance, emphasizing the need for alignment between cultural values and sustainable supply chain practices.

In the context of e-procurement adoption and supply chain performance in Ghana, understanding the role of organizational culture is crucial for achieving successful implementation and desired performance outcomes. Gyamfi, Adamu, and Billa (2021) explored the impact of organizational culture on public procurement act compliance, underscoring the significance of a compliance-oriented culture in ensuring adherence to regulatory frameworks and improving procurement performance.

Moreover, Thomya and Saenchaiyathon (2015) proposed a conceptual framework highlighting the effects of organizational culture and enterprise risk management on organizational performance. They argue that a culture of transparency, accountability, and risk awareness is essential for mitigating risks associated with e-procurement adoption and enhancing supply chain performance.

2.4 Supply Chain Performance

Supply chain performance refers to the efficiency, effectiveness, and overall success of the supply chain in achieving its objectives (Hausman, 2004). Key performance indicators (KPIs) may include cost reduction, cycle time, inventory turnover, on-time delivery, and customer satisfaction (Estampe et al., 2013). Analysing how e-procurement adoption influences these performance metrics within the context of Ghana's supply chain is important. In the context of this study, supply chain performance refers to how well the use of e-procurement practices affects the efficiency and effectiveness of supply chain operations within organizations in Ghana. This

includes cost reduction, process efficiency, transparency, supplier relationships, and overall competitiveness in the marketplace.

Several studies provide insights into the relationship between e-procurement adoption and supply chain performance. For example, Owuor and Ouma (2019) conducted a case study on the adoption of e-procurement in Homa Bay County Government, highlighting its impact on supply chain performance. Similarly, Ujakpa et al. (2016) examined challenges in the adoption of e-procurement in multinational companies in the oil and gas industry, shedding light on its effects on supply chain management practices.

Overall, the concept of supply chain performance within the context of e-procurement adoption involves assessing how the integration of electronic procurement processes affects the efficiency, effectiveness, and competitiveness of supply chain operations within organizations. It considers factors such as cost reduction, process efficiency, transparency, supplier relationships, and overall competitiveness in the marketplace.

2.5 Empirical Review

Several studies shed light on the challenges and drivers influencing the adoption of e-procurement in Ghana. For instance, in 2019, Addo conducted research to survey the state of e-procurement in the public sector, with the aim of investigating the challenges of adopting e-procurement. The study revealed that a significant obstacle to the adoption of e-procurement in the public sector is the lack of employee competency. Despite efforts to develop skills and provide training, the implementation is still not fully effective. The employees' skills, competencies, and training play a crucial role in the adoption and implementation of e-procurement. Furthermore, inadequate legal frameworks, technological infrastructure, and security concerns regarding procurement

transaction data are also major challenges hindering the adoption of e-procurement in Kenya's public sector.

Mchopa (2020) conducted a study to assess the implementation of e-procurement in the public procurement system in Tanzania. The study aimed to identify the challenges, the progress made so far, and the way forward. According to Mchopa, e-procurement has been widely adopted in many countries due to its ability to reduce transaction costs and manage inventory effectively. However, in Tanzania, e-procurement has not been fully adopted due to several reasons, such as a lack of commitment from the government and management, insufficient capital investment, a lack of policy and legal framework support, inadequate manpower, insufficient capability development, and a lack of technological integration between key players. Proper integration of these drivers is necessary to realize the benefits of e-procurement, such as cost reduction, harmonization of procurement proceedings, and minimization of lead times.

Opoku-Fofie, Asare-Bediako, and Asamoah (2022) studied the barriers and drivers of electronic procurement adoption within Universal Banks in Ghana. The study found several factors that motivate the adoption of e-procurement, such as improving data quality, having reliable information, building good relationships with buyers and suppliers, cutting administrative costs, and increasing supplier and public confidence. However, barriers to adoption were also identified, such as poor internet infrastructure, expensive IT infrastructure software, weak business procedures, and a lack of implementation capacity. The study found a positive correlation between e-procurement adoption and firm performance, and e-procurement adoption was found to moderate the relationship between the drivers and firm performance. The study recommends that firms focus on training their procurement staff to improve their

procurement skills, with a specific focus on e-procurement and reducing resistance to change.

Similarly, A study conducted by Asare and Prempeh in 2017 aimed to assess the factors that affect the implementation of e-procurement in technical universities in Ghana. The study discovered that the ICT infrastructure in these universities was insufficient, which hindered the benefits of e-procurement. The study suggests that these universities invest in improving their ICT infrastructure to maximize the advantages of e-procurement.

Mahdillou and Akbary (2014) conducted a systematic literature review to synthesize and examine the key challenges impeding public e-procurement implementation. This study examined the challenges of implementing public e-procurement through a systematic literature review. The study identified three main categories of challenges: technological, organizational, and environmental. Technological challenges include acceptance and usage, e-procurement as a disruptive innovation, and technical issues. Organizational challenges include stakeholders' issues, leadership, inadequate training, skilled personnel, resistance to change, and value-driven outcomes. Environmental challenges include procurement regulatory framework, country context, and problems faced by SMEs. The study aims to provide practitioners and policy implementers with information on possible hindrances to successful e-procurement implementation and suggests future studies should focus on explaining the causal mechanism of these challenges and how to address them in a context-specific manner.

Azanlerigu and Akay (2015) conducted a study to investigate the prospects and challenges of e-procurement in public institutions in Ghana. The study identified several challenges to e-procurement adoption in organizations, including employee competency, an inadequate legal framework, inadequate technological infrastructure,

and the security of procurement transaction data. The paper recommends continuous training for incoming staff, formal recognition of electronic procurement transactions backed by legislation, integration of systems between institutions and suppliers, demonstration of the positive impact of the system, and installation of linkages between all government agencies.

In 2023, Salifu et al. conducted a study to assess the challenges faced in adopting e-procurement in the public sector of Ghana. The study found that factors related to information and communication technology (ICT) contribute more to the implementation challenges of e-procurement than factors related to institutions, employees, and suppliers. The study recommends regular training or seminars for employees to gain knowledge about e-procurement processes and procedures and prioritizing ICT infrastructure needs in public institutions to ensure the smooth adoption of electronic procurement.

Ujakpa et al. (2016) investigated the challenges of e-procurement adoption in multinational companies in the oil and gas industry in Ghana, particularly focusing on Eni oil exploration company. Their study highlighted significant hurdles in the adoption and acceptance of e-procurement practices, indicating potential impacts on supply chain management. These findings suggest that the successful integration of e-procurement systems is crucial for enhancing supply chain performance in such industries. In the context of Kenya, Osir (2016) investigated the role of e-procurement adoption on procurement performance in state corporations, focusing on Kenya Utalii College. The study emphasized the significance of e-procurement in improving procurement practices within public institutions, thus contributing to overall supply chain performance enhancement.

In 2021, Ganesh conducted a study to investigate the factors that influence the adoption of electronic procurement software and its effects on the performance of supply chains after implementing this software. The study also aimed to understand the challenges that companies face regarding the adoption of e-procurement software solutions. The research discovered that e-procurement adoption has a positive impact on supply chain performance. It results in increased operational efficiency, improved process control and compliance, enhanced productivity, reduced costs, and profit maximization. However, the study also identified several challenges in e-procurement adoption, including the cost of the software, difficulties in change management, and integration with current software. The study found that complex user interfaces and onboarding external stakeholders were minor challenges.

Jayawardhena and Jayaratne (2019) researched in Sri Lanka to measure the impact of using e-procurement on the performance of the apparel supply chain. They also tried to identify the barriers and benefits of using e-procurement. The study found that using e-procurement has a positive impact on the performance of apparel organizations. The study identified three main categories of barriers to e-procurement adoption: organizational, HR-related, and external. On the other hand, the most significant benefits of implementing e-procurement in an apparel organization are the elimination of paperwork and improved transaction transparency. Siddiqui et al. (2022) conducted a study to assess the effect of e-procurement on supply chain management in the modern era. The study found that four electronic variables of e-procurement are crucial in reducing uncertainty in supply chain functions, increasing supply chain activities and practices, speeding up processes, and improving supply chain performance. This is significant because supply chains involve connecting activities from raw material acquisition to delivering finished goods to end customers.

Al-Rawashdeh, Jawabreh, and Ali (2023) conducted a study to investigate the impact of various factors in supply chain management on organizational performance. The study found that sharing postponement, sharing quality information, and strategic supplier partnerships have a positive impact on organizational performance. The study shows that the level of information sharing has a statistically significant relationship with organizational performance. However, the relationship between customer relationship and organizational performance is not statistically significant. The study also found that supply chain complexity, as a moderator, helps increase organizational performance by interacting with certain factors. However, the results are inconsistent with previous studies, and the relationship between these factors and organizational performance still needs further investigation.

In 2022, Banye conducted a study in Ghana to evaluate the impact of e-procurement practices on the performance of the supply chain. The study concluded that e-procurement practices and supplier integration have a positive impact on an organization's supply chain performance. The study recommends further research on the effects of e-procurement on Ghana Health Service supply chain performance to address implementation challenges. Additionally, the study suggests improving efficiency and reducing bureaucracy by automating procurement processes such as requisition, tendering, contract awarding, and payment to ensure supplier integration.

Several studies have explored the link between organizational culture and organizational performance. For instance, Osei et al. (2023) conducted a study on how organizational culture (OC) affects the performance of sustainable supply chains. The study revealed that specific components of organizational culture, such as developmental, hierarchical, and group culture, are associated with better sustainable supply chain performance in global supply chains. It was also found that external

integration plays a role in mediating the relationship between organizational culture and sustainable supply chain performance and that all dimensions of organizational culture have a positive relationship with external integration. The research suggests that supply chain managers should adopt integrated competing values to intensify external integration and improve sustainable supply chain performance.

A recent study conducted in 2023 by Rosmawati and Rasyid, examined the impact of work environment and organizational culture on employee job effectiveness in the Mamuju District Regional Library and Archives Office. The study found that the work environment and organizational culture have a significant and positive impact on employee work effectiveness. Improving the workplace environment, such as lighting, cleanliness, air quality, and safety, can enhance employee performance and productivity. A positive organizational culture, characterized by attributes like self-awareness, aggressiveness, teamwork, and performance orientation, also contributes to higher levels of employee effectiveness. The study also showed that both factors have a significant simultaneous influence on employee work effectiveness, highlighting the importance of addressing both factors concurrently to achieve optimal work effectiveness among employees.

Paschal and Nizam (2016) conducted research to measure and identify how organizational culture affects the performance of its employees. The study revealed that organizational culture, specifically rituals, values, and heroes, significantly and positively impacts employee performance. In contrast, symbols have little to no effect on employee performance. This research clarifies the importance of frequent ritual activities in organizations and highlights the potential for future studies to explore the impact of different organizational cultural systems on employee performance. Arunchand and Ramanathan (2013) conducted a study to assess the relationship

between organizational culture and employee morale in the public sector. The study found that public sector undertakings have a bureaucratic culture, but surprisingly, it has no impact on employee morale. However, the study did reveal that employee morale varies between male and female employees, with male employees having higher morale than their female counterparts.

Parveen et al. (2023) conducted a thorough investigation to explore the connection between organizational culture and open innovation systems. They used a mixed-methods approach, combining survey data from 300 employees from various organizations with qualitative insights gathered through interviews with innovation managers. Their findings showed that specific dimensions of organizational culture have a significant correlation with the effectiveness of open innovation practices. The study identified a positive association between a culture of collaboration and the adoption of open innovation. Organizations that promote and reward collaboration tend to be more receptive to external ideas and partnerships, which facilitates the integration of open innovation into their processes. The study also highlighted the importance of leadership support in driving open innovation initiatives. Leadership that encourages experimentation, risk-taking, and idea exploration creates a conducive atmosphere for open innovation to thrive. Conversely, a lack of support or skepticism hinders the adoption and implementation of open innovation practices. Lastly, the study underscored the role of organizational flexibility in accommodating diverse perspectives and approaches inherent in open innovation. Organizations with adaptable structures and processes are better equipped to embrace external inputs and adapt them to their innovation strategies.

Gyamfi, Adamu, and Billa (2021) investigated the relationship between organizational culture and compliance with the Public Procurement Act in the context of the Obuasi

municipality. They delved into a critical area of governance and management to understand how the prevailing organizational culture influences adherence to regulatory frameworks governing procurement processes. The study employed both quantitative and qualitative methods to conduct it. The study made use of 150 participants using a convenient sampling procedure. The study reveals a significant correlation between organizational culture and compliance with the Public Procurement Act. Specifically, the findings suggest that organizational cultures characterized by transparency, accountability, and ethical conduct tend to exhibit higher levels of compliance with procurement regulations. This aligns with existing literature emphasizing the role of organizational culture in shaping organizational behaviour and adherence to legal frameworks. However, the study does not delve deeply into the specific dimensions of organizational culture or how they influence compliance behaviours, leaving room for further exploration.

2.6 Theoretical framework

The integration of technology into organizational processes has become increasingly prevalent, particularly in the context of e-procurement adoption and its impact on supply chain performance (Pattanayak & Punyatoya, 2020). As organizations seek to leverage technological advancements, understanding user acceptance of these systems becomes paramount. This theoretical review employs the Technology Acceptance Model (TAM) and Resource-Based View (RBV) as a lens to analyse the effect of e-procurement adoption on supply chain performance in Ghana, with a specific focus on the role of organizational culture.

2.6.1 Technology Acceptance Model (TAM)

Davis (1987) originally proposed the Technology Acceptance Model (TAM) as a theoretical framework to explain and predict user acceptance of information systems.

TAM posits that perceived usefulness (PU) and perceived ease of use (PEOU) are the key determinants of an individual's intention to use and actual usage behaviour of technology. Perceived usefulness refers to the degree to which an individual believes that using a particular technology will enhance their performance and productivity, while perceived ease of use refers to the extent to which an individual perceives the technology as effortless to use. Additionally, Marikyan and Papagiannidis (2023) expound on TAM's applicability across various contexts and underscore its utility in predicting technology acceptance behaviour. Moreover, Qingiong and Liping (2004) conducted a meta-analysis of empirical findings related to TAM, affirming its robustness in explaining technology adoption behaviours.

Organizational culture plays a pivotal role in shaping individuals' perceptions and behaviours within an organization. Alvesson & Sveningsson (2015) defines organizational culture as the shared values, beliefs, and norms that govern members' conduct. The compatibility between e-procurement systems and organizational culture influences employees' perceptions of usefulness and ease of use, thereby impacting adoption. The influence of organizational culture extends beyond individual behaviour to collective performance outcomes, particularly in the context of supply chain management. Osei et al. (2023) emphasize that a culture conducive to innovation, collaboration, and adaptability fosters improved supply chain performance. Mingaleva et al. (2022) further underscore the role of organizational culture management in driving sustainable development through enhanced supply chain efficiencies.

Drawing upon the TAM framework, the adoption of e-procurement systems can be viewed as an organizational innovation. The compatibility between the innovation and organizational culture serves as a critical determinant of its acceptance and subsequent impact on supply chain performance. Awadh and Saad (2013) posit that a strong

organizational culture aligns employees' values and goals with the organization's strategic objectives, thereby facilitating the successful implementation of technological innovations.

Several studies have applied the TAM framework to investigate the adoption and acceptance of e-procurement systems. For instance, Marikyan and Papagiannidis (2023) provided a comprehensive review of the Technology Acceptance Model, highlighting its relevance and applicability across various contexts. Their review emphasizes the importance of perceived usefulness and perceived ease of use in shaping individuals' attitudes and intentions towards adopting technology. These fundamental constructs of TAM provide the groundwork for analysing the acceptance of e-procurement in the Ghanaian context.

Additionally, Odi and Suryani (2020) conducted an acceptance analysis of e-procurement in the East Java Province using the TAM method. Their findings revealed that perceived usefulness and perceived ease of use significantly influence users' acceptance and utilization of e-procurement systems, highlighting the importance of user-centered design and usability considerations in system implementation. Furthermore, Qingiong and Liping (2004) conducted a meta-analysis of empirical findings on the Technology Acceptance Model, consolidating evidence from prior studies to validate the model's robustness and generalizability across diverse organizational settings.

Application of TAM to the Study

According to Marikyan and Papagiannidis (2023), TAM has been widely used in various contexts to predict and explain individuals' acceptance of information technologies. In the context of e-procurement adoption, PU refers to the degree to which

individuals perceive that using e-procurement systems will enhance their job performance and facilitate their procurement tasks. PEOU, on the other hand, reflects the perceived simplicity and ease of use associated with e-procurement systems. According to Qingiong and Liping (2004), studies have consistently found that both PU and PEOU significantly influence users' intentions to adopt e-procurement systems.

Organizational culture plays a significant role in shaping individuals' perceptions and attitudes towards technology adoption. Alvesson & Sveningsson (2015) defines organizational culture as the shared values, beliefs, and norms that guide organizational behaviour. Studies by Awadh and Saad (2013), Mingaleva et al. (2022), and Parveen et al. (2023) have highlighted the impact of organizational culture on employee performance, innovation, and open innovation systems, respectively.

The compatibility between organizational culture and the features of e-procurement systems is critical for successful adoption and integration. Organizations with a culture that values innovation, collaboration, and openness are more likely to embrace e-procurement initiatives (Osei et al., 2023). Conversely, organizations with a culture resistant to change may face challenges in implementing e-procurement systems effectively (Suleiman, 2013).

In conclusion, applying the Technology Acceptance Model (TAM) to analyze the effect of e-procurement adoption and supply chain performance in Ghana underscores the importance of understanding users' perceptions and attitudes towards technology adoption. By considering both perceived usefulness and perceived ease of use, organizations can develop strategies to promote the adoption of e-procurement systems. Moreover, recognizing the influence of organizational culture on technology

acceptance is crucial for ensuring the successful implementation and integration of e-procurement initiatives.

2.6.2 Resource-Based View (RBV) Theory

The resource-based view (RBV) has emerged as a dominant theoretical framework for understanding competitive advantage and organizational performance in recent years (Moh'd Ali Smadi & Ababneh, 2018; Utami & Alamanos, 2023). RBV emphasizes that an organization's internal resources and capabilities are the primary sources of sustainable competitive advantage (Madhani, 2010). In supply chain management, the adoption of e-procurement has been recognized as a critical resource that can enhance operational excellence and supply chain performance (Moh'd Ali Smadi & Ababneh, 2018). However, the effectiveness of e-procurement adoption is contingent upon various factors, including organizational culture (Ewuga et al., 2019). This theoretical review explores the relationship between e-procurement adoption, supply chain performance, and organizational culture in the Ghanaian context.

RBV suggests that firms can achieve sustained competitive advantage by leveraging their unique bundle of resources and capabilities (Madhani, 2010). Resources are defined as tangible and intangible assets that are valuable, rare, difficult to imitate, and non-substitutable (Madhani, 2010). E-procurement systems, such as electronic data interchange (EDI), internet-based procurement platforms, and e-marketplaces, are valuable technological resources that can streamline procurement processes, reduce transaction costs, and enhance supply chain efficiency (Moh'd Ali Smadi & Ababneh, 2018). Additionally, organizational culture, which comprises shared beliefs, values, norms, and practices within an organization, plays a critical role in the utilization and effectiveness of these resources (Awadh & Saad, 2013).

The adoption of e-procurement systems has been associated with various benefits for organizations, including cost savings, process efficiency, enhanced supplier relationships, and improved inventory management (Ewuga et al., 2019). By digitizing procurement processes and facilitating real-time information exchange, e-procurement systems enable organizations to achieve operational excellence and gain a competitive edge in the marketplace (Moh'd Ali Smadi & Ababneh, 2018). Furthermore, the integration of e-procurement with other supply chain activities enhances visibility, coordination, and responsiveness across the supply chain network, leading to improved overall supply chain performance (Ewuga et al., 2019). From an RBV perspective, e-procurement systems are valuable and potentially rare resources that can contribute to competitive advantage. Organizations that leverage e-procurement effectively are better positioned to streamline procurement processes, access global supplier networks, and mitigate supply chain risks.

Organizational culture plays a crucial role in shaping the adoption and utilization of e-procurement systems within an organization (Awadh & Saad, 2013). A culture that values innovation, collaboration, and openness is more conducive to embracing technological innovations such as e-procurement (Parveen et al., 2023). Conversely, organizations with a rigid, hierarchical culture may encounter resistance to change and face challenges in implementing e-procurement initiatives effectively (Parveen et al., 2023). Therefore, understanding and managing organizational culture is essential for maximizing the potential benefits of e-procurement adoption on supply chain performance. Drawing on RBV, organizational culture represents a unique capability that is socially complex and challenging for competitors to replicate. Cultures emphasizing openness, adaptability, and continuous improvement are particularly conducive to e-procurement success.

The relationship between organizational culture, e-procurement adoption, and supply chain performance is multifaceted. Organizational culture influences employees' attitudes towards technological change, collaboration with external partners, and responsiveness to market dynamics (Parveen et al., 2023). In an RBV framework, organizational culture acts as a meta-capability that enhances the value and rarity of e-procurement resources. Cultures emphasizing learning orientation, customer focus, and ethical conduct are associated with superior supply chain performance (Mingaleva et al., 2022). Conversely, cultures characterized by resistance to change, silo mentality, or short-termism may impede the realization of e-procurement benefits.

In conclusion, the resource-based view provides valuable insights into the relationship between e-procurement adoption, supply chain performance, and organizational culture. By leveraging e-procurement as a strategic resource and aligning it with the prevailing organizational culture, firms in Ghana can enhance their competitive advantage and achieve sustainable supply chain performance. However, realizing the full potential of e-procurement adoption requires proactive efforts to cultivate a supportive organizational culture that values innovation, collaboration, and continuous improvement.

Application of Resource-Based View (RBV) to the study

This research looks at the impact of e-procurement adoption and organizational culture on supply chain performance in Ghana, using the resource-based view (RBV) framework. The RBV emphasizes that sustained competitive advantage comes from possessing valuable, rare, inimitable, and non-substitutable resources. By integrating insights from various scholarly articles, we aim to develop a comprehensive understanding of how e-procurement adoption and organizational culture influence supply chain performance in Ghana.

According to Moh'd Ali Smadi and Ababneh (2018), e-procurement adoption enhances operational excellence. In Ghanaian organizations, investing in e-procurement systems provides access to technological infrastructure, procurement expertise, and streamlined processes, which align with the RBV's focus on leveraging valuable and rare resources for competitive advantage.

Furthermore, Awadh and Saad (2013) highlight the significant impact of organizational culture on employee performance. In Ghana, fostering a culture of innovation, adaptability, and collaboration can facilitate e-procurement implementation and effectiveness. Mingaleva et al. (2022) further argue that effective management of organizational culture contributes to sustainable development. Thus, organizations that cultivate cultures supporting e-procurement initiatives align with RBV principles by leveraging internal resources for competitive advantage.

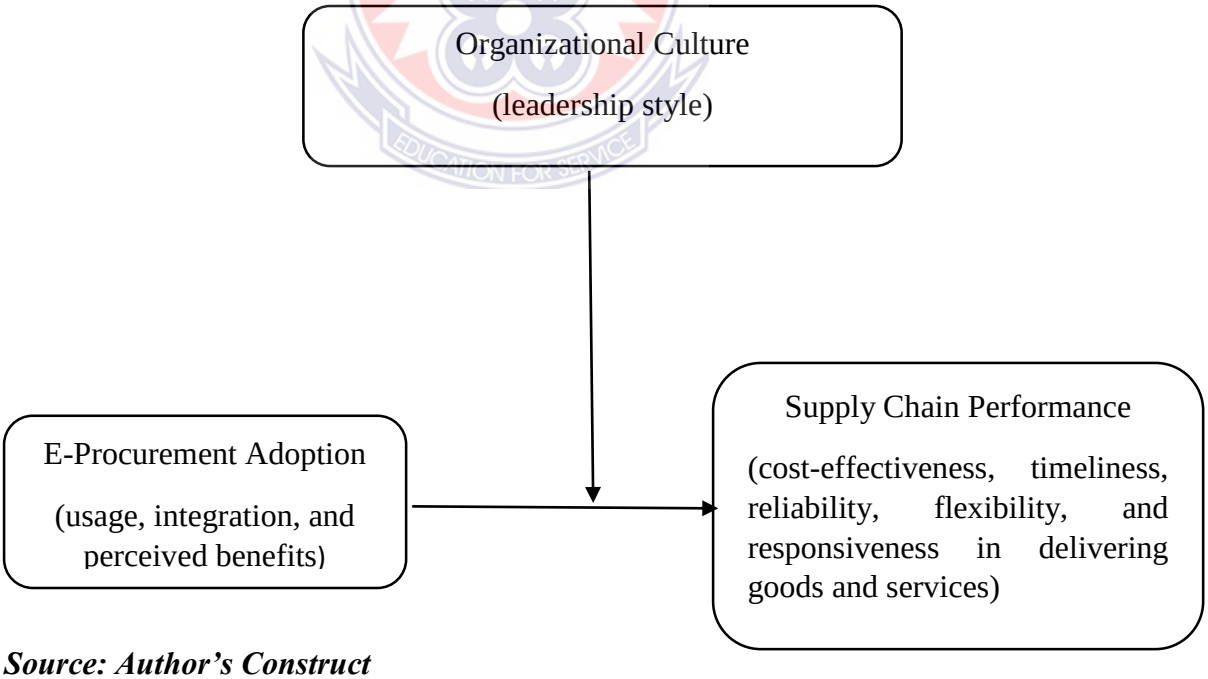
Utami and Alamanos (2023) provide a comprehensive review of resource-based theory, emphasizing the dynamic nature of resources and capabilities. The adoption of e-procurement systems interacts with organizational culture to influence supply chain performance. For instance, Ewuga, Hore, & Mulville (2019) demonstrate how the RBV can be applied to sustainable procurement practices, suggesting that a culture of sustainability enhances the effectiveness of e-procurement in driving supply chain performance. In addition, Osei et al. (2023) propose a competing value framework approach to improve sustainable supply chain performance through organizational culture. In Ghana, aligning organizational culture with the values of efficiency, adaptability, and sustainability can enhance the effectiveness of e-procurement initiatives. This alignment enables organizations to capitalize on their internal resources to achieve superior supply chain performance, in line with RBV principles.

In summary, applying the RBV to this research involves recognizing e-procurement adoption and organizational culture as critical resources that interact to influence supply chain performance in Ghanaian organizations. By leveraging valuable, rare, and inimitable resources such as technological infrastructure and a supportive organizational culture, firms can gain a sustainable competitive advantage in the dynamic business environment.

2.7 Conceptual Framework

The conceptual framework serves as a theoretical scaffold that elucidates the relationships between key variables in the research study. In the context of this study, the conceptual framework provides a structured model for understanding how these variables interact and influence each other.

Figure 2.1: Conceptual Framework



Source: Author's Construct

Supply chain performance, encompassing dimensions such as cost-effectiveness, timeliness, reliability, flexibility, and responsiveness, reflects the overall effectiveness of the supply chain in achieving organizational objectives and satisfying customer

needs. E-procurement adoption, which includes usage, integration, and perceived benefits of electronic procurement technologies, plays a crucial role in enhancing supply chain performance. By streamlining procurement processes, reducing transaction costs, and optimizing resource allocation, e-procurement improves cost-effectiveness. It also facilitates faster processing of procurement requests, reducing lead times and enhancing timeliness, while improving transparency and communication enhances reliability by minimizing errors and disruptions.

Organizational culture, characterized by shared values, beliefs, norms, and behaviours, serves as a moderating variable influencing the relationship between e-procurement adoption and supply chain performance. Elements such as leadership style, communication patterns, reward systems, and employee engagement initiatives shape this culture. Supportive leadership that champions innovation and change fosters an environment conducive to e-procurement adoption, thereby enhancing its impact on supply chain performance. Open and transparent communication encourages employee buy-in and engagement with e-procurement systems, leading to significant improvements in supply chain performance. Rewarding employees for adopting e-procurement practices incentivizes their participation and commitment, amplifying the positive effects of e-procurement adoption.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methodology employed to conduct the study has been covered in this chapter. Sub-topics including research methodology, research philosophy, research approach, design, population, sample, sampling technique, data collection tool, source of data, data gathering procedure, method of data analysis, and ethical considerations.

3.2 Research Philosophy

This current study adopts the positivist research philosophy. Positivism is a research philosophy that emphasizes the objective, empirical, and scientific approach to studying phenomena (Ryan, 2006). Positivism, as a research philosophy, offers a structured framework for investigating phenomena through empirical observation and measurement. It operates on the premise that knowledge can be gained through systematic observation, measurement, and analysis, with an emphasis on quantifiable data and the search for universal laws (Aliyu, Bello, Kasim, & Martin, 2014). In the context of analysing the effect of e-procurement adoption and supply chain performance in Ghana, positivism provides a systematic approach to understanding the relationship between these variables while considering the influence of organizational culture.

One prominent figure in the discussion of positivism is Auguste Comte. Comte argued that the only authentic knowledge is scientific, derived from the positive affirmation of theories through strict empirical testing (Comte, 1830). This notion aligns with analyzing the effect of e-procurement adoption and supply chain performance in Ghana, as it emphasizes the use of empirical evidence to validate hypotheses and theories.

Positivism, rooted in the principles of empiricism and scientific inquiry, emphasizes the importance of objective, observable facts and verifiable evidence (Bryman, 2016). Furthermore, within the realm of positivist research, the use of quantitative methods is prevalent. Positivists advocate for the use of statistical analysis to identify patterns, correlations, and causal relationships between variables. In the context of e-procurement adoption and supply chain performance in Ghana, quantitative methods such as surveys, regression analysis, and data mining techniques can be employed to quantify the impact of e-procurement adoption on supply chain performance metrics such as cost reduction, efficiency improvements, and inventory management.

Moreover, positivism encourages researchers to maintain objectivity and neutrality in their investigations. Researchers strive to minimize bias and subjective interpretations, focusing instead on empirical observations and verifiable facts. This approach is essential when analysing the role of organizational culture in the context of e-procurement adoption and supply chain performance in Ghana, as it allows for an objective assessment of how cultural factors influence decision-making processes, communication channels, and overall organizational effectiveness. Adopting a positivist approach allows the study to gather empirical data on the extent of e-procurement adoption across various public institutions in the Effutu Municipality.

3.3 Research Design

Bryman (2016) states that a research design serves as a blueprint for collecting and analysing data, and that the choice of design reflects the relative importance of different aspects of the research process. Powoh (2016) underscores the importance of selecting an appropriate research design that aligns with the research questions and objectives. In the context of examining the effect of e-procurement adoption on supply chain performance in Ghana while considering organizational culture, a cross-sectional

design offers a pragmatic approach to gather relevant data efficiently. However, researchers must carefully consider potential limitations, such as the inability to establish causality or capture temporal changes over time.

Creswell (2009) emphasizes the flexibility of the cross-sectional design, which can accommodate both quantitative and qualitative data collection methods. Quantitative data, such as survey responses or financial metrics related to supply chain performance, can provide numerical insights into the extent of e-procurement adoption and its impact. Qualitative data, on the other hand, such as interviews or observations, can offer deeper insights into the organizational culture and the contextual factors influencing e-procurement adoption and supply chain performance.

According to Bryman (2016), the cross-sectional design involves collecting data from a diverse range of sources simultaneously. This method allows for the assessment of relationships between variables without the need for longitudinal data collection. In the study of e-procurement adoption and supply chain performance in Ghana, a cross-sectional design enables researchers to gather data on the adoption rates of e-procurement systems, various indicators of supply chain performance, and the prevailing organizational culture within different companies operating in Ghana.

3.4 Research Approach

In relation to the study objectives, this present study employs quantitative approach. The rationale underlying the choosing of quantitative approach over the other two approaches is mainly due to the numerical data requirement to investigate the phenomenon as well as how it addresses the research hypothesis. According to Dudwick, Kuehnast, Jones and Woolcock, (2006) quantitative approach becomes suitable when a study seeks to establish relationships between study variables.

Quantitative estimation allows others to validate original findings by independently replicating the analysis. In addition, this type of approach gives room for situations in terms of a cause-and-effect relationships in order to understand the realities. Thus, the application of quantitative approach for this study is appropriate as the study seeks to investigate the effect of teacher-school management relationships on academic performance at Bompeh Senior High Technical School in the Sekondi-Takoradi Metropolis.

3.5 Study Area

Effutu Municipal District, located in the southeast part of the Central Region, Ghana, is one of the twenty-two districts in the region. Effutu Municipal covers a total land area of 95 square kilometers. It is sandwiched by the Gomoa East District Assembly on its western, northern, and eastern flanks. To the south lies the Gulf of Guinea. Effutu Municipal District plays an essential role in the administrative landscape of Ghana, contributing to the development and well-being of its residents. According to the 2021 Population and Housing Census (PHC), the population of Effutu Municipality stands at 107,798. Out of this, there are 54,723 males and 53,075 females. In terms of educational institutions, the Municipality has 247 educational institutions, of which 74 (30%) are public institutions and 173 (70%) are private institutions. There are 78 pre-schools (24 public and 54 private), 77 Primary Schools (26 Public and 51 Private) and 47 Junior High Schools (22 Public and 25 Private). The Winneba Senior High School is the only public second cycle institution, while there are three (3) private Senior High Schools and two (2) Technical and Vocational Institutions in the Municipality. In addition to the educational institutions, there are also 12 public and private health facilities in the municipality, including 5 hospitals, 2 clinics, 3 CHIP compounds, 1 maternity home,

and 1 community health nurses training school. Also, the assembly also has a fire service, immigration office, police station, High way authority and among others.

3.6 Study Organization

The University of Education, Winneba (UEW), is a prominent public institution located in the Effutu Municipal District of the Central Region, Ghana. Established in 1992, the university is dedicated to the training of teachers and educational professionals to meet the country's growing educational needs. UEW plays a key role in shaping the educational landscape of Ghana, with its primary mission being the production of highly qualified educators for all levels of the educational system. UEW comprises several campuses, with the main campus situated in Winneba. The university is organized into various faculties, schools, and departments, each specializing in different academic disciplines. Key faculties include the Faculty of Educational Studies, Faculty of Science Education, Faculty of Social Science Education, Faculty of Languages Education, and Faculty of Home Economics. Additionally, UEW houses specialized schools such as the School of Creative Arts, the School of Graduate Studies, and School of Business The university's administrative structure includes the Office of the Vice-Chancellor, Pro-Vice-Chancellor, Registrar, and Deans of various faculties. The administration oversees the strategic direction, governance, and operational management of the institution. Within this framework, the Procurement Directorate plays a crucial role in managing procurement processes, ensuring that the university's procurement activities adhere to established policies and regulations.

The university’s procurement activities are vital for its operational efficiency and effectiveness. The Procurement Directorate is responsible for the acquisition of goods, services, and works needed to support the university's academic and administrative functions. This includes procurement for construction projects, laboratory equipment,

office supplies, and other essential services. The directorate ensures transparency, accountability, and value for money in all procurement processes, in line with national procurement laws and the Public Procurement Act.

3.7 Population

The population, as defined by Dusek, Yurova & Ruppel (2015) encompasses the entirety of elements that collectively constitute the unit of analysis. In simpler terms, population of the study refers to the entire group of individuals, cases, or elements that meet the criteria for inclusion in a research project. In the context of this study, the population comprises all public institutions operating within the district. Specifically, the population includes various types of public institutions such as government ministries, departments, agencies, educational institutions, healthcare facilities, local government offices, and other public service entities located within the geographical boundaries of the Effutu Municipal Assembly. These institutions may vary in terms of their size, organizational structure, functions, and levels of budgetary responsibility.

3.8 Sample and Sample Size Determination

In this research, the selection of the sample and the sampling method are crucial for ensuring the reliability and representativeness of the study's outcomes. The sample comprises staff members from various departments within the University of Education, Winneba, encompassing Procurement, Finance, Administration, Operations, Development, Planning, Revenue, Audit, Academic, and Account departments. The study employs stratified random sampling to ensure representation across the diverse departments and levels of procurement involvement within the university. Stratified random sampling is a method where the population is divided into distinct groups or strata, and samples are randomly selected from each stratum (Boschetti, Stehman &

Roy, 2016). This approach allows for the inclusion of participants from different departments, ensuring a comprehensive representation of the university's workforce.

A total sample size of 200 workers is selected through stratified random sampling. Within each of the ten departments, 20 workers are randomly chosen to participate in the study. This sampling strategy ensures that individuals from various departments and levels of procurement involvement are included, providing a comprehensive understanding of e-procurement adoption and its impact on supply chain performance within the University of Education, Winneba.

By employing stratified random sampling, the study aims to mitigate biases and ensure the generalizability of findings within the university context. This sampling method allows for the efficient selection of participants while ensuring adequate representation across different departments, ultimately enhancing the reliability and validity of the study's outcomes.

3.9 Sources of Data

3.9.1 Primary Data

In conducting this study, data was sourced primarily from primary sources, specifically through the administration of structured questionnaires to staff members involved in procurement activities at the University of Education, Winneba. The questionnaire collected data on e-procurement adoption, organizational culture, and supply chain performance directly from the participants. This approach ensured the direct collection of relevant information from participants, providing a firsthand perspective on the subjects of interest.

3.9.2 Secondary Data

No secondary data sources were utilized in this study. Although the examination of existing literature, organizational documents, and government reports could have provided valuable insights, the research focused solely on data collected through the questionnaire survey. This decision was made to maintain the focus on primary data and to ensure that the study's findings were based exclusively on direct responses from the participants involved in procurement activities at the University of Education, Winneba.

3.10 Instrumentation

In this research, the primary tool utilized for data collection is a questionnaire. This questionnaire is tailored to gather insights on E-procurement, organizational culture, and supply chain performance within public institutions located in the Effutu Municipality of Ghana. It consists solely of closed-ended questions, offering respondents a predefined set of response options. These responses are rated on a 5-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree."

As described by Krosnick (2018), a questionnaire is a list of inquiries pertaining to the objectives of the study that individuals are expected to answer. Hoxley (2016) further elaborated that it typically comprises a series of questions facilitating a smooth transition from one topic to another, usually addressing the same issue. It is widely acknowledged that questionnaires serve as a vital instrument in addressing research inquiries due to their confidentiality, sensitivity, and cost-effectiveness. Another benefit researcher enjoys when utilizing questionnaires is the ability to gather a wide range of information within a limited timeframe. The decision to employ a closed-ended questionnaire was made to afford respondents the flexibility to answer questions at their convenience.

The selection of closed-ended questions was based on their capacity to elicit structured responses, facilitating easier quantification and analysis of the collected data (Wang, Hong & Hsu, 2006). Respondents are presented with specific statements or prompts related to budgeting and budgetary control practices and are requested to indicate their level of agreement or disagreement with each statement using the 5-point Likert scale.

3.11 Validity and Reliability of the Instrument

Validity refers to the degree to which a research study accurately measures or reflects the concepts it intends to assess (Bryman, 2016). In the context of this study, ensuring the validity of the questionnaire is crucial to ensure that the data collected accurately represent the constructs of e-procurement adoption, supply chain performance, and organizational culture within public institutions in Effutu Municipality. The instruments will be validated by experts and undergo pre-tests. The researcher's supervisors will scrutinize the instrument along with the research questions. The supervisor will match the items on the instrument with the research questions. Based on the measurement and evaluation conducted by the supervisor, the instrument will be deemed suitable for producing valid results. Reliability refers to the consistency and stability of measurement over time and across different conditions (Creswell, 2009). In the context of this study, ensuring the reliability of the questionnaire is essential to obtain trustworthy and replicable results. Internal consistency reliability is assessed using measures such as Cronbach's alpha coefficient, which indicates the extent to which the questionnaire items are interrelated or consistently measure the same underlying construct. The result of the pilot test shows Cronbach's alpha value of 0.86. A Cronbach's alpha of 0.86 suggests that the items on the questionnaire are strongly related to each other. This value indicates that the instrument used is reliable, meaning

that it is likely to produce consistent results if administered to the same group of participants under the same conditions.

3.11 Data Collection Procedures

The data collection process commenced with an introductory letter issued by the Department of Accounting at the University of Education, Winneba. This letter was dispatched to the authorities of the chosen institutions to seek their permission for data collection. Prior to commencing data collection, participants were briefed on the study's objectives and their rights, and their consent was obtained before their involvement. Given the substantial sample size, two research assistants were enlisted to aid in the data collection process. They facilitated the distribution of questionnaires to the respondents.

Additionally, Google Forms were utilized to craft an electronic questionnaire for easy access and user-friendliness. The questionnaire was structured to capture pertinent information aligned with the research objectives, featuring closed-ended questions rated on a 5-point Likert scale. For workers unable to respond to the paper questionnaire due to their busy schedules, their email addresses were collected. The Google Forms questionnaire link was then disseminated to these workers from the selected public institutions included in the study. Clear instructions were provided alongside the questionnaire to guide respondents on how to complete and submit their responses electronically. workers were encouraged to partake in the survey and share their perspectives on budgeting and budgetary control practices within their respective institutions. This approach resulted in a 100% survey response rate.

3.10 Data Processing Analysis

Quantitative data analysis was conducted for this study. Initially, the collected data underwent a thorough cleaning process to address errors, inconsistencies, and missing values, ensuring data accuracy and reliability before proceeding with further analysis. The presentation of results primarily utilized tables. Descriptive statistical techniques were applied to summarize and describe key data characteristics, including measures such as mean, standard deviation, and frequency distributions, offering insights into central tendency, variability, and response distribution.

Furthermore, inferential statistical methods were employed to test hypotheses and draw conclusions about the population based on sample data. These methods encompassed hypothesis testing, correlation analysis and regression analysis, to explore relationships and associations among variables. Regression analysis specifically was utilized to assess the impact of independent variables, such as E-procurement adoption, on the dependent variable, namely supply chain performance. Through this analysis, the strength and direction of the relationship between variables were identified, and the impact of independent variables on the dependent variable was quantified.

3.11 Ethical Considerations

Ethical considerations hold significant importance in research endeavours, ensuring the protection and respect of participants' rights, dignity, and well-being throughout the research process. Ethical concerns, as defined by Ferreira, Buttell & Ferreira (2015), refer to researchers' shared understanding of appropriate and inappropriate conduct in scientific research. Participants must provide informed consent, maintain anonymity, and have their confidentiality safeguarded, as emphasized by Punch (2012), to avoid any harm resulting from their involvement. Before initiating fieldwork, the researcher introduced themselves to institution managers via a letter. Prior to data collection, clear

and comprehensive information regarding the study's objectives, procedures, risks, and benefits was provided to all participants, particularly the finance officers of selected public institutions. They were given the option to voluntarily participate and provided informed consent.

Informed consent was obtained from all workers, ensuring their comprehension of the study's purpose. Data anonymization was employed to protect individual identities, coupled with data security measures to ensure confidentiality. Safeguarding participants' responses and data confidentiality was paramount, with stringent measures in place to maintain anonymity. Data were securely stored and accessible only to the researcher. Participation in the study was entirely voluntary, with participants assured of the option to withdraw without facing repercussions. No coercion or undue influence was exerted to secure participation. To minimize potential discomfort or harm, non-invasive survey questions were utilized, and post-data collection debriefing sessions were offered to address any concerns and clarify the study's purpose.

The study upheld principles of honesty and integrity in reporting findings, with no conflicts of interest present. It adhered to all relevant ethical guidelines, regulations, and institutional policies concerning research involving human participants. Ethical approval was obtained from the appropriate research ethics committee before commencing the study.

CHAPTER FOUR

DATA PRESENTATION, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results of the data collected through the administration of structured questionnaires to staff members involved in procurement activities at the University of Education, Winneba. The chapter is organized to provide a comprehensive analysis and discussion of the findings in relation to the study's objectives. The chapter outlines the demographic characteristics of the respondents, followed by an in-depth presentation and analysis of the data on e-procurement adoption, organizational culture, and supply chain performance. The subsequent section delves into the relationship between e-procurement adoption and supply chain performance. Additionally, the moderating role of organizational culture on this relationship is explored in order to bring to light how factors such as leadership, communication, and employee engagement influence the outcomes of e-procurement initiatives.

4.1 Socio-Demographic Characteristics of Respondents

This section provides an overview of the socio-demographic characteristics of the respondents who participated in the study. The demographic variables examined include gender, age, educational qualification, years of experience, department/unit, and current employment status. This information is crucial for ensuring the representativeness of the sample and for identifying any patterns or trends that may influence the adoption of e-procurement and its impact on supply chain performance at the University of Education, Winneba. The result is presented in Table 4.1 below.

Table 4.1: Socio-Demographic Characteristics of Respondents

Socio-Demographic Characteristics	Frequency	Percentage (%)
Sex		
Male	109	54.5
Female	91	45.5
	200	**100**
Age group		
18-24 years	2	1.0
25-34 years	81	40.5
35-44 years	78	39.0
45-54 years	34	17.0
55 years and above	5	2.5
	200	**100**
Educational Qualification		
High School	0	0.0
Diploma	15	7.5
Bachelor's Degree	105	52.5
Master's Degree	75	37.5
Doctorate Degree	5	
	200	**100**
Years of Experience		
Less than a year	9	4.5
1-5 years	41	20.5
6-10 years	70	35.0
11-15 years	46	23.0
More than 15 years	34	17.0
	200	**100**
Department/Unit		
Procurement	20	10.0
Finance	20	10.0
Human Resource Divisiom	20	10.0
Operations	20	10.0
Development and Planning	20	10.0
Revenue	20	10.0
Audit	20	10.0
Academic	20	10.0
Library	20	10.0
Account	20	10.0
	200	**33**
Current Employment Status		
Full-Time	140	70.0
Part-Time	15	7.5
Contract	45	22.5
	200	**100**

Source: Field data, 2024

Data in Table 4.1 above shows that the gender distribution of the respondents is fairly balanced, with 54.5% male and 45.5% female participants. This near parity in gender representation suggests that the findings of this study would be generalized across both male and female staff members involved in procurement activities at the university.

Again, the demographic result shows that the age distribution indicates that the majority of respondents are within the 25-34 years (40.5%) and 35-44 years (39.0%) age groups. This suggests that a significant proportion of the staff involved in procurement activities are relatively young to middle-aged, potentially indicating a workforce that is likely to be more adaptable to technological changes such as e-procurement. The presence of a smaller percentage of respondents in the 45-54 years (17.0%) and 55 years and above (2.5%) age groups suggests that older staff members may be less involved in procurement activities.

In Table 4.1, the educational qualifications of the respondents reveal that a substantial majority hold a Bachelor's Degree (52.5%) or a Master's Degree (37.5%). Only a small fraction has a Doctorate Degree (2.5%) or a Diploma (7.5%), and none have only a High School education. This high level of educational attainment among the respondents indicates a well-qualified workforce, which is crucial for the effective implementation and management of e-procurement systems.

In terms of years of experience, the majority of respondents have between 6-10 years (35.0%) and 11-15 years (23.0%) of experience. A smaller proportion have more than 15 years of experience (17.0%) or between 1-5 years (20.5%), and only a few have less than a year of experience (4.5%). This distribution suggests that most of the staff involved in procurement have substantial experience, which is beneficial for the successful adoption and utilization of e-procurement systems.

Data in Table 4.1 further shows that the respondents are evenly distributed across various departments/units, with each department contributing 10.0% to the total sample. These departments include Procurement, Finance, Human Resource Division, Operations, Development and Planning, Revenue, Audit, Academic, Library, and Account. This even distribution ensures that the perspectives from different functional areas are well-represented in the study, providing a comprehensive view of e-procurement adoption across the university. Again, the employment status of the respondents shows that the majority are full-time employees (70.0%), with smaller proportions being on contract (22.5%) or part-time (7.5%). The dominance of full-time staff suggests a stable workforce, which is advantageous for the consistent implementation and support of e-procurement initiatives.

The socio-demographic characteristics of the respondents indicate a balanced representation of gender, a predominantly young to middle-aged workforce, and a high level of educational attainment. The substantial experience in procurement activities and the even distribution across various departments suggest that the study's findings are well-grounded and reflective of the diverse perspectives within the University of Education, Winneba. The predominance of full-time staff further reinforces the reliability and stability of the workforce involved in e-procurement activities. Overall, these characteristics provide a strong foundation for assessing the level of e-procurement adoption and its impact on supply chain performance within the university.

4.2 Assessing the Level of E-Procurement Adoption

This section examines the first objective of the study, which aims to assess the level of e-procurement adoption at the University of Education, Winneba. To achieve this,

descriptive statistics such as frequency, mean, and standard deviation have been utilized to analyze the data collected. The result is presented in Table 4.2 below.

Table 4.2: The Level of E-Procurement Adoption

Level of E-Procurement Adoption	SD	D	N	A	SA	Mean	S.D
The university has implemented an e-procurement system for purchasing goods and services.	32 (16.0%)	27 (13.5%)	45 (22.5%)	56 (28.0%)	40 (20.0%)	3.22	1.35
Employees are regularly trained on how to use the e-procurement system.	50 (25.0%)	55 (27.5%)	30 (15.0%)	37 (18.5%)	28 (14.0%)	2.69	1.39
The e-procurement system is user-friendly and easy to navigate.	55 (27.5%)	51 (25.5%)	26 (13.0%)	30 (14.5%)	38 (19.5%)	2.73	1.49
E-procurement processes are well-integrated into the daily operations of the university.	62 (31.0%)	79 (51.0%)	40 (8.5%)	10 (5.0%)	9 (4.5%)	2.01	1.00
The transition from traditional procurement to e-procurement has been smooth.	50 (25.0%)	55 (27.5%)	25 (12.5%)	40 (20.0%)	30 (15.0%)	2.73	1.42
The e-procurement system has reduced procurement cycle times.	50 (25.0%)	55 (27.5%)	25 (12.5%)	41 (20.5%)	29 (14.5%)	2.72	1.41
The e-procurement system has increased procurement efficiency.	51 (25.5%)	55 (27.5%)	18 (9.0%)	45 (22.5%)	31 (15.5%)	2.75	1.44
The e-procurement system has improved transparency in the procurement process.	28 (14.0%)	31 (15.5%)	21 (10.5%)	57 (28.5%)	63 (31.5%)	3.48	1.43

Mean of Means = 2.79 (Level of E-Procurement Adoption)
Source: Field data, 2024

The data in Table 4.2 provides analysis into various aspects of e-procurement adoption. Each statement related to e-procurement adoption was rated by respondents on a scale

ranging from Strongly Disagree (SD) to Strongly Agree (SA). Regarding the implementation of the e-procurement system for purchasing goods and services, 16.0% of respondents strongly disagreed, and 13.5% disagreed. Conversely, 28.0% agreed, and 20.0% strongly agreed with the statement. The mean score for this item is 3.22 with a standard deviation of 1.35, indicating a moderate level of agreement among respondents regarding the implementation of the e-procurement system.

On the subject of training employees to use the e-procurement system, 25.0% strongly disagreed, and 27.5% disagreed that regular training is provided. Only 14.0% strongly agreed with the statement. The mean score is 2.69 with a standard deviation of 1.39, suggesting that regular training on the e-procurement system is perceived to be lacking.

Concerning the user-friendliness of the e-procurement system, 27.5% strongly disagreed, and 25.5% disagreed that the system is user-friendly and easy to navigate, while 19.5% strongly agreed. The mean score is 2.73 with a standard deviation of 1.49, indicating a relatively low level of satisfaction with the user-friendliness of the system.

The integration of e-procurement processes into daily operations was also assessed, with 31.0% strongly disagreeing and 51.0% disagreeing that these processes are well-integrated. Only 4.5% strongly agreed. The mean score is 2.01 with a standard deviation of 1.00, highlighting that integration into daily operations is perceived as inadequate.

Regarding the transition from traditional procurement, 25.0% strongly disagreed, and 27.5% disagreed that the transition has been smooth, while 15.0% strongly agreed. The mean score is 2.73 with a standard deviation of 1.42, indicating mixed perceptions about the smoothness of the transition process.

The reduction in procurement cycle times due to the e-procurement system was another point of focus, with 25.0% strongly disagreeing, and 27.5% disagreeing. Only 14.5% strongly agreed. The mean score is 2.72 with a standard deviation of 1.41, suggesting

moderate agreement on the reduction of procurement cycle times. Regarding the increase in procurement efficiency, 25.5% strongly disagreed, and 27.5% disagreed, while 15.5% strongly agreed. The mean score is 2.75 with a standard deviation of 1.44, indicating a moderate level of agreement on the system's impact on procurement efficiency.

Improvement in transparency due to the e-procurement system was rated more favorably, with 14.0% strongly disagreeing, and 15.5% disagreeing. In contrast, 31.5% strongly agreed. The mean score is 3.48 with a standard deviation of 1.43, showing a higher level of agreement on the improvement of transparency.

In summary, the mean of means for the level of e-procurement adoption is 2.79, suggesting a moderate level of adoption at the University of Education, Winneba. While there are some positive perceptions, particularly regarding the improvement in transparency, other areas such as user-friendliness, training, and integration into daily operations indicate room for improvement. These findings provide a comprehensive understanding of the current state of e-procurement adoption and highlight specific areas where efforts could be focused to enhance the system's effectiveness and efficiency.

4.3 Relationship Between E-Procurement Adoption and Supply Chain Performance

This section addresses the second objective of the study, which aims to investigate the relationship between e-procurement adoption and supply chain performance at the University of Education, Winneba. To explore this relationship, a regression analysis has been conducted, providing insights into how e-procurement practices influence various aspects of supply chain performance. Additionally, a correlation analysis has been employed as a robustness check to further validate the findings. To facilitate the

analysis, indices for e-procurement adoption and supply chain performance were created using principal component analysis (PCA), ensuring a comprehensive and accurate assessment of the data. The indices were then used for the regression and correlation analysis. The results are presented in Table 4.3 and Table 4.6 respectively.

Table 4.3: Regression Analysis

Model	Coefficients	Std. Error	t	Sig.	95.0% Confidence Interval for B	
					Lower Bound	Upper Bound
(Constant)	6.001	0.809	7.418	0.000	4.406	7.597
E-Procurement adoption	0.466	0.063	7.415	0.000	0.342	0.590

Source: Field data, 2024

The regression analysis results in Table 4.3 indicate a positive and statistically significant relationship between e-procurement adoption and supply chain performance. The constant (intercept) of the regression model is 6.001, with a standard error of 0.809. This coefficient is significant at the 0.000 level, as indicated by the t-value of 7.418. This suggests that when e-procurement adoption is held constant, the supply chain performance index is estimated to be 6.001.

Also, the coefficient for e-procurement adoption is 0.466, with a standard error of 0.063. This coefficient is also significant at the 0.000 level, with a t-value of 7.415. This result indicates that for every unit increase in the e-procurement adoption index, the supply chain performance index increases by 0.466 units. The 95% confidence interval for the coefficient of e-procurement adoption ranges from 0.342 to 0.590, further confirming the positive relationship. These findings suggest that higher levels of e-

procurement adoption are associated with better supply chain performance. The significant positive coefficient indicates that enhancing e-procurement practices can lead to improvements in various aspects of the supply chain, such as efficiency, transparency, and overall performance.

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.466	0.217	0.213	0.88691659

Source: Field data, 2024

The model summary presented in Table 4.4 provides key statistics about the regression analysis. The R value, which represents the correlation coefficient, is 0.466. This indicates a moderate positive correlation between e-procurement adoption and supply chain performance. The R Square value, also known as the coefficient of determination, is 0.217. This means that approximately 21.7% of the variance in supply chain performance has been explained by the level of e-procurement adoption. While this is a significant portion, it also suggests that other factors not included in the model are influencing supply chain performance. The Adjusted R Square value is 0.213. The adjusted R Square accounts for the number of predictors in the model and adjusts the R Square value accordingly. This slight reduction from the R Square value indicates that the model is a good fit but recognizes the possible inflation of the R Square value due to the inclusion of multiple predictors.

Table 4.5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.249	1	43.249	54.981	0.000
	Residual	155.751	198	0.787		
	Total	199.000	199			

Source: Field data, 2024

The ANOVA results in Table 4.5 above indicate that the regression model is statistically significant. The high F-statistic value (54.981) and the corresponding p-value (0.000) suggest that there is a very low probability that the observed relationship between e-procurement adoption and supply chain performance is due to chance. Therefore, the study conclude that e-procurement adoption significantly influences supply chain performance.

Table 4.6: Correlation Between E-Procurement Adoption and Supply Chain Performance

Correlations

		E-Procurement Adoption	Supply Chain Performance
E-Procurement Adoption	Pearson Correlation	1	.466**
	Sig. (2-tailed)		0.000
	N	200	200
Supply Chain Performance	Pearson Correlation	0.466**	1
	Sig. (2-tailed)	0.000	
	N	200	200

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

Source: Field data, 2024

The Pearson correlation coefficient between e-procurement adoption and supply chain performance is 0.466. This value indicates a moderate positive correlation, suggesting

that as e-procurement adoption increases, supply chain performance also tends to improve. The p-value associated with this correlation is 0.000, which is less than the conventional threshold of 0.01. This indicates that the observed correlation is statistically significant, meaning that there is a very low probability that this correlation occurred by chance.

Both the regression result in Table 4.3 and correlation analyses in Table 4.6 indicate a significant positive relationship between e-procurement adoption and supply chain performance. The correlation coefficient (r = 0.466) aligns with the regression coefficient (B = 0.466), reinforcing the conclusion that e-procurement adoption positively impacts supply chain performance. The correlation analysis serves as a robustness check by validating the relationship identified through regression analysis. The consistency in findings across both statistical methods strengthens the credibility of the results.

4.4 The Moderating Role of Organizational Culture in the Relationship Between E-Procurement Adoption and Supply Chain Performance

This section focuses on the third objective of the study, which aims to explore the moderating role of organizational culture in the relationship between e-procurement adoption and supply chain performance at the University of Education, Winneba. To analyze this moderating effect, a regression analysis has been performed, considering organizational culture as a potential influencer in the e-procurement and supply chain performance nexus. Additionally, principal component analysis (PCA) was used to create an index for organizational culture, ensuring a robust and detailed examination of its impact. The result is presented in Table 4.7 below.

Table 4.7: The Moderating Role of Organizational Culture

Model	Unstandardized Coefficients		t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error			Lower Bound	Upper Bound
(Constant)	1.975	0.517	3.822	0.000	.956	2.994
E-Procurement	0.433	0.088	4.935	0.000	0.260	0.606
Organizational Culture	0.235	0.081	2.888	0.004	0.074	0.395
E-Procurement* Organizational Culture	3.577	1.038	3.446	0.001	1.530	5.624

Source: Field data, 2024

The regression analysis in Table 4.7 explores the moderating effect of organizational culture on the relationship between e-procurement adoption and supply chain performance. The constant term (B = 1.975, $p < 0.001$) represents the baseline level of supply chain performance when both e-procurement adoption and organizational culture are at zero. This value is significant, indicating that other factors aside from e-procurement and organizational culture contribute to supply chain performance.

The coefficient for e-procurement adoption is 0.433 ($p < 0.001$). This positive and significant coefficient suggests that as e-procurement adoption increases, supply chain performance also improves. This reinforces the findings from the previous sections that highlighted a positive relationship between e-procurement adoption and supply chain performance. The result in Table 4.7 further revealed that the coefficient for organizational culture is 0.235 ($p = 0.004$). This indicates that a positive organizational

culture independently contributes to better supply chain performance. The significance of this coefficient shows that organizational culture plays a crucial role in enhancing supply chain performance, regardless of the level of e-procurement adoption.

The interaction term between e-procurement adoption and organizational culture has a coefficient of 3.577 ($p = 0.001$). This significant positive coefficient indicates that organizational culture significantly moderates the relationship between e-procurement adoption and supply chain performance. The interaction term's coefficient is much larger than those of the individual predictors (e-procurement adoption and organizational culture). This suggests that the combined effect of having both e-procurement adoption and a strong organizational culture is more than the sum of their individual effects. This synergistic effect highlights the critical role of organizational culture in leveraging the benefits of e-procurement systems. Specifically, the positive impact of e-procurement adoption on supply chain performance is amplified in the presence of a supportive organizational culture.

The regression analysis demonstrates that organizational culture significantly moderates the relationship between e-procurement adoption and supply chain performance at the University of Education, Winneba. While e-procurement adoption independently enhances supply chain performance, this effect is significantly strengthened when the organizational culture is conducive and supportive. This finding underscores the importance of fostering a positive organizational culture to maximize the benefits of e-procurement systems on supply chain performance.

Table 4.8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.797	0.636	0.628	0.60975248

Source: Field data, 2024

Table 4.8 present model summary result for the regression model estimated in Table 4.7 above. The R Value (0.797) represents the correlation coefficient, indicating a strong positive relationship between the predictors (e-procurement adoption, organizational culture, and their interaction) and the dependent variable (supply chain performance). An R value of 0.797 suggests that the model explains a significant portion of the variability in supply chain performance.

The result further shows that the R Square value of 0.636 indicates that approximately 63.6% of the variance in supply chain performance can be explained by the combined effects of e-procurement adoption, organizational culture, and their interaction. This suggests a substantial proportion of the variability in supply chain performance is accounted for by these predictors. The adjusted R Square value of 0.628 adjusts the R Square value for the number of predictors in the model, providing a more accurate estimate of the model's explanatory power. This value confirms that the model has a strong explanatory power, even when accounting for the number of predictors.

Table 4.9: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.780	3	23.927	36.862	0.000
	Residual	127.220	196	0.649		
	Total	199.000	199			

Source: Field data, 2024

The ANOVA result in Table 4.9 presents the overall significance of the regression model.

The F-statistic tests whether the overall regression model is a good fit for the data. The high F-value (36.862) and the corresponding significance level (Sig.) of 0.000 indicate that the model is statistically significant. This means that the predictors (e-procurement adoption, organizational culture, and their interaction) significantly explain the variance in supply chain performance.

4.5 Challenges of E-Procurement Adoption

This section addresses the fourth objective of the study, which seeks to identify the challenges hindering e-procurement adoption at the University of Education, Winneba. To analyze these challenges, descriptive statistics such as frequency, and mean have been employed. Additionally, the Relative Importance Index (RII) was used to rank the challenges according to their significance based on responses from the respondents. This approach provides a comprehensive understanding of the major obstacles to e-procurement adoption, allowing for the prioritization of issues that need to be addressed to enhance the effectiveness of e-procurement practices within the university. The result is presented in Table 4.10 below.

Table 4.10: Challenges of E-Procurement Adoption

Statements	SD (1)	D (2)	N (3)	A (4)	SA (5)	Mean	RII	Rank
There is a lack of adequate training programmes to equip employees with the necessary skills for e-procurement usage.	11 (5.5%)	13 (6.5%)	9 (4.5%)	78 (39.0%)	89 (44.5%)	4.11	0.82	1
Security risks associated with e-procurement systems pose a significant challenge for adoption.	15 (7.5%)	18 (9.0%)	11 (5.5%)	72 (36.0%)	84 (42.0%)	3.96	0.79	2
The existing workforce lacks the technical expertise required for effective utilization of e-procurement systems.	19 (9.5%)	15 (7.5%)	5 (2.5%)	87 (43.5%)	74 (37.0%)	3.91	0.78	3
There is resistance from employees towards adopting e-procurement systems.	21 (10.5%)	18 (9.0%)	15 (7.5%)	66 (33.0%)	80 (40.0%)	3.83	0.77	4
The university lacks adequate technological infrastructure to support e-procurement systems.	27 (13.5%)	22 (11.0%)	12 (6.0%)	61 (30.5%)	78 (39.0%)	3.71	0.74	5
E-procurement systems face difficulties in integrating with existing university systems and processes.	21 (10.5%)	27 (13.5%)	12 (6.0%)	79 (39.5%)	61 (30.5%)	3.66	0.73	6

Source: Field data, 2024

Table 4.10 presents the descriptive statistics and Relative Importance Index (RII) for various challenges associated with the adoption of e-procurement. The table includes

responses on a Likert scale (1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A), and 5 = Strongly Agree (SA)), along with the mean and RII values, which help to rank the challenges based on their perceived significance.

The result in Table 4.10 revealed that one major significant challenge associated with e-procurement is lack of adequate training programmes. This challenge received the highest mean score (4.11) and RII (0.82), indicating that it is perceived as the most significant challenge. The majority of respondents (83.5%) either agreed or strongly agreed that inadequate training programmes hinder the effective use of e-procurement systems. Also, security risks were ranked as the second most significant challenge, with a mean score of 3.96 and an RII of 0.79. A substantial portion of respondents (78%) agreed or strongly agreed that security concerns are a major barrier. Security concerns need to be addressed to build confidence among users and stakeholders in the e-procurement system. Implementing robust security measures and educating users about security protocols could mitigate these risks.

The lack of technical expertise was identified as another major challenge, with a mean score of 3.91 and an RII of 0.78. About 80.5% of respondents agreed or strongly agreed that the current workforce lacks the necessary technical skills. Also, employee resistance was noted as a significant challenge, with a mean score of 3.83 and an RII of 0.77. A considerable proportion (73%) of respondents agreed or strongly agreed that resistance from employees hinders e-procurement adoption. This resistance could stem from a lack of awareness or understanding of the benefits of e-procurement. Change management strategies, including communication and involvement of employees in the transition process, could help reduce resistance.

Inadequate technological infrastructure was ranked fifth, with a mean score of 3.71 and an RII of 0.74. A significant number of respondents (69.5%) agreed or strongly agreed

that the existing infrastructure is insufficient to support e-procurement. The university should invest in upgrading its technological infrastructure to ensure it can support the implementation and operation of e-procurement systems effectively. Lastly, challenges related to the integration of e-procurement systems with existing university systems and processes were ranked sixth, with a mean score of 3.66 and an RII of 0.73. Around 70% of respondents agreed or strongly agreed that integration difficulties pose a challenge. Ensuring compatibility and seamless integration of e-procurement systems with existing processes is crucial for smooth operations. The university may need to collaborate with technology providers to develop solutions that facilitate better integration.

The analysis highlights several key challenges that need to be addressed to enhance the adoption and effectiveness of e-procurement at the University of Education, Winneba. Prioritizing the implementation of adequate training programmes, addressing security risks, enhancing technical expertise, managing employee resistance, upgrading technological infrastructure, and ensuring seamless system integration are essential steps to overcome these barriers. By tackling these challenges, the university can improve its e-procurement practices, ultimately leading to better supply chain performance.

4.6 Discussion of Result

Assessing the Level of E-Procurement Adoption

The analysis of the level of e-procurement adoption at the University of Education, Winneba, reveals a mean of means score of 2.79. This score suggests that the university is currently at a moderate level of e-procurement adoption. The findings indicate a mixed perception among respondents, highlighting both strengths and areas requiring improvement.

One of the key positive outcomes of the e-procurement system implementation is the perceived improvement in transparency. The higher mean score in this area reflects respondents' agreement that the e-procurement system has enhanced the transparency of procurement processes. This is a significant achievement, as transparency is crucial for ensuring fairness, accountability, and reducing corruption in procurement activities. However, the mean score for the user-friendliness of the e-procurement system was relatively low, indicating that many respondents find the system challenging to navigate. This suggests a need for improvements in the system's interface and usability to make it more accessible and efficient for users. Ensuring that the system is intuitive and user-friendly is vital for encouraging widespread adoption and effective use. Training emerged as a critical area needing attention. The data showed that a substantial portion of respondents felt that there are inadequate training programmes to equip employees with the necessary skills for using the e-procurement system. This indicates a gap in capacity-building efforts, which could hinder the effective use of the system. To address this, the university should invest in comprehensive training programmes that cover all aspects of the e-procurement process.

Also, the integration of e-procurement processes into the daily operations of the university received a low mean score, indicating that the system is not yet fully embedded into the routine activities of the institution. This lack of integration could be due to several factors, including resistance to change, inadequate system support, or insufficient training. Improving the integration of e-procurement into everyday operations is essential for maximizing its benefits and ensuring smooth procurement processes. In order to contextualize the findings on the level of e-procurement adoption, it is useful to apply theoretical frameworks such as the Technology Acceptance Model (TAM) and the Resource-Based View (RBV) theory as discussed in chapter two of the

study. The results indicated that the e-procurement system has positively impacted transparency. This aligns with the concept of perceived usefulness in TAM, as users see the system as beneficial for enhancing transparency in procurement processes. When users perceive that the technology improves their job performance, they are more likely to adopt it. However, the lower scores related to user-friendliness and training suggest challenges with perceived ease of use. According to TAM, if users find the system difficult to use, their acceptance and utilization of the technology will be hindered. The findings indicate a need to improve the system's interface and provide comprehensive training to enhance its ease of use, thus fostering higher levels of adoption. TAM also suggests that both perceived usefulness (PU) and perceived ease of use (PEOU) influence users' behavioral intention to use the technology. The moderate overall adoption level reflects a balance where the benefits are recognized, but usability issues and insufficient training limit broader and more enthusiastic adoption. Improving PEOU through better training and a more user-friendly interface could increase users' behavioral intentions to use the system, leading to higher adoption rates.

Furthermore, the results indicate a lack of adequate training programmes, highlighting a gap in human capital. According to resource-based view (RBV), well-trained employees are a valuable resource that can significantly influence the successful adoption and utilization of new technologies. Enhancing the skills and competencies of the university's workforce through targeted training programmes will likely improve e-procurement adoption, as knowledgeable employees can effectively use and champion the system. The moderate level of e-procurement adoption suggests that the technological infrastructure at the university may not be fully optimized to support the system. RBV suggests that superior technological resources would provide a

competitive edge. By investing in advanced and user-friendly e-procurement systems, the university can overcome usability barriers and achieve higher adoption rates.

In the empirical front, the result in relation to objective one which found moderate low level of e-procurement adoption agrees with existing literature such as Gunasekaran et al. (2009) and Ibem et al. (2021). Gunasekaran et al. (2009) found a surprisingly low level of e-procurement adoption among SMEs in Southcoast Massachusetts, despite recognizing its strategic value and potential impact on performance. Barriers such as lack of top management initiative, fear of change, and insufficient skills were noted. The study indicated that tangible readiness was not an issue, but behavioral readiness was lacking. The findings of this study, align with Gunasekaran et al. (2009) in that both studies highlight a moderate to low level of e-procurement adoption. Both contexts suggest that while the infrastructure and potential benefits are recognized, behavioral and organizational issues such as insufficient training and lack of integration into daily operations impede higher levels of adoption. The importance of top management support and addressing user resistance is a common theme.

Ibem et al. (2021) study in the Nigerian construction sector found relatively high usage of e-procurement tools for specific tasks like tendering and payments but low usage for monitoring work progress and tracking materials. Factors influencing users' experience included the reliability of Internet infrastructure, ease of use, operational environment, change management issues, and system interoperability. The findings of this study also indicate that certain aspects of e-procurement are more positively perceived (e.g., transparency), while others (e.g., ease of use, training) pose significant challenges. Similar to the Nigerian context, factors such as ease of use and the adequacy of the technological environment play crucial roles. Both studies emphasize the need for

robust training programmes and improved system integration to enhance user experience and adoption rates.

Relationship Between E-Procurement Adoption and Supply Chain Performance

The result indicating a positive and statistically significant relationship between e-procurement adoption and supply chain performance at the University of Education, Winneba. This finding suggests that as the level of e-procurement adoption increases, the performance of the supply chain also improves. This statistically significant result indicates that e-procurement adoption is a meaningful predictor of supply chain performance improvements. In other words, higher levels of e-procurement adoption are associated with better performance outcomes in the supply chain. The positive relationship suggests that adopting e-procurement enhances supply chain efficiency. This would be due to streamlined procurement processes, faster transaction times, and reduced paperwork, leading to overall cost savings and improved resource allocation. E-procurement systems often come with built-in tracking and monitoring capabilities, which can increase transparency in the procurement process. This enhanced transparency would reduce corruption and fraud, ensuring that resources are used more effectively and ethically. Again, by using e-procurement, the university can maintain better communication and coordination with suppliers. This improved relationship can lead to more reliable supply chains, timely deliveries, and better quality of goods and services.

The findings align with several established theories and models in the field such as the technology acceptance model and resource-based view theory. According to TAM, perceived usefulness and ease of use significantly impact technology adoption. The positive relationship found in this study suggests that users at the university find e-procurement systems useful in improving supply chain performance, which encourages

their adoption. Resource-Based View (RBV) theory emphasizes the importance of leveraging organizational resources to gain a competitive advantage. E-procurement systems would be seen as a valuable technological resource that enhances the supply chain capabilities of the university, leading to improved performance.

The findings of this study are consistent with existing literature that highlights the benefits of e-procurement adoption. For example, Desmond (2022) found that e-procurement practices, along with supplier integration, positively impact supply chain performance. The findings of the current study align with Desmond's conclusions. Both studies show a positive relationship between e-procurement adoption and improved supply chain performance. The emphasis on automating procurement processes to enhance efficiency and reduce bureaucracy supports the current study's findings of improved supply chain efficiency due to e-procurement. Also, Waithaka and Kimani (2021) revealed that e-procurement positively affects the performance of the supply chain function in county governments in Kenya, contributing to the competitive acquisition of quality goods. The results of the current study are in agreement with Waithaka and Kimani's findings. Both studies confirm that e-procurement adoption enhances supply chain performance, suggesting that e-procurement practices contribute to competitive advantages through efficient and effective procurement processes. Again, Chirchir, Ngeno, and Chepkwony (2015) demonstrated that e-procurement adoption positively influences partnership, information sharing, and supply chain integration practices in tea firms in Kenya. E-procurement adoption accounted for significant variances in these supply chain management practices. The current study's findings are consistent with those of Chirchir et al. (2015) as the studies highlight the positive impact of e-procurement adoption on supply chain performance. The

significant relationship between e-procurement and supply chain performance supports the argument that e-procurement enhances supply chain efficiency and effectiveness.

To sum it up, the findings of the current study indicating a positive and statistically significant relationship between e-procurement adoption and supply chain performance at the University of Education, Winneba, are supported by empirical evidence from the literature. The studies by Desmond (2022), Waithaka and Kimani (2021), Chirchir, Ngeno, and Chepkwony (2015), and Hsin Chang, Tsai, and Hsu (2013) all highlight the beneficial impacts of e-procurement on various aspects of supply chain performance. These empirical studies reinforce the conclusion that e-procurement adoption enhances efficiency, transparency, and integration within supply chains, ultimately leading to improved performance outcomes.

The Moderating Role of Organizational Culture in the Relationship Between E-Procurement Adoption and Supply Chain Performance

The regression analysis indicates that organizational culture plays a significant moderating role in the relationship between e-procurement adoption and supply chain performance. This means that while e-procurement adoption independently contributes to enhanced supply chain performance, the presence of a positive and supportive organizational culture amplifies this effect, leading to even better performance outcomes.

The study finds that e-procurement adoption by itself leads to improvements in supply chain performance. This aligns with previous research that has shown e-procurement to enhance efficiency, reduce costs, and improve transparency and accountability within supply chains. However, organizational culture, which refers to the values, beliefs, and behaviors that characterize an organization, significantly moderates this relationship. A supportive culture is one that encourages innovation, openness to

change, collaboration, and continuous improvement. The significant moderating effect found in the study suggests that the benefits of e-procurement are not fully realized unless the organizational culture supports such technological and process innovations. For instance, if employees are resistant to change or if there is a lack of collaborative spirit, the adoption of e-procurement might face challenges, thus limiting its positive impact on supply chain performance.

By fostering a supportive organizational culture, the full potential of e-procurement systems would be realized, leading to significant improvements in supply chain performance. This would result in enhanced efficiency, cost savings, better supplier relationships, and improved overall organizational performance. Organizations that invest in nurturing a positive culture are likely to see greater returns on their technological investments, as employees are more likely to adopt and effectively utilize new systems and processes. The results of this study emphasize the critical role of organizational culture in maximizing the benefits of e-procurement adoption on supply chain performance. Therefore, to achieve optimal supply chain performance, organizations must not only focus on technological adoption but also on cultivating a culture that aligns with and supports these technological advancements. This holistic approach would lead to sustained improvements and a competitive edge in supply chain management.

The findings of the study, which demonstrate that organizational culture significantly moderates the relationship between e-procurement adoption and supply chain performance, is supported by the Technology Acceptance Model (TAM) and the Resource-Based View (RBV) theory. The study's findings suggest that the perceived usefulness of e-procurement is significantly influenced by the organizational culture. A supportive culture that encourages innovation and values technological advancements

would enhance employees' perceptions of the usefulness of e-procurement. This is because such a culture typically provides the necessary resources, training, and incentives for employees to effectively use the new system. When employees perceive e-procurement as useful, they are more likely to adopt and utilize it fully, leading to improved supply chain performance. Organizational culture also affects perceived ease of use. A culture that fosters continuous learning and provides adequate support for technological initiatives can make the adoption process smoother for employees. This includes offering comprehensive training programmes and ensuring that the technological infrastructure is user-friendly. When employees find e-procurement easy to use, they are more likely to embrace it, which enhances supply chain performance.

According to Resource-Based View (RBV) theory, e-procurement would be considered a valuable, rare, and inimitable resource that provides a competitive advantage. The adoption of e-procurement systems can streamline procurement processes, reduce costs, and improve efficiency, thereby enhancing supply chain performance. However, the effective utilization of e-procurement depends on the organizational culture. A culture that supports technological innovation can facilitate the successful implementation and integration of e-procurement systems. RBV also highlights the importance of complementary capabilities. Organizational culture acts as a complementary capability that enhances the value of e-procurement systems. A positive culture that promotes collaboration, adaptability, and continuous improvement can maximize the benefits of e-procurement. It ensures that employees are aligned with the organization’s strategic goals and are motivated to leverage the new system to improve supply chain performance.

The findings on the moderating role of organizational culture in the relationship between e-procurement adoption and supply chain performance is been supported by

several empirical studies exploring the link between organizational culture and organizational performance. Osei et al. (2023) conducted a study on how organizational culture affects the performance of sustainable supply chains, revealing that specific components of organizational culture, such as developmental, hierarchical, and group culture, are associated with better sustainable supply chain performance. This finding supports the result that a conducive and supportive organizational culture enhances the positive impact of e-procurement adoption on supply chain performance. The study's emphasis on the role of external integration in mediating the relationship between organizational culture and supply chain performance aligns with the current findings, highlighting the importance of fostering a positive organizational culture to maximize e-procurement benefits. Also, Rosmawati and Rasyid (2023) study on the impact of work environment and organizational culture on employee job effectiveness found that a positive organizational culture significantly improves employee performance and productivity. This finding supports the current study's emphasis on the importance of a supportive organizational culture in enhancing the effects of e-procurement adoption on supply chain performance. The attributes of a positive organizational culture, such as teamwork and performance orientation, are crucial in creating an environment where e-procurement can thrive. Gyamfi, Adamu, and Billa (2021) investigated the relationship between organizational culture and compliance with the Public Procurement Act, finding a significant correlation between organizational culture and adherence to procurement regulations. This aligns with the current findings, suggesting that a culture characterized by transparency, accountability, and ethical conduct enhances e-procurement adoption and supply chain performance. The study reinforces the importance of a positive organizational culture in ensuring compliance and maximizing the benefits of new procurement systems.

Challenges of E-Procurement Adoption

The analysis of the challenges hindering e-procurement adoption at the University of Education, Winneba, reveals several critical areas that need attention to improve the effectiveness and uptake of e-procurement systems. One of the most significant challenges identified is the lack of adequate training programmes for employees. Effective e-procurement adoption requires that employees are well-equipped with the necessary skills and knowledge to use the system efficiently. Without proper training, employees may struggle to utilize the system to its full potential, leading to suboptimal performance and resistance to change. By prioritizing the implementation of comprehensive training programmes, the university would ensure that staff members are proficient in using e-procurement tools, thereby enhancing overall system adoption and efficiency.

Security risks associated with e-procurement systems also pose a significant challenge. Concerns about data breaches, fraud, and unauthorized access would deter organizations from fully embracing e-procurement. Addressing these security issues is crucial to building trust and confidence in the system. Implementing robust security measures, such as encryption, multi-factor authentication, and regular security audits, would mitigate these risks and encourage wider adoption of e-procurement practices. The existing workforce's lack of technical expertise is another barrier to e-procurement adoption. Employees need to have a certain level of technical proficiency to navigate and troubleshoot e-procurement systems effectively. Enhancing technical expertise through targeted training and continuous professional development would help bridge this gap. Providing resources and support for employees to develop their technical skills will facilitate smoother implementation and utilization of e-procurement systems.

Employee resistance to adopting e-procurement systems is another critical challenge. Resistance would stem from a fear of change, a lack of understanding of the benefits, or concerns about job security. To overcome this resistance, it is essential to engage employees in the change process, communicate the advantages of e-procurement clearly, and provide reassurances about job roles. Involving employees in decision-making and offering incentives for embracing the new system would also help mitigate resistance and foster a more positive attitude towards e-procurement. The analysis also identifies inadequate technological infrastructure as a barrier to effective e-procurement adoption. For e-procurement systems to function optimally, the university needs to have the necessary technological infrastructure in place, including reliable internet connectivity, up-to-date hardware, and software, and technical support services. Upgrading the technological infrastructure to meet the demands of e-procurement is essential for ensuring that the system operates smoothly and efficiently.

Finally, difficulties in integrating e-procurement systems with existing university systems and processes present a significant challenge. Seamless integration is crucial for the efficient flow of information and for leveraging the full benefits of e-procurement. Addressing integration issues requires careful planning, coordination, and possibly investing in compatible technologies or middleware that would bridge gaps between different systems. Ensuring that e-procurement systems are compatible with other organizational systems will enhance overall functionality and performance.

Addressing these challenges namely: training, security, technical expertise, employee resistance, technological infrastructure, and system integration are essential steps to improve the adoption and effectiveness of e-procurement at the University of Education, Winneba. By tackling these barriers, the university would enhance its e-procurement practices, leading to improved supply chain performance and greater

organizational efficiency. The findings are supported by the Technology Acceptance Model (TAM) and Resource-Based View (RBV) theory. The Technology Acceptance Model (TAM) posits that perceived usefulness and perceived ease of use are the primary factors influencing technology adoption. One of the key findings of the study is the need for adequate training programmes. According to TAM, if users perceive e-procurement as useful, they are more likely to adopt it. By providing comprehensive training, the university would demonstrate the benefits and efficiency gains of e-procurement, thereby enhancing its perceived usefulness among employees. The analysis highlights technical expertise and integration issues as significant barriers. TAM suggests that the easier a technology is to use, the more likely it is to be adopted. Enhancing technical expertise through training and ensuring seamless integration with existing systems can make the e-procurement system more user-friendly, thereby increasing its perceived ease of use. Also, security concerns can negatively impact perceived ease of use and perceived usefulness. By implementing robust security measures and educating users about them, the university would alleviate these concerns, making the e-procurement system appear more secure and reliable.

Also, the Resource-Based View (RBV) emphasizes the importance of organizational resources and capabilities in achieving competitive advantage. The need for adequate training programmes and enhancing technical expertise aligns with RBV's emphasis on human capital. By investing in employee training and development, the university can build a knowledgeable workforce capable of effectively using e-procurement systems, thus turning human capital into a strategic resource.

The findings from the analysis of e-procurement adoption align well with several empirical studies on the challenges and drivers of e-procurement in various contexts. Mchopa (2020) study on the implementation of e-procurement in Tanzania highlights

several barriers to adoption similar to those identified in this study. Mchopa identified challenges such as lack of commitment from government and management, insufficient capital investment, inadequate manpower, and lack of technological integration. These are mirrored in the current study's findings, which also point to the need for enhanced training programmes, addressing security risks, managing employee resistance, upgrading technological infrastructure, and ensuring system integration. Both studies underscore the necessity of proper integration of these drivers to realize the benefits of e-procurement, such as cost reduction and improved procurement efficiency. Also, Asare and Prempeh (2017) study on the implementation of e-procurement in technical universities in Ghana found that insufficient ICT infrastructure was a significant hindrance. This resonates with the current findings that highlight the need for technological infrastructure upgrades to facilitate effective e-procurement adoption. Both studies suggest that investing in ICT infrastructure is crucial to maximizing the advantages of e-procurement.

Azanlerigu and Akay (2015) investigation into e-procurement in public institutions in Ghana identified challenges such as employee competency, legal framework inadequacies, and technological infrastructure issues. These findings are consistent with the current study, which points to the need for continuous training, technological upgrades, and addressing security concerns. The recommendation for formal recognition of electronic procurement transactions backed by legislation also aligns with the current study's emphasis on enhancing the policy and legal framework to support e-procurement. Mose, Njihia, and Magutu (2013) study on e-procurement adoption among large-scale manufacturers in Nairobi, Kenya, identified critical success factors and challenges, including resistance to change, old IT equipment, and lack of managerial support. These challenges are consistent with those found in the current

study, particularly the need for managing employee resistance and upgrading technological infrastructure. The emphasis on top management support and commitment to e-procurement success also aligns with the findings of the current study. Mahdillou and Akbary (2014) systematic literature review identified technological, organizational, and environmental challenges to public e-procurement implementation. Technological challenges included technical issues and disruptive innovation; organizational challenges included stakeholder issues, leadership, and resistance to change; and environmental challenges included regulatory frameworks and country context. The current study's findings at the University of Education, Winneba align with these challenges, particularly the need for addressing security risks, managing employee resistance, and ensuring seamless system integration. The emphasis on training and developing skilled personnel also parallels the organizational challenges identified by Mahdillou and Akbary. Salifu et al. (2023) study on the challenges of e-procurement adoption in the public sector of Ghana highlighted ICT-related factors as major barriers. This finding supports the current study's emphasis on upgrading technological infrastructure and prioritizing ICT needs to ensure smooth e-procurement adoption. The recommendation for regular training and seminars aligns with the identified need for adequate training programmes to improve user expertise and acceptance.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the key findings from the study, highlighting the significant insights and outcomes of the research. It synthesizes the main results discussed in the previous chapters and offers a concise conclusion based on the evidence presented. Additionally, this chapter outlines practical recommendations for stakeholders, including policymakers, administrators, and practitioners, to enhance e-procurement adoption and supply chain performance.

5.2 Summary

The purpose of study was to examine the effects of e-procurement adoption on supply chain performance, exploring the role of organizational culture. Specifically, the study sought to: assess the level of e-procurement adoption at the University of Education, Winneba, investigate the relationship between E-procurement adoption and supply chain performance at the University of Education, Winneba, explore the moderating role of organizational culture in the relationship between e-procurement adoption and supply chain performance and to identify the challenges of e-procurement adoption at the University of Education, Winneba. The study was done in the theoretical framework of Technology Acceptance Model (TAM) and Resource-Based View (RBV) theory.

The study adopted quantitative research approach and positivism as the research philosophy. A cross-sectional design, descriptive and inferential research designs were adopted. Data was collected on 200 workers in the University of Education, Winneba, using self-administered questionnaires. Descriptive statistics such as mean and standard deviations and relative importance index were used to analyze the data collected. Also,

inferential statistics such as regression analysis and correlational analysis were additionally used to analyse the data collected.

5.2.1 Summary of Key Findings

This section presents a summary of the key findings from the study on the adoption of e-procurement and its impact on supply chain performance.

Level of E-Procurement Adoption

In relation to the first objective of the study which sought to assess the level of e-procurement adoption, the study found that the adoption of e-procurement at the University of Education, Winneba, is moderate. While the university has made significant strides in implementing e-procurement systems, several areas still require improvement to achieve full integration and utilization.

Relationship Between E-Procurement Adoption and Supply Chain Performance

With regards to the second objective of the study which sought to investigate the relationship between E-procurement adoption and supply chain performance, the results indicate a positive and statistically significant relationship between e-procurement adoption and supply chain performance. This finding suggests that increased use of e-procurement systems enhances various aspects of the supply chain, such as efficiency, cost reduction, and transparency.

Moderating Role of Organizational Culture

In relation to objective three which sought to examine the moderating role of organizational culture in the relationship between e-procurement and supply chain performance, the regression analysis demonstrates that organizational culture significantly moderates the relationship between e-procurement adoption and supply chain performance. A supportive and conducive organizational culture strengthens the

positive impact of e-procurement adoption on supply chain performance, emphasizing the importance of fostering a positive cultural environment within the university.

Challenges of E-Procurement Adoption

Also, with regards to fourth objective of the study which sought to identify the challenges of E-procurement adoption, the analysis highlights several key challenges hindering the full adoption and effectiveness of e-procurement. These challenges include inadequate training programmes, security risks, insufficient technical expertise, employee resistance, outdated technological infrastructure, and difficulties in system integration. Addressing these challenges is crucial for improving e-procurement practices at the university.

5.3 Conclusion

In conclusion, the study demonstrates that e-procurement adoption significantly enhances supply chain performance, and this effect is further amplified by a supportive organizational culture. Institutions like the University of Education, Winneba, must focus on creating a conducive cultural environment and addressing implementation challenges to fully leverage the advantages of e-procurement systems. By doing so, they can achieve greater efficiency, transparency, and cost-effectiveness in their supply chain operations.

5.4 Recommendations

Based on the research findings and conclusions, the following are recommended:

a. To enhance the level of e-procurement adoption at the University of Education, Winneba, it is recommended that the university invests in comprehensive training programmes for its procurement staff. These programmes should focus on equipping employees with the necessary skills and knowledge to effectively utilize e-procurement systems. Additionally, the university should undertake a

detailed assessment to identify areas that require improvement and develop a strategic plan to achieve full integration and utilization of e-procurement across all departments.

b. Given the positive and statistically significant relationship between e-procurement adoption and supply chain performance, it is recommended that the university continues to expand and refine its e-procurement initiatives. This can be achieved by regularly updating the e-procurement system to incorporate the latest technological advancements and best practices. Moreover, the university should monitor and evaluate the performance of the e-procurement system to ensure it continually meets the desired efficiency, cost reduction, and transparency objectives.

c. To maximize the benefits of e-procurement adoption, the University of Education, Winneba, should focus on fostering a positive and supportive organizational culture. This can be achieved by promoting values such as collaboration, innovation, and continuous improvement within the university. Leadership should actively engage in creating an environment that supports change and encourages employees to embrace new technologies. Regular workshops and seminars on organizational culture and its impact on performance can also help in reinforcing these values.

d. The findings highlight the need for strategic alignment between technological initiatives like e-procurement and organizational culture. Management should ensure that cultural elements such as values, norms, and behaviors are aligned with the goals of e-procurement implementation. This alignment can be achieved through change management practices, leadership commitment, and fostering a culture that values technological advancements and continuous

improvement. Effective change management strategies are crucial to facilitate the successful adoption of e-procurement systems. Training programmes, open communication channels, and employee involvement in the implementation process can help create a conducive environment for change.

e. Addressing the challenges of e-procurement adoption requires a multifaceted approach. The university should prioritize the enhancement of its technological infrastructure to support seamless integration of e-procurement systems. Security measures should be strengthened to protect against cyber risks. Additionally, targeted efforts should be made to overcome employee resistance by involving them in the change process and demonstrating the benefits of e-procurement. It is also crucial to invest in ongoing technical training and support to build the necessary expertise for effective e-procurement implementation.

5.5 Suggestions for Further Study

Future studies should consider a broader scope by including multiple institutions or organizations across different sectors and regions. This would enhance the generalizability of the findings and provide a more comprehensive understanding of e-procurement adoption. Comparative studies between institutions with varying levels of e-procurement adoption could help identify best practices and common challenges. This could facilitate the development of tailored strategies for different organizational contexts. Incorporating qualitative research methods, such as interviews and focus groups, could provide richer, more insights into the human and cultural factors influencing e-procurement adoption. Understanding the experiences and perceptions of employees can shed light on the underlying reasons for resistance or acceptance of e-procurement systems. Future research should explore the impact of e-procurement adoption on a broader range of performance metrics, including financial performance,

customer satisfaction, and innovation capacity. This would provide a more holistic view of the benefits and drawbacks of e-procurement systems.

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APPENDIX

QUESTIONNAIRE

Dear Respondents,

I am researching on the topic "analysing the effects of e-procurement adoption on supply chain performance in Ghana: The role of organizational culture". Your candid and objective responses to the items in the questionnaire will go a long way in assisting the researcher to get the needed information. This questionnaire is strictly for an academic exercise, and you are humbly requested to provide accurate and frank information that will assist the researcher in obtaining the correct data for this exercise. Your responses will be treated in strict confidence. You are please requested to tick (√) a number that best describes your view. Thank you.

Section A: Socio-Demographic Characteristics

Designation/Job Title: _____

1. Gender: Male [ ] Female [ ]
2. Age Group 18-24 [ ] 25-34 [ ] 35-44 [ ] 45-54 [ ] 55 and above [ ]
3. Educational Qualification

   High School [ ] Diploma [ ] Bachelor's Degree [ ] Master's Degree [ ] P.H.D [ ]

4. Years of Experience in Current Position

   Less than 1 year [ ] 1-5 years [ ] 6-10 years [ ] 11-15 years [ ] More than 15 years [ ]

5. Department/Unit

   Procurement [ ] Finance [ ] Administration [ ] Operations [ ]

   Development and Planning [ ] Revenue [ ] Audit [ ] Academic [ ] Account [ ]

6. Current Employment Status:

   Full-Time [ ] Part-Time [ ] Contract [ ]

Section B: Level of E-Procurement Adoption

Please indicate your level of agreement with the following statements regarding e-procurement adoption at the University of Education, Winneba. Use the scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Level of E-Procurement Adoption	SD (1)	D (2)	N (3)	A (4)	SA (5)
The university has implemented an e-procurement system for purchasing goods and services.					
Employees are regularly trained on how to use the e-procurement system.					
The e-procurement system is user-friendly and easy to navigate.					
E-procurement processes are well-integrated into the daily operations of the university.					
The transition from traditional procurement to e-procurement has been smooth.					
The e-procurement system has reduced procurement cycle times.					
The e-procurement system has increased procurement efficiency.					
The e-procurement system has improved transparency in the procurement process.					

Section C: Supply Chain Performance

Please indicate your level of agreement with the following statements regarding supply chain performance at the University of Education, Winneba. Use the scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Statements	SD (1)	D (2)	N (3)	A (4)	SA (5)
The university has successfully reduced procurement costs through effective supply chain management.	23	32	22	57	68
Procurement activities are completed within the expected time frames.					
There are minimal delays in the delivery of goods and services procured by the university.					
The university effectively manages lead times for procurement.					
The supply chain at the university is reliable in meeting procurement needs.					
The university consistently receives the correct quantities and quality of goods and services ordered.					
The university is able to handle emergency procurement needs effectively.					
The procurement department is responsive to the needs and requests of university stakeholders.					

Section E: Organizational Culture

Please indicate your level of agreement with the following statements regarding the organizational culture at the University of Education, Winneba. Use the scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Statements	SD (1)	D (2)	N (3)	A (4)	SA (5)
The leadership style at the university encourages open communication.					
Employees feel comfortable sharing their ideas and feedback with management.					
The university has a fair and transparent reward system for employees.					
Employees are highly engaged and motivated in their work.					
The university fosters a sense of teamwork and collaboration among employees.					
The university promotes high ethical standards in all its operations.					
There is a strong alignment between the university's values and the behaviors of its employees.					
The university has a clear code of conduct that is followed by all employees.					

Section G: Challenges of E-Procurement Adoption

Please indicate your level of agreement with the following statements regarding the challenges of e-procurement adoption at the University of Education, Winneba. Use the scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Statements	SD (1)	D (2)	N (3)	A (4)	SA (5)
The university lacks adequate technological infrastructure to support e-procurement systems.					
Insufficient IT resources hinder the effective implementation of e-procurement initiatives.					
There is resistance from employees towards adopting e-procurement systems.					
Employees are hesitant to embrace new technologies and processes associated with e-procurement.					
There is a lack of adequate training programmes to equip employees with the necessary skills for e-procurement usage.					
The existing workforce lacks the technical expertise required for effective utilization of e-procurement systems.					
E-procurement systems face difficulties in integrating with existing university systems and processes.					
Security risks associated with e-procurement systems pose a significant challenge for adoption.					