

Kwame Nkrumah University of Science and Technology, Kumasi

School Of Business

**Assessing the Effects of the Adoption of the E-Procurement System in Ghana. A
Case Study of Ministry of Communications and Digitalisation.**

By

Peter Asiedu

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DECLARATION

I hereby declare that this submission is my own work towards the Master of science procurement and supply chain management and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university, except where due acknowledgement has been made in the text 'acknowledgement.

Peter Asiedu

(Student)

Signature

Date

Certified by:

Dr. Kwabena Obiri-Yeboah

(Supervisor)

Signature

Date

Certified by:

Prof. David Asamoah

(Head of Department)

Signature

Date

DEDICATION

This work is dedicated to the Almighty God and my family for their numerous support, guidance and blessing throughout my academic journey.

KNUST



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ABSTRACT

The procurement function is important to any organization in the modern business climate, and as a result, its tactics are now more important than ever to an organization's success. The study examined the effects of the adoption of e-procurement on the procurement function in Ghana. A case study approach was used in the study with the quantitative approach. The population for this study is the procurement department in the Ministry of Communication and Digitalisation and its seven (7) agencies. The procurement staff in the Ministry of Communication and Digitalisation and all seven (7) agencies were sampled for the study using the census as a sampling approach. The study findings implied that the four independent variables (facilitating conditions, performance expectancy, social influence, and effort expectancy) jointly accounted for only 53% of the adoption of e-procurement. This, therefore, means that other factors not studied in this research contribute 47% to the adoption of e-procurement. The results prove that the variables that determine the adoption of e-procurement are the conducive circumstances, performance expectations, social influence, and effort expectations. According to the individual p-values, performance expectations and social influence have little effect on the adoption of e-procurement, however effort expectations and facilitating conditions have a substantial impact. The study suggested that, because e-procurement systems rely so significantly on Internet services, stable and ongoing improvement in the internet infrastructure is crucial for the successful integration of e-procurement technology. Thus, the government must ensure that there are no interruptions in the flow of the internet.

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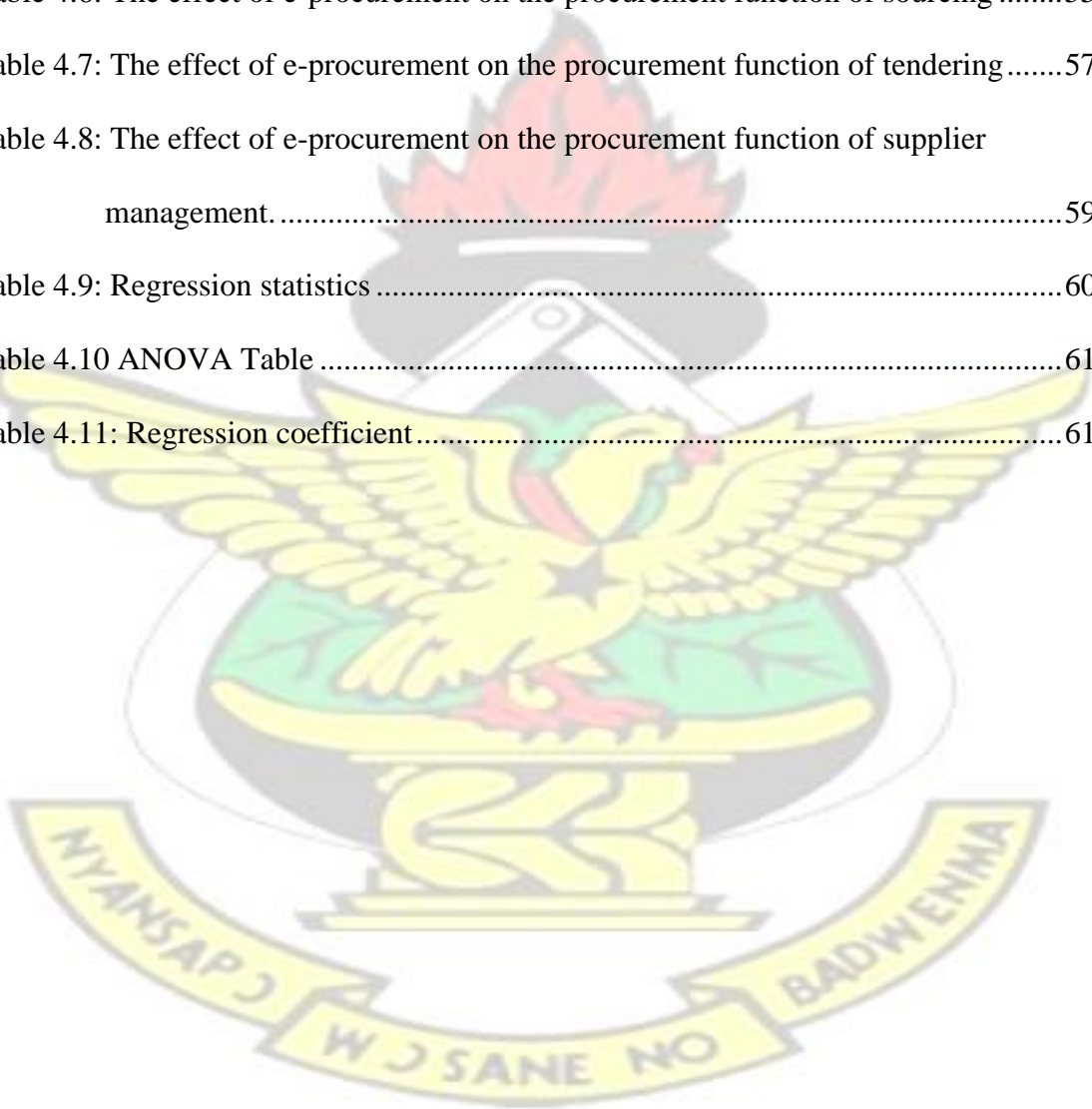
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LIST OF ABBREVIATIONS

CPB	Central Procurement Bodies
IT	Information Technology
PPA	Public Procurement Authority
TAM	Technology Acceptance Model
UTAUT	Unified Theory of Acceptance and Use of Technology



CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Procurement activity is very vital to any organization in the modern business climate, and as a result, its tactics are now more important than ever to an organization's success. The function of procurement guarantees that the items, the goods, and services purchased are of the expected quality and quantity at a good price as well (Farzin and Nezhad, 2010). In the competitive business world of today, the procurement function is essential to every organization. As a result, a company's procurement methods are more important than ever for its success. Public procurement is the process that government organizations use to purchase goods, services, labor, and other services efficiently, economically, and successfully to maximize their financial resources. This procedure includes hiring, leasing, and other forms of contracting with the supplier of public services (Ngatia and Kenyatta 2016).

A contract is typically used in public procurement, which (Act 663) defines it as "the acquisition of goods, works, and services at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place, for the direct benefit or use of governments, corporations, or individuals" (PPA Module, 2007). Hence, public sector organizations use the public procurement process to get commodities, projects, and services paid for using taxpayer money. In the procurement process considerations are made for sound planning for each stage of the procurement process such as budgeting for the procurement, the bidding, the awarding of the contract, performance measurement, monitoring and evaluation of the contract (Azanlerigu and Akay, 2015). The procurement process ensures that commodities, services, and works

are acquired at the proper time, location, quality, and quantity. Everywhere in the globe, governments devote a sizeable portion of their operational budget to the purchase of materials, labour, or services. Therefore, ineffective procurement procedures may lead to substantial investment losses, which may affect the productivity and financial performance of the organization. In the past, slower methodical methods and drawn-out manual procedures were used to complete the transactions involved in the procurement process (Hawking, Stein, Wyld and Foster, 2004). The supply chain and procurement tend to involve a lot of paperwork in their operations, which presents issues for manual processes resulting in ineffectiveness in the procurement activities (Azanlerigu and Akay, 2015).

Electronic procurement is becoming more and more significant in business-to-business trade. Electronic procurement enhances inter-organizational collaboration, which opens options for competitive sourcing for lowering the organization's purchasing and transaction costs (Subramaniam and Shaw 2002). E-procurement covers all stages of the purchasing process, including demand identification, tendering, payment, and possibly contract administration (Smith and Flanegin 2014). According to Rotich and Okello (2015), electronic procurement is the practice of conducting exchanges between suppliers and awarding agencies using electronic methods, typically online. Public e-procurement is the process of working involving bidders using information and communication technologies, such as the internet, to buy public goods, works, and services (Davila, Gupta, and Palmer, 2003).

The process of electronically procuring the commodities and services required for an organization's functioning is known as electronic procurement (e-procurement) (Beauvallet, Boughzala and Assar, 2011). E-procurement involves using electronic

tools instead of paper ones to process, publish, exchange, and save information related to procurement. It entails, among other things, publishing requests for proposals online, disseminating documents and specifications to increase the efficiency of handling the processes for awarding procurement contracts (such as binding tender forms for companies and consultation files for companies), and electronically receiving bids. According to Beauvallet et al. (2011), electronic procurement has both short-term and long-term advantages. A speedier buying cycle, cost savings, cross-selling opportunities, and fewer inventories are a few of the tangible benefits (Beauvallet et al., 2011). Improved communication of the brand and business image is one of the intangible benefits (Beauvallet et al., 2011).

Ghana's procurement methods have undergone several modifications and reforms, all of which aim to, among other things, reduce or eliminate public procurement corruption, increase the effectiveness of the procurement processes, and guarantee value for money. It was considered a significant change when the Public Procurement Act (Act 663) was passed in 2003. Even though the introduction of Act 663 significantly simplified Ghana's procurement processes and brought order back to the sector, its manual approach has forced some procurement specialists to promote the development of electronic procurement in Ghana (Addison, 2017). The application of electronic transactions to processes and activities related to public procurement was not provided for under the Procurement Act (Act 663). Act 663, the Procurement Act of 2016, was modified as a result to include standards for the use of electronic tools in public procurement procedures. "Ghanaeps" provides a platform, among other things, for government agencies to post their tenders online, for suppliers to apply for contracts online, and eventually for contract award procedures to be completed online.

When the role of electronic procurement platforms in Ghana's public sector procurement system is examined, it becomes clear that these platforms are a cutting-edge technology that can address many of the problems with the country's traditional procurement system. E-Procurement systems are designed to be better than traditional procurement operations and to create a smooth process for the different parties and the system of public procurement. The name "Ghanaeps" presently refers to Ghana's electronic procurement system. The government sector implemented an e-procurement system in 2019 with the goal of lowering costs, increasing transparency, and enhancing accountability. In addition to these predicted advantages, it's crucial to evaluate how the adoption of e-procurement would affect the procurement processes of Ghana's public sector companies.

1.2 Statement of the Problem

ICT has been used by governments in both developed and developing nations to raise civic engagement, expand public access to information, and improve the quality of public services. As a result, the majority of nations now encourage public participation in government bidding processes by improving public access to opportunities within government agencies, such as in the procurement process. Governments all around the world are implementing e-procurement as a means of facilitating access to information because of advancements achieved in ICT. E-procurement is the use of internet technology for the purchase of goods, services, and labour. E-procurement solutions also enable the effective integration of supply chains and offer improved transaction record management and tracking for simpler data collecting (Ogot, 2009). Ghana was the first nation in the West African region to set up an electronic system for public procurement. There are scanty studies done to evaluate the consequences of Ghana's

adoption of the e-procurement system since it was put into place. Due to the circumstance, the study is required to examine the outcomes of Ghana's adoption of the system of electronic procurement. The previous research (Ofori and Fuseini 2020; Osei-Tutu, Kissi, Osei-Tutu, Desmond, 2019; Asare and Prempeh, 2018) mostly concentrates on crucial success criteria for adopting e-procurement, opportunities, and problems related to the usage of electronic procurement (Azanlerigu and Akay, 2015; Anane and Kwarteng, 2019).The implications of e-procurement adoption on procurement procedures were not considered in the studies on e-procurement in Ghana. The goal of the current study is to evaluate how Ghanaian public institutions' procurement procedures has change because of the adoption of e-procurement.

1.3 Research Objectives

This study's primary goal is to evaluate the impact of e-procurement adoption on Ghana's procurement function. The following are the precise goals:

- i. To ascertain the impact of e-procurement on the sourcing function.
- ii. To evaluate the impact of e-procurement on the tendering function
- iii. To research the impact of e-procurement on supplier management and relationships

1.4 Objective Questions

1. What is the effect of e-procurement on the procurement function of sourcing?
2. What is the effect of e-procurement on the procurement function of tendering?
3. What impact does e-procurement have on managing supplier relationships?

1.5 Significance of the study

The government of Ghana and all other public sector organizations will greatly benefit from this study. The study will provide the Public Procurement Authority with a wealth of data to efficiently assess Ghana's adoption of the e-procurement system. With this information from the study, the Authority will be able to further implement policies to further improve the e-procurement system or platform in Ghana. The study will also benefit other public sector organizations to enable them fully to adopt the e-procurement platform to enhance transparency in procurement activities in Ghana. The study also offers suggestions for how government institutions might make the most of e-procurement to enhance supply chain management and achieve value for money. Additionally, this study will significantly advance the body of knowledge regarding the effects of e-procurement adoption on the procurement function. This work will be a great resource for future comparable studies for students, academics, and other scholars.

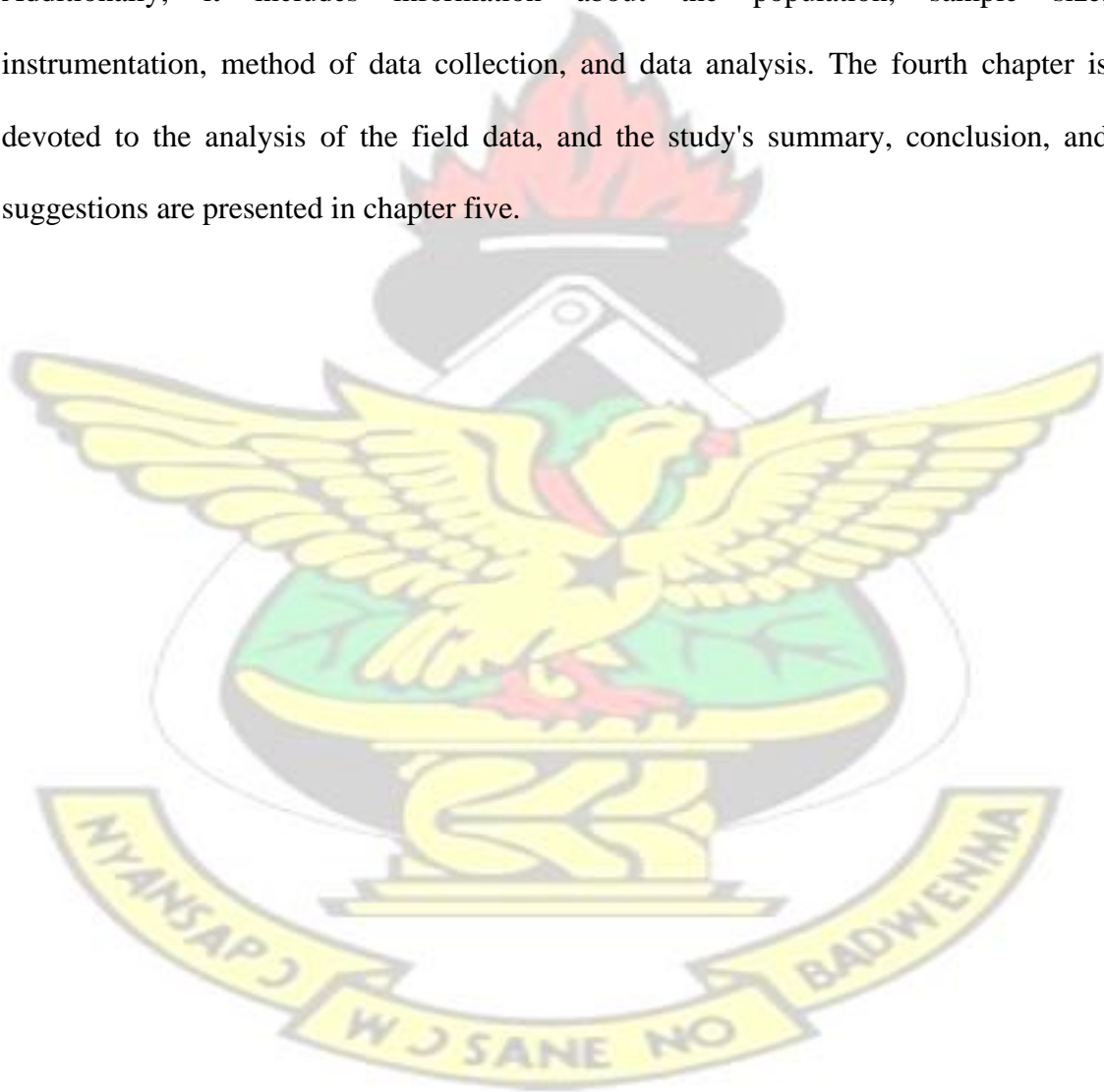
1.6 Scope of the study

The procurement system is the traditional or manual system and the electronic system. This study is limited to the electronic procurement system. The procurement system also entails a lot of activities. This study is confined to the sourcing function, the tendering function and the supplier management and relationships.

1.7 Brief Methodology

1.8 Organization of the study

There are five chapters in the study. The study's introduction, goals, issue statement, scope, research questions, limitations, and importance are all covered in chapter one. A survey of pertinent and related literature on the topic is also presented in chapter two. Additionally, the theoretical foundation is presented. The methodological strategy that the researcher employed to gather and analyze data is covered in Chapter three. Additionally, it includes information about the population, sample size, instrumentation, method of data collection, and data analysis. The fourth chapter is devoted to the analysis of the field data, and the study's summary, conclusion, and suggestions are presented in chapter five.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

A review of related studies on e-procurement and procurement is presented in this chapter. For every scholarly effort, the act of examining pertinent material is crucial. To put it another way, the literature review places the current study in the context of its historical development. By relating the current study to earlier research that has been done on the topic, it describes the study's context. The chapter is made up of conceptual, theoretical, and empirical reviews.

2.1 Conceptual Review

2.1.1 The concept of procurement

Weele and Van Raaij (2014) define procurement as the procedures necessary to get projects, products, and services from sources other than the performing organization. It is advantageous that the products or services are suitable and that they were acquired at the most affordable price to satisfy the customer's expectations in terms of quality, quantity, timing, and location. According to Carnegie Mellon University's Software Engineering Institute (2008), procurement refers to a group of tasks carried out as a part of acquisition activity. It involves the process of purchasing commodities, works, and services, including both internal and external purchases.

2.1.2 Public procurement

Public procurement, according to Baldi, Bottasso, Conti, and Piccardo (2016), is a strategy employed by public authorities to meet the demands and goals of their institutions. Public procurement is defined by Ghana's Public Procurement Act, 2003

(Act 663) as the acquisition of goods, works, and services for the direct benefit or use of governments, corporations, or individuals at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place, usually through a contract. To put it another way, public sector entities use the public procurement process to get commodities, projects, and services that are funded by taxpayers' money. In the procurement process considerations are made for sound planning for each stage of the procurement process such as budgeting for the procurement, the bidding, the awarding of the contract, performance measurement, monitoring and evaluation of the contract (Azanlerigu and Akay, 2015).

Public procurement is defined as the purchase of goods and services through a contract for the immediate benefit or use of governments, businesses, or persons with the lowest total cost of ownership, in the ideal quantity and quality, at the ideal time, in the ideal location. Key issues that need to be rigorously examined are the purchases made by public institutions and the government of products, services, and works. A country's economy is said to be greatly impacted by procurement since it serves as the foundation for the implementation of public policy (Ghana Integrity Initiative, 2007). According to Rotchanakitumnuai (2013), the primary mechanism for the effective management of public resources is public procurement.

A United Nations study defines public procurement as a procedure of government procurement that includes project specification planning, proposal submission, evaluation and acceptance of bids, contract payment, and awarding. On the other hand, public entities do not view procurement as a one-time affair. There is proof from both professionals and laypeople alike that the procurement process has three (3) stages. This covers solicitation, contract awarding, procurement efficiency, budgeting, and

preparation for procurement. In addition, Rotich and Okello (2015) suggested that there may be five steps to the procurement process. This comprises the following: contract management and awarding, requirements assessment and procurement planning, the tendering process, documentation and product production, auditing, and accounting. According to (Arrowsmith, 2011), it is the engagement of consultants and contractors to carry out works and services along with the purchase of products and services.

Purchases made by or on behalf of central government departments, local government agencies, state corporations, and/or ministries are considered public sector purchases. In the public sector, procurement seeks to accomplish several goals. These include responsibility, openness, accountability for actions, fairness (i.e., not discriminating against potential suppliers), and economics., and, in cases involving many nations, adherence to international responsibilities (Odhiambo and Kamau, 2003). In addition to its commercial goals, public procurement is a tool for achieving broader national socio-economic goals, such as fostering local small, medium, and micro enterprises (SMMEs) and advancing regional integration through increased cross-border trade. These goals include supporting citizen employment and income creation. To encourage innovation among businesses, public procurement is essential (AzanleriguandAkay, 2015). They acknowledged that both private and public businesses concentrate their efforts on acquiring both tangible and intangible assets. Public procurement also aims to advance trade accountability and justice (Spagnolo, 2012). Regardless of the firm's size, Mansi (2015) and Mansi and Pandey (2016) recommended that public procurement activities boost CSR initiatives within an enterprise. Despite these well-known advantages, several researchers, including Baldi et al. (2016), concluded that public procurement significantly increases over-corruption. Notably, rather than

attaining environmental goals, public procurement has been successful in achieving socially responsible aims (Amann, Roehrich, EBig, and Harland, 2014). However, the same study recommends that because public procurement has a strategic impact on environmental and social goals, practitioners should enforce it as a means of achieving both. In underdeveloped economies, public procurement has historically had the highest level of corruption, and Ghana is no exception, according to Auriol, Straub, and Flochel (2016). They concluded that over time, public procurement activities have increased.

2.1.3 Public Sector Procurement Requirements

Public procurement plays a critical role in government operations (Brandon-Jones and Kauppi 2018). Given the significant financial commitments required for government purchases, as well as the fact that the public contributes to these funds, Hui et al. (2011) stressed the importance for accountability and transparency. So, for economic management that is effective, handling government funds leaks, increasing the effectiveness of public spending in reducing poverty, and increasing the public's faith in government intentions and programs, an efficient procurement system built on openness, competition, cost-effectiveness, and accountability is crucial. This is carried out to quickly meet the demand for buildings, services, products, and works. Furthermore, it must adhere to the essential tenets of responsibility, openness, and good governance (Khuan and Swee, 2018).

2.1.3.1 Transparency

The Public Procurement Act's major goal is to ensure that Ghana's public procurement procedure is standardized to promote equity and openness. Public funds will only be

used for the best possible works and services, according to the procurement. (Khuan and Swee, 2018) define the idea of transparency as a mechanism for the creation of a friendly environment where information on current acts, situations, and decisions is made visible, understandable, and usable by all interested parties. The government will be able to deploy resources more effectively by being more competitive, saving money, and maintaining good procurement efficiency, which benefits taxpayers (Musanzikwa 2013). Contract awards must be publicized in the media, good tenderers and final award prices must be listed, and transparency standards must be ensured to be more accountable and transparent. Public procurement bulletin must also be released to eliminate corruption in public procurement processes (Rotchanakitumnuai, 2013).

2.1.3.2 Accountability

By definition, accountability refers to the process by which a body or organization is made completely responsible for all procurement-related components over which they have power. Accountability in procurement processes is primarily justified by the need to progress and improve the public's view of fairness and transparency. This lessens the prevalence of corruption and complies even more with the legal system and Act 663 on Procurement (PPB 3rd Module Training, 2007). Ordinary people and procurement professionals working for public works contractors have the power to observe and evaluate all procurement activities throughout the whole procurement process. People will be able access the most recent versions of the policies, data from the tender program, evaluations of the state of the tenders, and results of notification. A tool for file standardization, an e-procurement system supports suppliers and enables the oversight of procurement processes. Public transparency at all phases of the procurement process enhances accountability for relatively expensive acquisitions.

2.1.3.3 Efficiency

If a public procurement program functions with little red tape and promptly takes into account the clients of the services or items that have been purchased, it is said to be effective. That allows efficiency to be accurately described in terms of value for money (which means guaranteeing the lowest costs for the best price available). The concept of productivity in this context can only be attained through free competition since procurement reform frequently serves as the catalyst for further system liberalization (Khuan and Swee) (2018). The procurement process must be taken over in Ghana in a climate of professionalism and openness with a clear understanding of the rules intended to nurture and enhance competition if it is to be competitive and successful. According to Kusi, Antwi, et al. (2016), procurement is generally a transparent, competent method for managing effective value-for-money services, tasks, and products. Automated processes dramatically reduced transactional administrative or processing expenses because of electronic procurement, functioning as a primary source of savings in government contracts. as stated by KhuanandSwee (2018), government contractors' efficiency has grown significantly because of the e-procurement system's lower transaction costs and shorter transaction times. Contrarily, cycle demand payment automation has reduced manual processing, which is characterized by task-prone monitoring, freeing up procurement specialists to concentrate on a more fruitful endeavor. (ADB, 2013).

2.1.3.4 Value for money (VFM)

This concept is crucial to gauge how effective the purchasing process is (entries and results). It is the best technique to assess the price and overall quality of life of a

product or service that satisfies the user's requirements or expectations. Fraud, waste, and the misuse of public resources should be aggressively avoided by everyone who is in charge of acquiring goods and services and making payments relating to public procurement processes or public funds. This guideline must be adhered to by those responsible for purchasing goods, works, and services to prevent paying exorbitant rates for inferior commodities, developing unhealthy relationships with bidders, and other irregularities (KhuanandSwee (2018).

2.1.3.5 Effectiveness

Data is automatically processed, and e-procurement is being used to purchase reports. Enhanced opportunities to track suppliers' outcomes, including their acceptance and benefits management, will be made possible by better data management quality (ADB, 2013). Now that they have this publishing ability, the Central Procurement Bodies (CPBs) can also bargain reasonable prices. Through e-procurement, CPBs can easily access information, enabling effective negotiations with parties that have given their consent.

2.1.4 The Concept Of E-Procurement

Roma and McCue (2012) define e-procurement as the use of information technology to establish a procurement process that can be flexible in response to environmental changes. Almost all business sectors and organizational types have embraced e-procurement. Through the use of the internet, e-procurement is a technology solution that enhances corporate purchasing (Jain and Bandyopadhyay, 2018). According to Eadie et al. (2017), a company that uses e-procurement benefits from reduced tendering prices, quicker material sourcing, lower administrative costs, fewer procurement staff

members, and better communication. They also point out that e-procurement represents a significant advancement in e-business employment in supply chain management. The adoption of e-procurement is meant to include e-tendering, e-sourcing, e-ordering, and e-informing. E-procurement is the practice of promoting contract award-related procurement procedures online and through web-based platforms. This concept is used as an illustration of an e-business because it enables companies or organizations to make purchases using technology. "E-procurement" is described by Khalil and Waly (2015) as "end-to-end digitalization of public procurement processes, from the sourcing phase (pre-award) to the purchase phase (post-award)" in the public sector. The employment of technology tools is thus required while making purchases, carrying out public duties, and/or receiving services.

E-procurement is regarded as an intra-organizational information system that streamlines the procurement process with the goal of enhancing the quality, transparency, and efficacy of public procurement (Daud Mohammad, Azmi, Mohamed, 2013). According to the World Bank, using information technology to communicate with suppliers to make purchases of products and services is known as "e-procurement" (2003). E-procurement, as defined by Baily et al. (2008), is the use of electronic methods at every stage throughout the purchase process, from requirement discovery to payment and perhaps contract management. Also, it's used to describe how government organizations employ electronic communications and transaction processing while making purchases of products and services or issuing requests for quotes for public projects (Peris et al., 2013).

E-procurement is the practice of conducting business with suppliers and awarding agencies using electronic techniques, often the internet (Rotich and Okello, 2015).

Public e-procurement is the practice of engaging bidders in negotiations for the purchase of goods, services, and labor needed by the public sector while using information and communication technologies, such as the internet. Traditional public sector procurement methods were hindered by several issues, including lengthy processing times for bids, a ton of paperwork, physical intimidation of bidders, constant human contact, a lack of transparency, discretionary handling of bidders throughout the entire tendering process, and corruption (Bikshapathi and Raghuveer, 2007). According to Bokpe, the implementation of an e-procurement operation is anticipated to assist in addressing most of the unnecessary hurdles that suppliers and contractors encounter when attempting to win bids for contracts (2013). The system is also made to deal with any unethical or dishonest conduct that comes from dealing with people when doing procurement operations (Bokpe, 2013). On December 31, 2003, the president approved the Public Procurement Act of Ghana, 2003 (Act 663), which became operative on January 1st, 2004. Prior to the implementation of this Act, the District Tender Board Regulations of 1995 (L.I.1606), the Ghana National Procurement Agency Decree of 1976 (SMCD 55), and the Ghana Supply Commission Law of 1990 (PNDCL 245) were all repealed and consolidated. The Procurement Act did not include provisions for the use of electronic transactions in public procurement activities and procedures (Act 663). Act 663 (the procurement act's 2016 update, Act 914) was modified as a result to permit the use of electronic instruments during public procurement processes. "Ghanaeps" provides a platform for suppliers to submit bids online, public organizations to exhibit their tenders online, and finally, the contract award process might be completed online (Ofori and Fuseini, 2020)

E-procurement systems give buyers the ability to monitor their expenditures, record supplier performance data, and review and analyze purchasing trends (Muffatto and Payaro 2004; Hardy and Williams 2008). Employees can then handle the process more effectively and learn how to compromise between several complexes and occasionally at-odds procurement policies. To achieve a quicker, more transparent, efficient, and cost-effective procurement process, governmental purchasers can use the e-procurement system to cut administrative expenses, decrease the order fulfilment cycle time, and increase order fulfilment rates. E-procurement is a great instrument to cope with procurement difficulty because of its advantages (Ofori and Fuseini, 2020).

2.1.4.1 E-sourcing

One of the elements of procurement operations is sourcing, which serves as the link between the buying firm and its suppliers. Priority-wise, sourcing is a crucial force behind organizations' efforts to boost their bottom lines (Scott, Lundgren and Thompson, 2011). The primary elements of sourcing are frequently a range of goods required by a business for its operations, production, office tasks, and supporting activities. Raw materials, subassemblies, partially finished goods, replacement components, tools, office supplies, and a variety of services are a few examples. According to Mose (2012), firms in the public and private sectors have both employed information technology (IT) systems recently to purchase and other operations should be streamlined and automated.

E-sourcing is not brand-new. E-Sourcing has become an essential tool in the procurement process for organizations thanks to the development of the Internet and ICT. Businesses have the potential to save expenses and increase efficiency thanks to e-

sourcing (Singh and Benyoucef, 2011). In terms of online negotiations in e-Auction events and other related tools, e-Sourcing refers to the use of web-based programs and decision support systems that reduce cooperative and competitive interactions between buyers and suppliers (Engelbrecht-Wiggans and Katok, 2006).

The use of the internet in decision-making processes relates to the sources of goods and services (Farrington and Lysons, 2012). According to Barbara and Maxfield (2013), procurement must embrace cutting-edge technology, including e-sourcing, in order to keep up with the market and meet strategic goals. When vendors and buyers get together to trade, to submit specifications and request bids, it needs a variety of formats from sell-side and buy-side electronic catalogues. E-sourcing is a wonderful, quickly expanding component. In their 2016 study, Kimutai and Ismael looked into how the Kenya Electricity Generating Company's supply chain performed in terms of strategic sourcing techniques. According to the study's findings, managing supply chain risk is another element of strategic e-sourcing that has an impact on how well businesses operate their supply networks.

The performance of the procurement function was examined by Maureen and Josphat in 2016. The study discovered that because e-sourcing adoption has not been fully adopted, its full benefits have not been experienced. In their 2015 study, Isaac and Robert looked into how strategic sourcing affected Kenya's success in public procurement. In the study, supply management is defined as a strategic sourcing method that offers efficient cost reductions in addition to other advantages.

2.1.4.2 E-tendering

Another definition of e-tendering offered by Ribarsky (2013) is the electronic integration and control of all supply chain operations, such as buy requests, authorisation, ordering, delivery, and payment between a purchase and an e-supplier. An e-tendering system that allows for order processing at a lower cost, and administrative savings are all possible benefits. An electronic system called e-tendering is used to automate all supply chain processes. It enables scanning, archiving, and retrieval of bills and other documents as well as management approvals, routing of authorization requests, connections with financial systems, and document matching to confirm transactions (Markus, 2013). Betts et al. (2006) e-tendering is defined as the electronic publishing, communicating, accessing, receiving, and submitting of all tender-related information and documents via the internet, resulting in a more efficient and successful business process for all parties involved. Therefore, e-tendering manages a tender digitally. This includes sending the tender documents via email, contacting, and informing bidders, downloading files, creating tenders, and replying to them online. Using a specific e-Sourcing platform, a corporation solicits information and price quotes from possible suppliers in the process known as e-tendering (De Boer et al. 2002). e-tendering tools, according to Smart (2010), are a collection of programs that help buyers analyze markets and suppliers. These programs include evaluation methods, search tools, tender analysis tools, and supplier rating and scoring systems.

The purchasing organization can also evaluate the pricing, lead time, supplier reputation, quality, contract conditions, and incumbent switching costs through the e-tendering process (Wein and Beil 2001). The e-tendering tool's objective is to make the decision-making of buyers easier (Smart 2010). The primary benefit that government organizations seek when implementing e-tendering, according to Vaidya, Sajeez, and

Callender (2016), is a decrease in operating costs and service delivery that is a little more community-efficient. Additionally, according to Vaidya, Sajeez, and Callender (2016), the implementation of the system of electronic tendering in the public sector will benefit taxpayers by giving them the best value for their money, enhancing general e-commerce initiatives, and benefiting the environment because the process is paperless. The effect of tendering on the effectiveness of public institutions was researched by Kisurkat (2017). According to the study, organizations that use tendering processes boost departmental performance.

Barng'etuny and Kimutai (2015) investigated how e-tendering affected the effectiveness of the supply chain (2015). According to the study, the use of e-tendering has improved supplier relationships and management procedures while also increasing productivity in supply chain activities. E-tendering's impact on public institutions is evident in the increase in supply chain productivity. Eunice (2015) conducted research on how the e-tendering procedure affects the performance of public institutions. The results demonstrated that there was good transparency and that openness reduced corruption in the procurement process, resulting in improved accountability in public institutions and high performance.

2.1.5 Supplier relationship and management

Positive supplier relationships are widely acknowledged as being essential to maintaining a competitive advantage (Stevenson 2009). Many businesses regard their suppliers as partners; hence, they desire a stable partnership by maintaining delivery schedules with a small number of vendors capable of delivering high-quality items, and show flexibility in the face of changes in requirements and delivery schedules. The

discipline of supplier relationship management (SRM) includes strategic planning and managing all such partnerships to maximize the value of all interactions with external businesses that offer goods and/or services to a company. SRM necessitates establishing deeper, more cooperative connections with important suppliers in order to discover and realize more value while reducing the risk of failure.

Supplier relationship management's main objective is to boost the effectiveness and efficiency of a company's supplier sourcing processes. Close ties make supply chain partners more eager to share benefits and risks and to keep the partnership going for a longer time (Chen and Paulraj, 2003). Relationships in the supply chain must be long-term to accomplish strategic coordination. The long-term commitment of channel members is influenced by their expectations of sharing risks and profits throughout the chain (Lambert and Cooper, 2000). Successful supplier relationships require two-way inter-organizational communication. In order to work together to address material challenges and design issues, buyers and suppliers must commit to sharing more information and be willing to divulge sensitive design knowledge (Chen and Paulraj, 2003).

2.1.6 Factors Affecting E-procurement.

Many governments have the desire to switch to e-procurement platforms for their procurement processes, but there aren't enough skilled experts to make this happen since they believe e-procurement is the key to eradicating corruption in the public sector (Ilhan and Rahim 2017). The use of e-procurement and the creation of service-level agreements are hampered by its lack of comfort and confidence, according to (Altayyar and Beaumont-Kerridge 2016). The European Commission (2002)

investigated potential barriers to e-procurement and found a number of them, including a lack of leadership development, economic restraint, digital divides, limitations on purchasing options, a lack of coordination, insufficient workplace flexibility, mistrust, and poor technical design. These kinds of failures have a significant impact on e-procurement purchasing contracting. According to the World Bank (2004), a lack of knowledge, comprehension, or skill about developing technologies commonly hinders the implementation of e-procurement. There is a link between the adoption of e-procurement and foreign regulatory regimes, according to numerous academics.

To get a foothold in the adoption of electronic procurement, it has been observed that both government agencies and businesses will need to overcome current legislative, regulatory, and organizational barriers (Jain, Abidi, and Bandyopadhyay, 2018). Many nations have not implemented e-procurement legislation into their national legislative framework (European Union, 2012). The difficulties of the digital divide compromise e-procurement notwithstanding its flaws (Davila et al. 2003; Moon et al. 2019). Because a sizeable portion of suppliers lacks basic technological skills, it takes them longer to learn how to use e-procurement, which reduces the number of suppliers with equal access to internet knowledge (Reddick, 2004). Suppliers' knowledge gaps about e-procurement technology may be a significant disadvantage, which translates into a reduced inventory of catalogue alternatives to satisfy the needs of their clients (Davila et al. 2003; Moon et al. 2019). Jain et al. (2018) also stated in their research that there are significant advantages to implementing e-procurement.

However, to ensure productivity and value for money, employees in procurement offices must be able to use the essential software systems. They also need managerial abilities. According to Jain et al. (2018) and Mahdillou and Akbary (2014),

procurement bodies lack skilled human resources to oversee procurement processes. Due to the lack of available professionals with the necessary abilities to effectively enforce quality standards, monitor e-procurement processes, establish criteria, specify procurement requirements, and carry out supervision duties, budgetary restrictions eventually arise. Additionally, NasrunMohdNawi et al. (2017) identified several additional factors that contributed to challenges with the implementation of e-procurement in their study. Technology, infrastructure, rules, and the environment are a few of these elements. This study concurs with Calipinar and Soysal's (2012) findings, which also identified these same elements as the difficult ones preventing successful e-procurement implementation: technology, facilities, regulation, and the environment. The authors also claimed that it is difficult for organizations to manage external elements such as the market, government, and technical developments, which makes e-procurement systems challenging. However, by correctly examining them, these difficulties can be reduced or even removed.

2.2 Theoretical Review

2.2.1 Unified Theory of Acceptance and Use of Technology (UTAUT)

The Venkatesh, Morris, Davis, and Davis (2003) Unified Theory of Acceptance and usage of Technology (UTAUT) is a more comprehensive set of factors that explains the acceptance and usage of new technologies and goods. The authors created a collection of four factors that describe acceptance, adoption, and usage behavior by combining numerous hypotheses. Performance expectancy, effort expectancy, social influence, and behavior control are the four components. The first component is performance expectation, which includes perceived utility (TAM) and relative advantage (Diffusion theory). Perceived ease of use (TAM) and complexity (Diffusion Theory) are also

factors in effort expectancy. While social influence is composed of subjective norms in TAM and image in diffusion theory (Moore and Benbasat, 1991), enabling conditions are composed of constructs such as behavioral control (Davis, 1989) in TAM and compatibility (Moore and Benbasat, 1991) in Diffusion theory. These four characteristics have a significant influence on the adoption of new technologies such as electronic banking. Despite being a relatively new model and not being utilized as frequently as TAM, UTAUT has steadily caught the attention of researchers. It was most recently employed to investigate users' acceptance of Internet banking (Alalwan et al., 2014; Martins et al., 2014).

The UTAUT was first introduced by Venkatesh in 2003. UTAUT is based on the premise that behavioural intentions that ultimately lead to outcomes are influenced by performance expectancy, effort expectancy, facilitating conditions, and social influence (Venkatesh et al., 2003). The adoption is influenced by the likelihood of effort, the likelihood of performance, social influence, and enabling circumstances. The sourcing, tendering, and supplier relationship aspects of procurement are also impacted by the implementation of e-procurement. Perceived usefulness, extrinsic motivation, job fit, relative advantage, and result expectations are five comparable categories that together makeup performance expectancy (PE), which is a component of the UTAUT paradigm. In Venkatesh et al (2003) 's model validation, performance expectancy was found to be significant at all times for both voluntary and mandatory contexts and is the strongest predictor of intention within each of the individual models assessed. The concepts of perceived complexity and ease of use are captured by effort expectancy (EE) in the UTAUT model. The second factor in Davis's (1989) classic study is the ease of use, which is generally acknowledged to have a considerable impact on both acceptance of

technology and opinions of its effectiveness. Social influence considers a person's impression of others' opinions, the subjective culture of their reference group, Specific interpersonal agreements with others, as well as the amount to which utilizing innovation is seen to boost one's reputation or status in their social system (Venkatesh et al., 2003).

Venkatesh et al. (2003) discovered that social impact is insignificant in voluntary situations but becomes significant when it is mandated in their validation tests. The constructs of perceived behavioral control, facilitating conditions, and compatibility from earlier models are included in the facilitating conditions (FC), which represent organizational support. According to the UTAUT validation results, FC had a considerable impact on usage intentions during the first usage period in both voluntary and required situations, but this influence vanished after that.

In order to investigate the effects of e-procurement on the procurement function of sourcing, tendering, and supplier relationship management, eight (7) hypotheses are established in this study.

2.2.1.1 UTAUT Perspective and E-procurement Adoption

Effort expectancy has a positive impact on the adoption of e-procurement.

According to Venkatesh et al. (2012), p. 159, the 'effort expectancy' (E) construct in UTAUT is referred to as 'the degree of ease associated with consumers' use of technology. According to Venkatesh et al. (2012), adoption was significantly impacted by effort expectancy. Four items evaluating the degree of convenience in utilizing mobile applications made up UTAUT's effort expectation. These criteria assess the

users' effort, skill, and aptitude for using and understanding the system and its interactions. The research's four components, which discuss "the degree of ease associated with the use of the e-procurement website interface for information and services," were all derived from Venkatesh et al. (2012). The apparent ease of their usage will then probably have a beneficial impact on the uptake of e-procurement. Hence, the following hypothesis is put out in light of the evidence at hand.:

Performance expectancy has a positive impact on the adoption of e-procurement.

Performance expectancy, as defined by Venkatesh, Xu, and colleagues (2012), is the extent to which adopting technology would benefit consumers directly and indirectly when doing specific tasks and is hypothesized to affect behavioural intentions to utilize technology. On the other hand, the genesis UTAUT theory put forth in 2003 by Venkatesh, Morris, Davis, and Davis implies that performance expectancy may have an impact on how quickly people adopt new technologies. According to Aboelmaged (2018), the more user-friendly a technology is, the larger the projected performance-enhancing benefits from it. This idea was backed up by research. The fundamental tenet of performance expectancy is that people make reasonable, systematic judgments based on the system at hand. In this study, performance expectancy was postulated to positively, directly, and indirectly effect adoption of e-procurement.

Societal influence has a positive impact on the adoption of e-procurement.

In the context of customers, Venkatesh et al. (2012, p. 159) defined "social influence" (SI) as "the degree to which consumers perceive those important others (e.g., family and friends) believe they should use a particular technology." In UTAUT, social influence (friends, family, workplace, and peers) has a positive effect on adoption.

Other investigations, including those by Irani et al. (2009), Burton-Jones and Hubona (2005), and Sun and Zhang (2006), revealed comparable results. The extent to which people perceive that significant other (such as family and friends) influence their decision to use eGovernment services is referred to as social impact.

Facilitating conditions has a positive impact on the adoption of e-procurement.

According to Venkatesh et al. (2012), "facilitating conditions" (FC) refer to "the consumers' perceptions of the resources and support available to perform a behavior" in the context of consumers. While Venkatesh et al. (2003) discovered that in an organizational context, enabling conditions only had an impact on "use behavior," they discovered that in the UTAUT, facilitating conditions had an impact on both adoption and "use behavior." Since e-services are new in the environment where adoption is taking place and may involve payment methods utilizing various technologies, it is reasonable to anticipate that if facilitating conditions are favorable and highly evaluated by users, they will most likely have an impact on citizens' intents to use e-services. 4 things make up UTAUT's facilitating conditions (Venkatesh et al., 2012). The conceptual definition of enabling conditions used in this study is taken from UTAUT, and it refers to "citizens' perceptions of the resources and support available to affect "intention" to use eservices." The likelihood that citizens will use e-services is seen to be positively impacted by facilitating conditions. The following hypothesis is put out in light of the evidence at hand.:

2.2.2 Resource-Based View Theory

A company's competitive edge mostly stems from how it utilizes its unique internal resources and competence by establishing strategic goals based on what they allow it to

accomplish (David, 2011). Starting with the organization's strengths, the resource-based strategy looks for an environment that will allow it to capitalize on itself by adapting the environment to doing what it does best rather than altering it to suit the environment. Not all organizational resources are potential sources of competitive advantage, according to the resource-based view, which is one of its main insights (Hilt, 2011). However, to be valuable and competitive, resources must be able to add value to clients, enabling businesses to execute tactics that will help them better meet client needs. These strategies should be uncommon, in high demand, hard to duplicate, and hard to replace by competitors. According to Sulastrri (2006), the theory improves the efficiency of the supply chain as a whole by controlling business inventories through optimal use and allocation to be more competitive by maintaining security and attending to consumer privacy concerns. Similar to this, the theory employs techniques like value analysis to assess the capabilities of material components or systems and identify places where additional investment is not necessary. An inventory control plan that lowers the cost of such systems to the bottom line must incorporate this methodology as a key component (Husnah, 2013). The theory also benefits from supplier-led strategies by pressuring logistics service providers to learn how to exploit new tools, supplies, or procedures by using scale-intensive strategies like RFID systems that enjoy economies of scale.

2.3 Empirical Review

Ofori and Fuseini (2020) assessed the critical components for implementing e-procurement in Ghana's public sector procurement activities. According to the consumers and stakeholders polled, the availability of dependable, fairly priced, and fast Internet connectivity is critical to the deployment of e-Procurement technologies.

The research also revealed that critical human attributes, system features, monitoring and control, and organizational support for infrastructure design may all be classified as significant success factors (CSFs) for e-procurement adoption.

Ratanya (2013) claims that large industrial firms in Nairobi have partially adopted e-procurement. For instance, it was found that the vast majority of large manufacturing organizations had a framework in place for information sharing between their departments. Information exchange is one of the foundational tenets around which e-procurement is constructed. The study also reveals that most companies use centralized procurement processes, which information technology has made possible. The results offer additional proof that most organizations use internal online procurement. This implies that e-adoption procurement's and execution have made internal procurement activities possible.

The impact of e-procurement on efficient supply chain management procedures in the energy sector was investigated by Ngeno and Kinoti (2017). The goal of the study was to evaluate how e-procurement affected Kenya's energy sector's efficient supply chain management procedure. E-tendering, electronic data interchange, and supply chain integration were all discovered to have an impact on efficient supply chain management procedures in the energy sector.

Kemunto and Kwasira (2018) investigate how electronic sourcing affects how well procurement tasks are carried out. According to the survey, government entities have accepted the idea of e-sourcing for their procurement processes. The full advantages of e-sourcing, however, have not yet been recognized because it has not yet been fully applied.

Osir (2016) investigated how e-procurement adoption affected the effectiveness of procurement. According to the report, the government should provide comprehensive system integration and technology standards, as well as a legal framework and government policy requiring all bidders to use electronic procurement.

Kagai (2013) examined the adoption of e-procurement by Kenyan institutions and the impact it has on those organizations' productivity. According to research results on the extent of e-procurement adoption, 80% of Kenyan institutions have e-procurement software installed and use e-procurement at every level of the procurement process. The correlation coefficient was calculated in order to ascertain the degree to which e-procurement impacts performance, efficiency and dematerialization, efficacy and customer happiness, and transparency variables. The correlation coefficients for each performance metric were 0.87, 0.65, and 0.86, demonstrating that e-procurement had a significant positive impact on each. The limitations of e-procurement methods shouldn't impair the company's effectiveness, efficiency, customer satisfaction, or ability to reduce costs.

Makau (2014) looked at the challenges of implementing electronic procurement in Kenya's public sector. According to the findings, the majority of agencies lack the IT infrastructure required to execute e-procurement, government technology policies do not completely support its adoption, and the majority of employees lack awareness of e-procurement and see it as a danger to their careers.

The study's goals were to determine the extent of e-procurement adoption across state businesses, the adoption hurdles, as well as the relationship between e-procurement and procurement success in state companies. Kamotho (2014) investigated the connection between e-procurement practices and state company performance. According to the

report, state enterprises have adopted a number of e-procurement strategies to increase the effectiveness of their procurement processes. The findings of the regression analysis revealed that the various e-procurement policies adopted by state businesses had had a considerable impact on their procurement performance. The report suggests that, through line ministries, the national government makes an effort to persuade the remaining state enterprises to adopt electronic procurement.



2.4 Conceptual Framework

E-procurement, according to the study, is when the government makes purchases of products and services using Internet-based information systems (Neupane et al., 2014, Vaidya, 2009). There are numerous e-Procurement system dimensions, much as the various steps in the public procurement process. E-informing is the process of exchanging procurement information over the Internet, whereas e-sourcing enables the discovery of new suppliers for specific purchasing requirements, E-tendering, e-reverse auctioning, and e-ordering are various methods of purchasing, specifically the process of making an order over the Internet. E-markets operate as a platform for sellers and buyers to connect online, and e-contract management (Neupane et al., 2012).

One of the most well-known models for widespread technology adoption is the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). It seeks, like previous acceptance models, to characterize user intentions to use an IS and progress usage behavior. Venkatesh et al. (2003) developed this combination model to capture the acceptance process in greater depth than previous solo models could. According to Venkatesh et al. (2003), four important constructs—performance expectancy, effort expectancy, social impact, and enabling factors—directly affect usage intention and behavior.

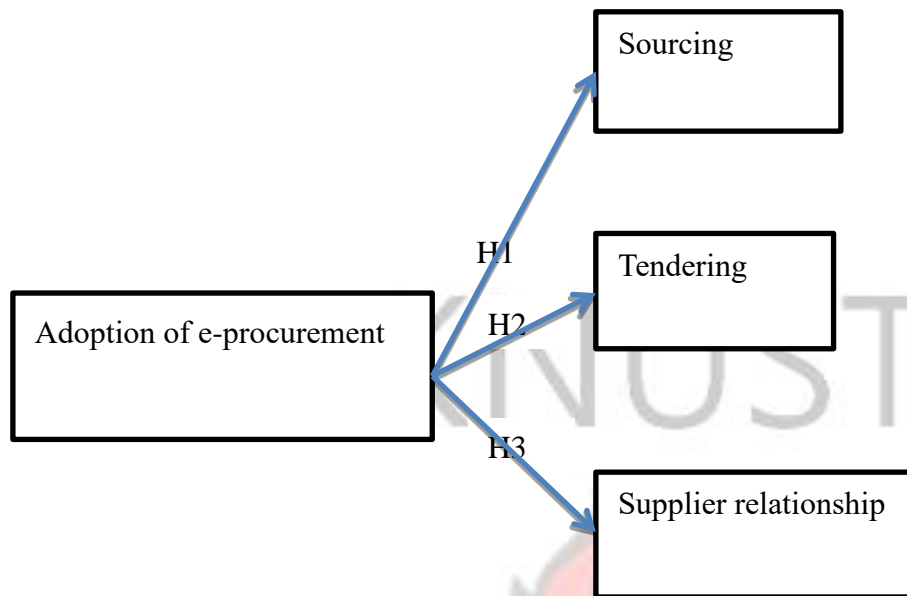


Figure 2.1: Conceptual Framework

Source: Venkatesh (2003)

2.5 Hypothesis Development

H1: E-procurement has a positive impact on the procurement function of sourcing.

In order to find new potential suppliers more quickly, this procedure involves searching the internet for them. It makes use of internet technology to look for new vendors outside of geographical boundaries for a certain category of purchasing needs. E-major sourcing has the advantages of lower costs and more flexible decision-making. (Ombat, 2015) The process of choosing suppliers through electronic procurement is known as electronic sourcing. (Bahambari and Kelidbari) 2015 is the reference year. Every stage of the procurement process, including budget analysis, requirements summaries, requirements formulation, supplier search, negotiations (request for move-in, offer, or offer), auctions, offer evaluations, and contract administration are supported by a web-based platform. The purchasing function should be improved by addressing all areas of

change, including strategy, organization, systems, procedures, and people, even though e-sourcing provides a high return on investment. As a result, e-Sourcing is acknowledged as the foundation of modern strategic sourcing because it automates and makes simple strategic sourcing processes like RFxs and reverse auctions. Additionally, it improves the company's internal supply chain's flexibility and transparency, as well as the buyer-seller connection. Hence, the following hypothesis is proposed:

H5: E-procurement has a positive impact on the procurement function of sourcing.

H2: E-procurement has a positive impact on the procurement function of tendering.

In a tender, interested parties or businesses respond to a request for proposals by offering to construct, sell, or provide services. According to Eriksson and Westerberg (2011), the purpose of the tendering system is to select an appropriate contractor at the appropriate time for the situation and to obtain from him at the appropriate time a proper tender or offer on which a contract can be let.t. According to Morosan and Jeong's (2008) discussion of competitive purchasing strategies, businesses must make the most of internet-based technologies (including e-tendering) in all facets of their operations, connecting with all participants in the supply chain, accelerating information transfer, and minimizing non-value-adding tasks. According to Mahdillou and Akbary (2014), e-tendering use was linked to transactional advantages. E-tendering makes any transaction procedure simpler. The e-payment technology has supported the full tendering process, from the raising of demand through online payment. Due to the electronic interactions with suppliers, removal of pointless tasks, increased data correctness, and facilitation of supplier performance enhancements, the electronic

processing of tendering operations has been linked to significant time savings and better efficiency. Hence, the following hypothesis is proposed:

H6: E-procurement has a positive impact on the procurement function of tendering.

H3: E-procurement has a positive impact on the procurement function of supplier relationships and management.

According to Ellram and Zsidisin (2002), the adoption of e-procurement is strongly influenced by strong ties between buyers and suppliers. E-procurement transactions are more likely to be initiated by parties in high trust relationships, according to research. The ideas that greater e-procurement use, and inter-organizational systems boost opportunities tend to foster more fruitful customer-supplier relationships over time are supported by both Croom (2001) and Kumar and Qian (2006). The benefits of supplier integration include increased responsiveness, flexibility, and time savings (Chen et al. 2018; Madzimore et al. 2020). By reducing production costs and uncertainties, supplier integration also lowers transaction costs, improving operational performance (Flynn et al., 2010). The transmission of risks and business information, such as demand projections, inventory and production planning decisions, and the synchronization of business activities, are intended to improve supply chain performance as a result of supplier integration in enterprises (So and Sun, 2010). Hence, the following hypothesis is proposed.

H7: E-procurement has a positive impact on the procurement function of supplier relationships and management.

CHAPTER THREE

RESEARCH METHODOLOGY AND ORGANIZATIONAL PROFILE

3.1 Introduction

The section gives details on the methods and procedures utilized to carry out the study. In addition to describing the sampling techniques, it defines the population from which the sample is drawn. Additionally, it covers methods for gathering data and data analysis techniques.

3.2 Research design

A study may aim to explore, describe, explain, predict, or modify among other things, according to researchers (Neuman, 2014). A research purpose provides the underlying direction for carrying out the research. The qualitative, quantitative, and mixed methods approach to study that Creswell (2007) introduces are all used in social science research.

Testing objective theories to ascertain the strength of the link between variables is a component of the quantitative research approach (Creswell, 2014). The method aims to increase objectivity, replicability, and generalizability by emphasizing the assessment, measurement, and analysis of causal relationships between variables (Creswell and Clark, 2007). A variety of empirical techniques are used in qualitative research to show and explain the experiences of research participants in particular circumstances (Creswell, 2014). Studies that take a qualitative approach to inquiry focus on uncovering the experiences of study participants using verbal summaries with no or little statistical analysis, and they explore the social environment generally from their perspective (Yin, 2012). (Shaughnessy et al., 2012). When referring to the collection

and analysis of data in single research, the term "mixed methods" refers to the use of both qualitative and quantitative approaches (Creswell and Clark, 2007). The methodology emphasizes the idea that using both quantitative and qualitative approaches in combination improves the quality of research and offers a more thorough knowledge of the research question than when only one approach is applied (Creswell, 2014). The study used a quantitative approach.

The methods, instruments, and strategies employed in gathering data for a specific study to achieve the research's objectives are referred to as the research strategy (Saunders et al., 2012). It is the "overall strategy of how the researcher will go about addressing the research question(s)," according to Saunders et al. (2009). Given the paradigm they support or subscribe to and the accompanying research approach they choose to employ, a researcher has access to a number of techniques (Aliyu et al., 2014). Seven research methodologies are listed by Saunders et al. (2009), including action research, case studies, archival research, ethnography, experiments, grounded theory, and surveys. A case study approach was used in the study. When there are complex challenges that are deeply ingrained in an organization, a case study research technique is appropriate to provide a thorough grasp of the context of the subject of inquiry as well as the processes involved (Yin, 2009).

3.3 Population of the study

The target population for any study refers to all individuals who can provide the researcher with the information they need and from whom they can draw conclusions (Churchill and Iacobucci, 2009). The general group of individuals from which a study sample is taken and to whom the study may extrapolate its findings is referred to as the

target population. The population for this study is the procurement department in the Ministry of Communication and Digitalisation and its seven (7) agencies namely: National Information Technology Agency (NITA), The Ghana-India Kofi Annan Centre of Excellence in ICT(AITI-KACE), The Cyber Security Authority (CSA), Ghana Post, Ghana Investment Fund for Electronic Communication (GIFEC), National Communication Authority (NCA) and Ghana Meteorological Agency. The staff strength of the procurement department in the Ministry of Communication and Digitalisation and all seven (7) agencies is eighty-nine (89).

3.4 Sampling Technique and Sample Size

While it is the goal of every researcher to collect data from every segment of a target population, this is typically only possible when the target population for a specific study is very small. This method is known as a census. As a result, to select representative samples from the population of interest, research with vast target populations, like this thesis, rely on sampling procedures (Malhotra, 2010). A sample is described as "a subgroup of the elements of the population selected for participation in the study" by Malhotra and Birks (2007). Choosing a sufficient number of components from a larger population in the hopes that the information obtained from them will enable accurate judgments and inferences about the overall population is consequently considered sampling (Hair et al., 2010). The importance of sampling rests in its capacity to speed up data collection, ensure more accurate results are generated, and make potential responders more accessible (Saunders et al., 2011).

The procurement staff in the Ministry of Communication and Digitalisation and all seven (7) agencies were sampled for the study using the census as a sampling approach.

According to Kapahi (2014), a census is a process of methodically gathering and recording information about the constituents of a specific population by gathering information from every unit. There is little sense in sampling for a small population (less than 100 persons or other units), according to Krishnaswami and Rangnathan (2010) and Gay and Airasian (2003). Instead, the full population should be surveyed. Since the population was 89 which is less than 100, the census strategy was adopted, and the sample size is 89.

3.5 Data collection

The researcher must choose the sources from which data will be gathered in order to meet the goals of a particular study. Researchers can choose from primary or secondary sources, as noted in the literature (Saunders et al., 2011). While secondary data are gathered for purposes other than the current issue and are typically acquired from trade journals, personal records, and other sources, primary data are collected for specific research and are direct reports of observations (Malhotra, 2010).

3.6 Data analysis

Data analysis entails the modelling and running of data with the primary goal of obtaining pertinent information from the data gathered, which is referred to as the study's conclusions. Descriptive statistics are employed to do this. In order to create a summary of statistical facts displaying the frequencies, percentages, mean, and standard deviation of the data in a tabular format, descriptive statistics were performed in SPSS.

3.7 Ethical consideration

Any research project must take ethical considerations into account since they determine whether a researcher's actions in relation to study participants' rights are suitable. (2009) Saunders et al. Obtaining informed consent, or subjects' willing assent to engage in research after being made aware of its goals and scope, was a crucial ethical consideration in this investigation. The purpose and reason of the study were explicitly made known to all the respondents and the respondents' consent was sought and they were assured of the confidentiality of their information to the effect that the information being provided by the respondents is for academic purposes only and the information will not be shared and used for any other purpose other than for the academic purpose. Thus, the respondents were not forced to take part in the survey, they had the option to refrain from taking part in the survey.

3.8 Organizational Profile of Ministry of Communication and Digitalisation

The Ministry of Communication and Digitalisation plays a pivotal role in advancing Ghana's technological landscape. Established to drive the country's digital transformation, it oversees communication policies, infrastructure development, and the integration of cutting-edge technologies. Emphasizing inclusivity, the ministry works to bridge the digital divide and promote widespread internet access. Its initiatives include fostering innovation, cybersecurity, and e-governance, fostering a conducive environment for technological entrepreneurship. With a focus on enhancing connectivity, the ministry collaborates with stakeholders to develop robust communication networks. Committed to digital literacy, it implements programs to empower citizens with digital skills. The Ministry of Communication and Digitalisation stands at the forefront of Ghana's technological evolution, shaping a connected and technologically empowered future.

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CHAPTER FOUR

RESULTS AND ANALYSIS

4.1 Introduction

In this section, the data from the research findings are analyzed and explained, with an emphasis on the research's results and findings. Tables, figures, and other charts are used to present the results and findings.

4.2 Background information of respondents

The demographics of the respondents were crucial in this study since they could affect a person's behavior and, in turn, explain his or her views and attitudes on electronic procurement. Patten and Newhart (2017) contend that assessing the demographic factors provides an opportunity for understanding how individual factors affect the variables being studied. Gender, age, job history, and highest level of education were among the demographic factors included in this study that were determined to be pertinent for analysis.

4.2.1 Gender of respondents

The research was conducted among 74 respondents, out of which 28 were female and 46 were male, representing 38% and 62% of the total research population respectively. The results show that there were more males than females in the research population.

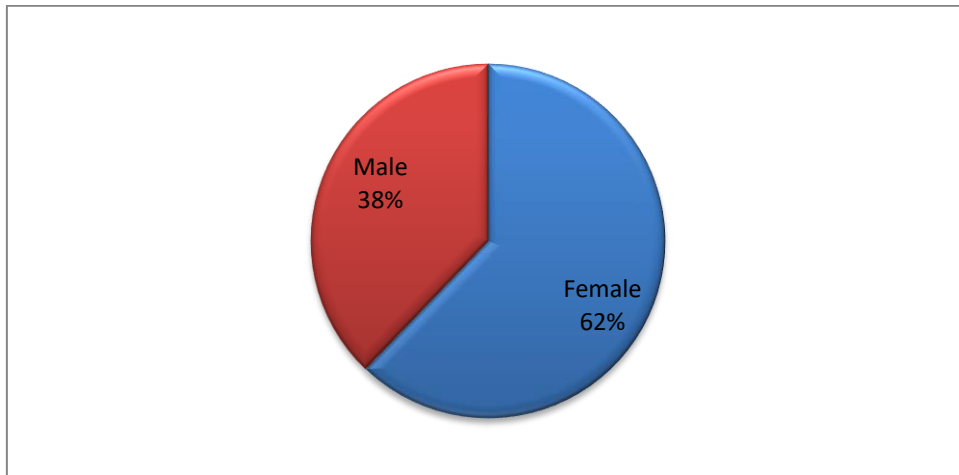


Figure 4.1: Gender of respondents

Source: Field data, 2022

4.2.2 Age of respondents

Participants in the study ranged in age from 20 to over 60 years old. None of the responses was less than 21 years old. A little over 27% of respondents were between the ages of 21 and 29, while 53% were between the ages of 30 and 39. The age group of 40 to 49 years was followed by around 18% of the respondents, and the age group of 50 to 59 years was represented by 4% of the total respondents. Last but not least, none of the responders were over 60. The results showed that the majority of respondents were in the regular working age range of 20 to 59 years old.

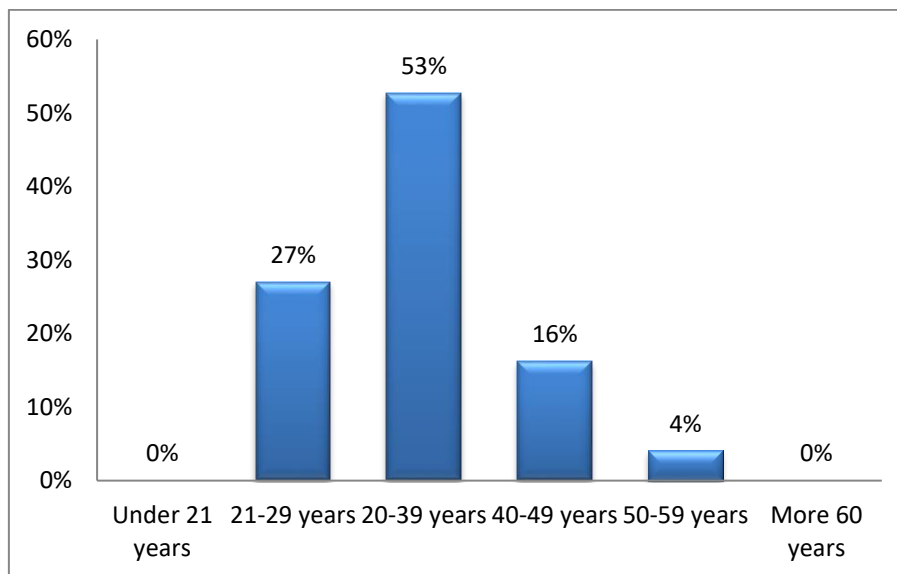


Figure 4.2: Age respondents

Source: Field data, 2022

4.2.3 Educational background

The researcher had to determine whether the sampled population was the correct one for the study, which made the study's education level vital. The academic qualification of the respondents ranged from diploma to master's degree. There were no respondents with no education and JHS/SHS education. Only 11% of the research population had a diploma, with 46% having a first degree and 41% being holders of master's degree. From the results in Figure 4.3, it is also clear that there were more first-degree holders than any of the other qualifications.

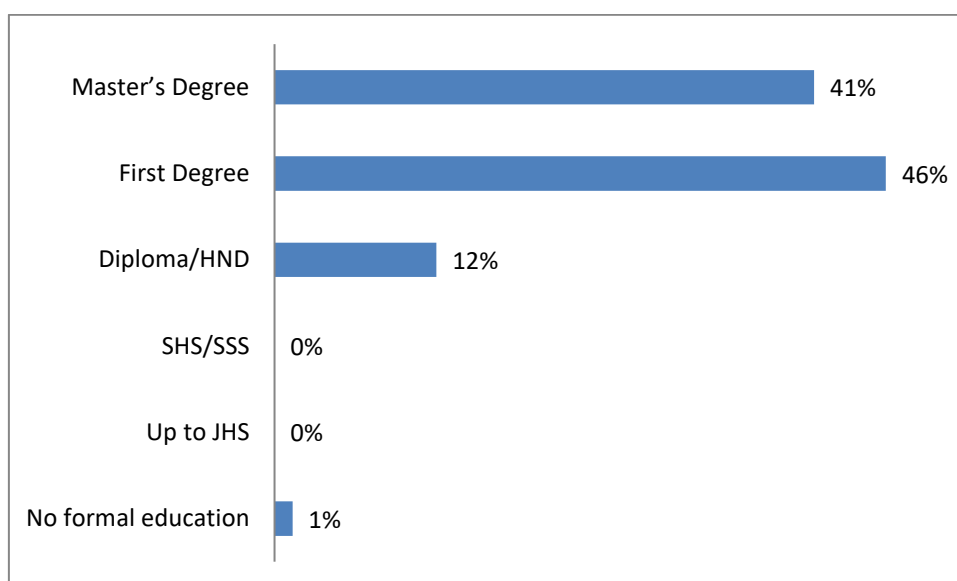


Figure 4.3: Educational background of respondents

Source: Field data, 2022

4.2.4 Working experience.

Regarding the working experience of the respondents, the results in figure 4.4 below show that 11% of the research population had been working for more than 10 years, and 16% of the total research population had been working for 7-9 years. This was followed by respondents who have worked between 1-3 years, and they made up 37% of the total population. With respect to respondents who have worked less than one year, they were 4% of the total respondents. Lastly, 42% of the respondents have worked for between 4-6 years. The results indicate that the respondents have considerable working experience and thus have the capacity to express their views and opinions on e-procurement.

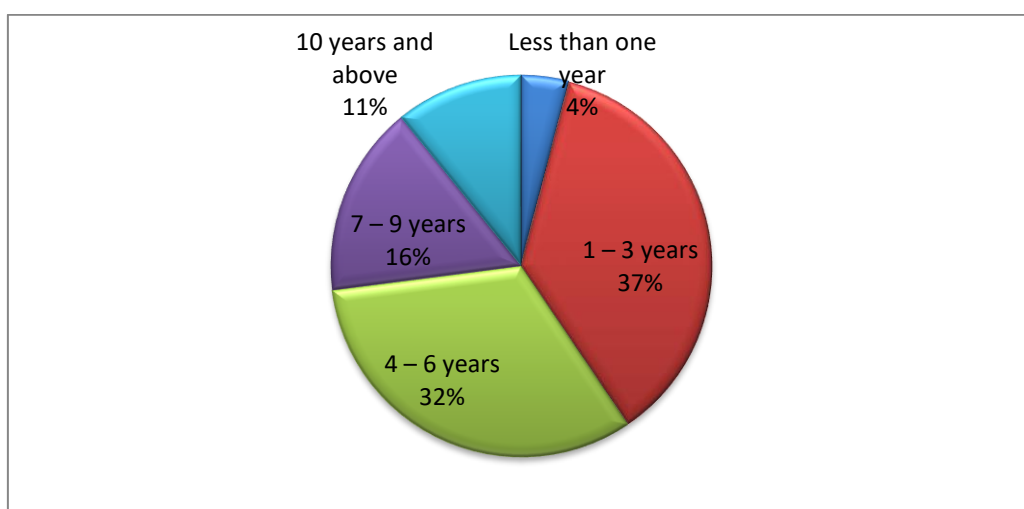


Figure 4.4: Working experience of respondents.

Source: Field data, 2022

4.3 Level of Adoption

Table 4.1: Level of Adoption

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%
The level of adoption of the e-procurement system in Ghana										
The extent to Which E-Procurement is Used	6	8%	18	24%	32	43%	14	19%	4	5%
E-procurement is good for all procurement processes at work	2	3%	13	18%	18	24%	21	28%	20	27%
I use the E-procurement platform regularly at work	11	15%	24	32%	27	36%	7	9%	5	7%
We use the E-procurement platform for all procurement processes	13	18%	22	30%	25	34%	11	15%	3	4%
The E-procurement platform is suitable for all procurement processes	6	8%	9	12%	25	34%	25	34%	9	12%
E-procurement is ideal for today's competitive business environment	2	3%	5	7%	9	12%	34	46%	24	32%

The researcher asked the respondents about their level of adoption of e-procurement in their work. Regarding the question of the extent to which the respondents used e-procurement, 4(5%) respondents strongly agreed, 14(19%) agreed, 32(43%) were neutral, 18(24%) disagreed, and 6(8%) strongly disagreed. Thus, a high majority were in disagreement about the extent of usage of e-procurement in their work. Respondents were asked if E-procurement is good for all procurement processes at work, 20(27%) strongly agreed, 21(28%) agreed, 18(24%) were neutral and only 13(18%) disagreed, and 2(3%) strongly disagreed. This implied that most of the respondents agreed that E-procurement is good for all procurement processes at work. With regards to the use of the E-procurement platform regularly at work, 11(15%) respondents strongly disagreed, 24(32%) disagreed, 27(36%) were neutral, 7(%) agreed, and only 5(7%) strongly agreed.

Most of the respondents disagree with the statement that they use E-procurement platform regularly at work. With the variable, 'We use the E-procurement platform for all procurement processes, 13(18%) strongly disagreed, 22(30%) disagreed, 25(34%) were neutral, 11(15%) respondents agreed and 3 (4%) strongly agreed. This implied that most of the respondents disagreed with the assertion that they use the E-procurement platform for all procurement processes. Concerning the suitability of e-procurement for all procurement processes, 6(8%) respondents strongly disagreed, 9(12%) disagreed, 25(34%) were neutral, 25(34%) agreed, and only 9(12%) strongly agreed. The majority of the respondents were in agreement with the statement that the E-procurement platform is suitable for all procurement processes. With the variable, 'E-procurement is ideal for today's competitive business environment', 2(3%) strongly disagreed, 5(7%) disagreed, 9(12%) were neutral, 34(46%) respondents agreed and

24(32%) strongly agreed. This implied that most of the respondents agreed with the assertion that E-procurement is ideal for today's competitive business environment.

4.4 Performance expectation

The study aimed to evaluate e-performance procurement's expectations. The assertion that E-procurement enhances the efficient and timely delivery of goods and services recorded a mean and standard deviation of 3.77 and 0.90 respectively. A mean of 3.77 on a 5-point Likert scale means that the majority of the respondents agreed with the assertion that E-procurement enhances the efficient and timely delivery of goods and services. It was also ratified by the median and mode, each of which was 4, implying that the majority of the research population was in agreement. With regards to 'E-procurement improves work output especially processing of data and requests', there was a mean of 3.81, a median and mode of 4 each, and a standard deviation of 0.93. Similarly, a mean of 3.81 on a 5-point Likert scale means the majority of the respondents were in agreement that E-procurement improves work output especially processing of data and requests. The mode and median additionally confirm that the majority of the respondents were in support. The assertion that E-procurement enhances quality in the delivery of services also had a mean of 3.62, median and mode of 4 each, and standard deviation of 0.92, all of which postulate that E-procurement enhances quality in the delivery of services. With regards to the assertion that E-procurement reduces human errors in the procurement process, a mean of 3.96 was recorded, a median and mode of 4 and 5 respectively, and a standard deviation of 1.09, which when put on a 5-point Likert scale infers that majority of the respondents agree that E-procurement reduces human errors in the procurement process. Concerning the assertion that "With E-procurement I am able to do more at work saving time and

effort" the mean calculated was 3.62, with the mode and median each being 4 and 1.02 standard deviation. Just like the previous variables, a mean of 3.62, when plotted on a 5-point Likert scale represents a high number of people agreeing with the statement.

Table 4.2: Performance expectation

	Mean	Median	Mode	Standard Deviation	Min	Max	Sum	Count
E-procurement enhances the efficient and timely delivery of goods and services	3.77	4	4	0.90	2	5	279	74
E-procurement improves work output especially the processing of data and requests	3.81	4	4	0.93	1	5	282	74
E-procurement enhances quality in the delivery of services	3.62	4	4	0.92	2	5	268	74
E-procurement reduces human errors in the procurement process	3.96	4	5	1.09	1	5	293	74
With E-procurement I am able to do more at work saving time and effort	3.62	4	4	1.02	1	5	268	74

4.5 Ease of use

The goal of the study was to evaluate how user-friendly e-procurement is. The claim that the electronic purchase system is simple to use had a mean and standard deviation that were, respectively, 3.32 and 0.88. A mean of 3.32 on a 5-point Likert scale means that the majority of the respondents were neutral to the assertion that the e-procurement platform is easy to use. It was also confirmed by the median and mode, each of which was 3, implying that the majority of the research population was not sure. With regards

to the assertion that the e-procurement platform requires advanced IT skills to use had a mean of 2.97, a median of 3 and a mode of 2 each, and a standard deviation of 1.16. This stipulates that most of the respondents disagreed with the assertion that the e-procurement platform requires advanced IT skills to use. Again, a mean of 2.97 on a 5-point Likert scale means the majority of the respondents disagreed that the e-procurement platform requires advanced IT skills to use. The mode and median additionally confirm that the majority of the respondents were in disagreement. The assertion that the e-procurement platform requires extensive training to use it also had a mean of 3.41, median and mode of 3 each, and standard deviation of 0.95, all of which reveals that most of the respondents were neutral to the assertion that the e-procurement platform requires extensive training to use it. With regards to the assertion that it is very frustrating using e-procurement platforms, a mean of 2.23 was recorded, a median of 2 and mode of 1 respectively, and a standard deviation of 1.08, which when put on a 5-point Likert scale infers that most of the respondents disagree that It's very frustrating using e-procurement platforms.

Table 4.3: Ease of use

	Mean	Median	Mode	Standard Deviation	Min	Max	Sum	Count
The e-procurement platform is easy to use	3.32	3	3	0.88	1	5	246	74
The e-procurement platform requires advanced IT skills to use	2.97	3	2	1.16	1	5	220	74
The e-procurement platform requires extensive training to use it	3.41	3	3	0.95	1	5	252	74
It's very frustrating using e-procurement platforms	2.23	2	1	1.08	1	5	165	74

4.6 Social influence

The study sought to assess social influence as a variable influencing the adoption of e-procurement. The assertion that "I use the e-procurement because that is what everyone is using" recorded a mean and standard deviation of 2.42 and 0.89 respectively. A mean of 2.41 on a 5-point Likert scale means that the majority of the respondents disagreed with the assertion. It was also confirmed by the median of 2 and mode of 3, implying that the majority of the research population was in disagreement with the assertion that "I use e-procurement because that is what everyone is using". With regards to 'I use the e-procurement because my organization expects me to use', there was a mean of 3.18, a median and mode of 3 and 4 respectively 4, and a standard deviation of 1.089. Similarly, a mean of 3.18 on a 5-point Likert scale means the majority of the respondents were neutral. The assertion that "My colleagues are using it and so I also use it" also had a mean of 2.50 with a median and mode of 3 each and a standard deviation of 1.024. With regards to the assertion that "Colleagues and friends influence your adoption of e-procurement," a mean of 2.70 was recorded, with a median and mode of 3 and 2 respectively, and a standard deviation of 1.11, which when put on a 5-point Likert scale infers that majority of the respondents disagree that "Colleagues and friends influence your adoption of e-procurement".

Table 4.4: Social influence

	Mean	Median	Mode	Standard Deviation	Min	Max	Sum	Count
I use e-procurement because that is what everyone is using	2.41	2	3	0.89	1	5	178	74
I use e-procurement because my organisation expects me to use	3.18	3	4	1.089	1	5	235	74
My colleagues are using it and so I also use it	2.50	3	3	1.024	1	5	185	74

Colleagues and friends influence your adoption of e-procurement	2.70	3	2	1.11	1	5	200	74
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4.7 Facilitating conditions.

The study sought to assess the facilitating conditions that enhance the adoption of e-procurement. The assertion that the *"I use it because I can access it everywhere"* recorded a mean and standard deviation of 3.51 and 0.97 respectively. A mean of 3.51 on a 5-point Likert scale means that the majority of the respondents agreed with the assertion that the e-procurement platform is used because it is everywhere. It was also confirmed by the median and mode, each of which was, implying that the majority of the research population agreed. With regards to the assertion that "I use e-procurement because it has a strong IT infrastructure and support base", it had a mean of 3.36, a median of 3 and a mode of 3 each, and a standard deviation of 0.88. This stipulates that most of the respondents were neutral to the assertion. The mode and median additionally confirm that the majority of the respondents were neutral. The assertion that "I use the e-procurement because my organization has provided enough training on it" also had a mean of 3.12, a median and mode of 3 each, and a standard deviation of 1.08, all of which reveals that most of the respondents were neutral to the assertion that "I use the e-procurement because my organization has provided enough training on it". Regards to the assertion that "I use the e-procurement because it is required by law" recorded a mean of 3.08, a median of 3 and a mode of 3 respectively, and a standard deviation of 1.14, which when put on a 5-point Likert scale infers that majority of the respondents were neutral.

Table 4.5: Facilitating conditions

	Mean	Median	Mode	Standard Deviation	Min	Max	Sum	Count
I use it because I can access it everywhere	3.51	4	4	0.97	1	5	260	74
I use e-procurement because it has a strong IT infrastructure and support base	3.36	3	3	0.88	1	5	249	74
I use e-procurement because my organisation has provided enough training on it	3.12	3	3	1.08	1	5	231	74
I use e-procurement because it is required by law	3.08	3	3	1.14	1	5	228	74

4.8 The effect of e-procurement on the procurement function of sourcing

The study sought to assess the effect of e-procurement on the procurement function of sourcing. The assertion that E-procurement has reduced corruption in sourcing recorded a mean and standard deviation of 3.16 and 1.12 respectively. A mean of 3.16 on a 5-point Likert scale means that the majority of the respondents were neutral to the assertion that E-procurement has reduced corruption in sourcing. It was also corroborated by the median and mode, each of which was 3, signifying that the majority of the research population was neutral. With regards to 'E-procurement enhances quality goods and services in sourcing', there was a mean of 3.28, a median and mode of 3 each, and a standard deviation of 0.94. Similarly, a mean of 3.28 on a 5-point Likert scale means the majority of the respondents were again neutral that E-procurement enhances quality goods and services in sourcing. The mode and median of 3 each additionally confirmed that the majority of the respondents were neutral to the assertion that E-procurement enhances quality goods and services in sourcing. The assertion that E-procurement enhances transparency in the sourcing of goods and

services also had a mean of 3.61, median and mode of 4 each, and standard deviation of 0.99, all of which postulate that E-procurement enhances transparency in the sourcing of goods and services. Thus, the majority of respondents believe that electronic procurement enhances transparency in the sourcing of goods and services. With regards to the assertion that E-procurement improves accountability in sourcing for goods and services, a mean of 3.55 was recorded, a median and mode of 4 and 4 respectively, and a standard deviation of 1.04, which when put on a 5-point Likert scale infers that majority of the respondents agree that E-procurement improves accountability in sourcing for goods and services.

Concerning the assertion that "E-procurement enhances efficiency in the sourcing for goods and services" the mean calculated was 3.61, with the mode and median each being 4 and 1.07 standard deviation. Just like the previous variables, a mean of 3.61, when plotted on a 5-point Likert scale represents a high number of people agreeing with the statement. The assertion that E-procurement promotes value for money in sourcing goods and services recorded a mean and standard deviation of 3.35 and 1.09 respectively. The majority of respondents were ambivalent toward the claim that electronic procurement encourages value for money when procuring products and services, with a mean of 3.35 on a 5-point Likert scale. It was also corroborated by the median and mode, each of which was 3, suggesting that the majority of the research population was neutral. With regards to 'E-procurement enhances effectiveness in the sourcing for goods and services', there was a mean of 3.59, a median and mode of 3 each and a standard deviation of 1.03. Similarly, a mean of 3.59 on a 5-point Likert scale means the majority of the respondents were in agreement with the assertion that E-procurement enhances effectiveness in the sourcing of goods and services. The mode

and median of 4 each additionally confirm that the majority of the respondents agreed with the assertion that E-procurement enhances effectiveness in the sourcing of goods and services.

Table 4.6: The effect of e-procurement on the procurement function of sourcing

	Mean	Median	Mode	Standard Deviation	Min	Max	Sum	Count
E-procurement has reduced corruption in sourcing	3.16	3	3	1.12	1	5	234	74
E-procurement enhances quality goods and services in sourcing	3.28	3	3	0.94	1	5	243	74
	3.57	4	4	0.99	1	5	264	74
E-procurement enhances transparency in the sourcing of goods and services	3.61	4	4	1.10	1	5	267	74
E-procurement improves accountability in sourcing goods and services	3.55	4	4	1.04	1	5	263	74
E-procurement enhances efficiency in the sourcing of goods and services	3.61	4	4	1.07	1	5	267	74
E-procurement promotes value for money in sourcing goods and services	3.35	3	3	1.09	1	5	248	74
E-procurement enhances effectiveness in the sourcing for goods and services	3.59	4	4	1.03	1	5	266	74

4.9 The effect of e-procurement on the procurement function of tendering

The third goal of this research is to look at how e-procurement affects the procurement function of tendering. The impact of e-procurement on the procurement function of tendering was the subject of several questions that were posed to the responders. The assertion that online purchasing system has the potential to reduce corruption in tendering recorded a mean and standard deviation of 3.59 and 1.02 respectively. A

mean of 3.59 on a 5-point Likert scale means that the majority of the respondents were in agreement with the assertion E-procurement has the potential to reduce corruption in tendering. It was also confirmed by the median and mode, each of which was 4, implying that most of the respondents were in support of the assertion that E-procurement has the potential to reduce corruption in tendering. Again, the assertion that E-procurement enhances transparency in the tendering process had a mean of 3.74, a median and mode of 4 each, and a standard deviation of 0.88. Similarly, a mean of 3.74 on a 5-point Likert scale means most of the respondents again agreed with the assertion that E-procurement enhances transparency in the tendering process. The mode and median of 4 each additionally confirm that most of the respondents agreed with the assertion E-procurement enhances transparency in the tendering process. The assertion E-procurement improves fairness and accountability in tendering also had a mean of 3.66, median and mode of 4 each, and standard deviation of 1.06, all of which confirmed that E-procurement improves fairness and accountability in tendering. Thus, most of the respondents are of the view E-procurement improves fairness and accountability in tendering. With regards to the assertion that E-procurement enhances efficiency in the tendering process, a mean of 3.78 was recorded, with median and mode of 4 and 4 respectively, and a standard deviation of 1.03, which when put on a 5-point Likert scale infers that the majority of the respondents agree that E-procurement enhances efficiency in the tendering process.

Concerning the assertion that "E-procurement promotes value for money in tendering" the mean calculated was 3.54, with a mode of 3 and median of 4, and a 1.07 standard deviation. Just like the previous variables, a mean of 3.54, when plotted on a 5-point Likert scale represents a high number of people being neutral to this assertion. The

assertion that E-procurement enhances effectiveness in the tendering recorded a mean and standard deviation of 3.70 and 1.09 respectively. A mean of 3.70 on a 5-point Likert scale means that the majority of the respondents agreed with the assertion that E-procurement enhances effectiveness in tendering. It was also corroborated by the median and mode, each of which was 4, suggesting that the majority of the respondents were in agreement with the assertion that E-procurement enhances effectiveness in the tendering.

Table 4.7: The effect of e-procurement on the procurement function of tendering

	Mean	Median	Mode	Standard Deviation	Min	Max	Sum	Count
E-procurement has the potential to reduce corruption in tendering	3.59	4	4	1.02	1	5	266	74
E-procurement enhances transparency in the tendering process	3.74	4	4	0.88	2	5	277	74
E-procurement improves fairness and accountability in tendering	3.66	4	4	1.06	1	5	271	74
E-procurement enhances efficiency in the tendering process	3.78	4	4	1.03	1	5	276	73
E-procurement promotes value for money in tendering	3.54	4	3	1.00	1	5	262	74
E-procurement enhances effectiveness in the tendering	3.70	4	4	0.98	1	5	270	73

4.10 The effect of e-procurement on the procurement function of supplier management

The last object of the study was to ascertain the effect of e-procurement on the procurement function of supplier management. The assertion that E-procurement has

improved communication with suppliers recorded a mean and standard deviation of 3.46 and 1.04 respectively. A mean of 3.46 on a 5-point Likert scale means that most of the respondents were neutral to the assertion that E-procurement has improved communication with suppliers. It was also corroborated by the median and mode, each of which was 3, signifying that the majority of the research population was neutral.

Concerning the assertion that 'E-procurement enhances easy access to suppliers', there was a mean of 3.70, a median of 4 and a mode of 3, and a standard deviation of 0.98. Similarly, a mean of 3.70 on a 5-point Likert scale means the majority of the respondents were in agreement with the assertion that E-procurement enhances easy access to suppliers. The assertion that E-procurement enhances timely feedback to suppliers also had a mean of 3.72, median and mode of 4 each, and standard deviation of 1.10, all which postulate E-procurement enhances timely feedback to suppliers. Thus, most of the respondents are of the view that E-procurement enhances timely feedback to suppliers. With regards to the assertion that E-procurement enhances transparency in managing suppliers, a mean of 3.70 was recorded, with median and mode of 4 and 4 respectively, and a standard deviation of 1.02, which when put on a 5-point Likert scale infers that the majority of the respondents agree that E-procurement enhances transparency in managing suppliers. Concerning the assertion that "E-procurement improves accountability to suppliers" the mean calculated was 3.51, with the mode and median each being 4 and 1.02 standard deviation. Just like the previous variables, a mean of 3.51, when plotted on a 5-point Likert scale represents a high number of people agreeing with the statement.

Table 4.8: The effect of e-procurement on the procurement function of supplier management.

	Mean	Median	Mode	Standard Deviation	Min	Max	Sum	Count
E-procurement has improved communication with suppliers	3.46	3	3	1.04	1	5	256	74
E-procurement enhances easy access to suppliers	3.70	4	3	0.98	1	5	274	74
E-procurement enhances timely feedback to suppliers	3.72	4	4	1.10	1	5	275	74
E-procurement enhances transparency in managing suppliers	3.70	4	4	1.02	1	5	274	74
E-procurement improves accountability to suppliers	3.51	4	4	1.02	1	5	260	74

4.11 Regression Statistics

There is a need for additional statistical analysis, such as regression analysis, to assist clarify the precise nature of the associations since a correlation coefficient just shows the relationship between variables—not their causative relationship. Regression analysis is a statistical technique that deals with building a mathematical model explaining the relationship between variables in order to predict the values of the dependent variable given the values of the independent variable. According to Field, regression analysis is a method for predicting the value of the dependent variable from one or more independent variables (2005). Regression analysis is used to ascertain the effects of independent factors (performance expectancy, effort expectancy, social influence, and facilitating conditions) on a dependent variable (e-procurement adoption).

Table 4.9: Regression statistics

Regression Statistics	
Multiple R	0.72
R Square	0.53
Adjusted R Square	0.50
Standard Error	0.57
Observations	74

According to the model shown in Table 4.7, the Multiple R measures the strength of a linear relationship between two variables. The link is stronger the higher the absolute value. R-Squared measures the percentage of the dependent variable's variance that the independent variable can account for; the higher the R-Squared, the more influence the independent variable has over the dependent variable. A perfect fit, or R Square of 1.000, implies that every point is on the line and can range from 0.000 to 1.000. R-value reveals a noteworthy strong positive association between the independent and dependent variables (0.72). The study's conclusions suggested that only 53% of the adoption of e-procurement reflected by the R² could be attributed to the four independent factors when taken together. As a result, other factors that were not examined in this research account for 47% of the adoption of e-procurement. The findings of Gupta, Manrai, and Goel (2019) and Maznorbalia and Awalluddin(2018) are supported by the results of the original UTAUT model's performance prediction, which show that facilitating conditions, performance expectancy, social influence, and effort expectancy are the determining factors that affect citizens' intention to use e-government.

Table 4.10 ANOVA Table

ANOVA					
	Df	SS	MS	F	Significance F
Regression	4	24.83	6.21	19.11	0.00
Residual	69	22.41	0.32		
Total	73	47.25			

According to the above table, the independent variable (adoption of e-procurement) is substantially predicted by the independent variables (performance expectancy, effort expectancy, social impact, and facilitating conditions) with sig=0.00. The explanatory variables performance expectancy, effort expectancy, social influence, and facilitating conditions all together have a statistically significant association with the adoption of e-procurement in this situation because the p-value is less than 0.05.

Table 4.11: Regression coefficient

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.02	0.37	0.05	0.96	(0.72)	0.76	(0.72)	0.76
Performance expectancy	0.19	0.10	1.89	0.06	(0.01)	0.39	(0.01)	0.39
Effort expectancy	0.41	0.12	3.47	0.00	0.17	0.64	0.17	0.64
Social influence	0.06	0.10	0.60	0.55	(0.14)	0.26	(0.14)	0.26
facilitating conditions	0.32	0.11	2.84	0.01	0.09	0.54	0.09	0.54

Based on the above table significance value is used to test the effect of each of the independent variables on the adoption of e-procurement separately. Based on this if sig. value is less than the p-value ($p < 0.05$) it is concluded that independent variables have a significant impact on the adoption of e-procurement. According to the table, performance expectancy has a beta coefficient value of ($\beta = (0.19)$, $p = 0.06$, $P > 0.05$). This indicates that performance expectancy is not one of the essential factors of e-

procurement adoption. In addition, effort expectancy had a coefficient Beta value ($\beta = 0.41$, $p=0.00$, $p < 0.05$). Thus, effort expectancy has a significant impact on e-procurement adoption. The regression analysis also showed that social influence has a beta value ($\beta = 0.06$, $p=0.55$, $P > 0.05$), and is insignificant to the adoption of e-procurement. According to the table, facilitating conditions have a beta coefficient value of ($\beta=0.32$), $p=0.01$, $P < 0.05$). This indicates that facilitating conditions have a significant impact on e-procurement adoption. The individual p-values indicate that effort expectancy and facilitating conditions have a significant impact on e-procurement adoption while performance expectancy and social influence have an insignificant impact on e-procurement adoption.

The findings showed that adoption of e-procurement is not significantly impacted by performance expectancy. The findings of the present study diverge from certain other investigations, according to Taluka (2016), who also found similar results. Performance Expectancy (PE) was found to be statistically negligible in relation to the adoption of new technologies, such as e-procurement, according to Taluka (2016). According to Taluka (2016)'s study, consumers may not just rely on performance expectancy to adopt and use new technologies, such as e-procurement, if they consider performance expectancy to be inconsequential. The study's findings, which concur with those of Masele (2014) and Taluka (2016), showed that performance expectations have a negligible direct impact on behavior related to the adoption of new technologies.

The study's findings, however, are at odds with those of earlier research by Chen, Kuan, and Huang (2011) and Dwivedi, Rana, Jeyaraj, Clement, and Williams (2017), which found statistical significance in the direct and indirect effects of performance expectancy on attitude toward adopting new technologies. The results also contradict

Shatta and Shayo (2021) The results show that the adoption model for e-procurement is directly influenced by performance expectancy. Similar to how relative advantage and attitude have an indirect impact on e-procurement adoption, performance expectancy also does. These results lead to the conclusion that performance expectancy has both direct and indirect effects on the adoption model for e-procurement.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATION

5.0 Introduction

This main objective is to assess the effects of the adoption of e-procurement on the procurement function in Ghana. This chapter gives a summary of the findings, and the conclusion and makes some recommendations.

5.1 Summary of findings

5.1.1 Extent of e-procurement system use in Ghana.

The first objective was to ascertain the level of adoption of the e-procurement system in Ghana. The study found that most of the respondents were either neutral or disagreed with the following assertions: We use the E-procurement platform for all procurement processes, I use the E-procurement platform regularly at work, E-procurement is good for all procurement processes at work, Extent to Which E-procurement is used and the level of adoption of the e-procurement system in Ghana. However, most of the respondents agreed to the following assertions: E-procurement is ideal for today's competitive business environment and the E-procurement platform is suitable for all procurement processes. Regarding the performance expectation aspect of the adoption of e-procurement, most of the respondents stated that E-procurement improves work output, especially the processing of data and requests and that E-procurement reduces human errors in the procurement process. Again, most of them acknowledge that E-procurement improves work output, especially the processing of data and requests. With respect to effort expectancy or ease of use, most of the respondents disagreed with the following assertions: It's very frustrating using e-procurement platforms, The e-procurement platform requires extensive training to use it and the e-procurement

platform requires advanced IT skills to use. Thus, they were of the view that it's simple to use and it does not require extensive training to use it. Concerning social influence, the respondents stated that their colleagues and friends have no influence on to use of e-procurement but rather they use e-procurement because their organization expects them to use it. Lastly, regarding facilitation conditions, the respondents were of the view that they use e-procurement because it is required by law, and they use e-procurement because it has a strong IT infrastructure and support base.

5.1.2 Impact of e-procurement on the sourcing function.

The second objective was to assess how e-procurement affected the sourcing function in terms of procurement. With this goal in mind, the majority of respondents agreed with the following statements: E-procurement improves accountability, efficiency, effectiveness, and transparency in the sourcing of goods and services.

5.1.3 Impact of e-procurement on the tendering function

The third objective of this study is to examine the effect of e-procurement on the procurement function of tendering. The respondents were asked a series of questions about the effect of e-procurement on the procurement function of tendering. The respondents were of the following view: E-procurement enhances effectiveness in the tendering; E-procurement enhances efficiency in the tendering process; E-procurement improves fairness and accountability in tendering; and E-procurement enhances transparency in the tendering process.

5.1.4 Impact of e-procurement on supplier management and relationships

The last object of the study was to ascertain the effect of e-procurement on the procurement function of supplier management. The following assertions were agreed by most of the respondents: E-procurement enhances transparency in managing suppliers; E-procurement enhances timely feedback to suppliers; E-procurement enhances easy access to suppliers; and E-procurement improves accountability to suppliers.

The study's conclusions suggested that only 53% of the adoption of e-procurement reflected by the R² could be attributed to the four independent factors when taken together. As a result, other factors that were not examined in this research account for 47% of the adoption of e-procurement. According to the results of the original UTAUT model's performance prediction, enabling circumstances, performance expectations, social influence, and effort expectations are the key variables that drive the adoption of e-procurement. The individual p-values indicate that effort expectancy and facilitating conditions significantly impact e-procurement adoption, while performance expectancy and social influence have an insignificant impact on e-procurement adoption.

5.2 Conclusion

Based on the findings, the study can conclude that E-procurement is ideal for today's competitive business environment and the benefits far outweigh the challenges. The increased use of the internet and the requirement to address the various issues with the conventional manual procurement system necessitated the adoption of electronic procurement. The adoption of e-procurement positively affects the procurement functions of sourcing, tendering, supplier relationships, and management. E-

procurement enhances effectiveness in sourcing goods and services; E-procurement enhances efficiency in sourcing goods and services. E-procurement enhances efficiency in the tendering process; E-procurement improves fairness and accountability in tendering; and E-procurement enhances transparency in the tendering process. E-procurement enhances transparency in managing suppliers; E-procurement enhances timely feedback to suppliers. The adoption of e-procurement is highly influenced by performance expectancy, ease of use, social influence and facilitating conditions.

5.3 Recommendation

5.3.1 Extent of e-procurement system use in Ghana.

According to the study, the continual workforce turnover necessitates ongoing training for new workers. Training implementation should be necessary. In order to mitigate the effects of this barrier, this should include electronic procurement. The adoption of electronic procurement was hampered by a lack of adequate legal protections. Encouragement of official legal acknowledgment of electronic procurement transactions is necessary to overcome this barrier.

Additionally, as e-procurement systems rely significantly on Internet services, it's critical for the effective integration of e-procurement technology that the internet infrastructure be consistently improved. Thus, the government must ensure that there are no interruptions in the flow of the internet. Another obstacle to the usage of the internet is the high-cost internet data. Government enacts policies and structures to reduce the high cost of internet data charges. This will encourage many people to adopt and use the e-procurement system.

5.3.2 Impact of e-procurement on the sourcing function.

Due to the advantages, they offer in efficiency, it is advised that state institutions take on the responsibility of guaranteeing full implementation of e-sourcing systems, which allow for quick identification and contact with suppliers as well as customers.

5.3.3 Impact of e-procurement on the tendering function

A crucial step in the electronic procurement process is electronic tendering. An growth in electronic tendering results in a competitive tendering process that is distinct from the manual old processes and makes it simple to shortlist bids. Because it is computerized, the process is structured, information is readily available, and there is accountability. This has a favorable impact on the performance of the supply chain, which is significantly dependent on these procedures. As a result, electronic tendering significantly influences supply chain performance and raises supply chain performance. Therefore, the government should guarantee that it is utilized and accepted in all government entities.

5.3.4 Impact of e-procurement on supplier management and relationships

This study suggests that the management of all public sector institutions makes deliberate efforts to link the systems of the organizations and their suppliers, highlighting the system's benefits and establishing connections amongst all government entities. According to the study, data security in e-procurement systems is essential since government data is sensitive and orders and payments are legally binding. The e-procurement system must offer ways to identify and authenticate the user who submits the order in order to guarantee that the supplier can execute it without risk.

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APPENDIX

QUESTIONNAIRE

This questionnaire is part of a project work required by the Kwame Nkrumah University of Science and Technology, as a partial requirement for the award of a MSc in Procurement and Supply Chain Management. The questionnaire is designed to solicit your independent views on “**Assessing the effects of the adoption of e-procurement system in Ghana. A case study of ministry of communications and digitalisation**”. All information provided shall be treated as confidential and used strictly for academic purposes only. I thank you in advance for your co-operation.

SECTION A: Demographic Information

1. What is your gender? (a) Female [] (b) Male []
2. What age group do you belong to?
3. (a) Under 21 [] (b) 21 – 29 [] (c) 30 – 39 [] (d) 40 – 49 [] (e) 50 – 59 [] (f) 60 and above []
4. What is your highest level of education?
5. (a) No Formal Education [] (b) Up to JHS [] (c) SHS/SSS [] (d) Diploma/HND [] (e) First Degree [] (f) Master's Degree []
6. (g) Other (specify)
7. How long have you been working at the facility?
8. (a) Less than one year [] (b) 1 – 3 years [] (c) 4 – 6 years [] (d) 7 – 9 years [] (e) 10 years and above []

For the sections below, please indicate the extent to which you agree/disagree with each statement by placing a check (✓) in the right column under the 5 – point Likert Scale.

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5=Strongly Agree

SECTION B: The level of adoption of the e-procurement system in Ghana

Extent to Which E-Procurement is Used	1	2	3	4	5
E-procurement is good for all procurement processes at work					
I use the E-procurement platform regularly at work					
We use the E-procurement platform for all procurement processes					
The E-procurement platform is suitable for all procurement processes					
E-procurement is ideal for today's competitive business environment					
Performance Expectation	1	2	3	4	5
E-procurement enhances efficient and timely delivery of goods and services					
E-procurement improves work output especially processing of data and requests					
E-procurement enhances quality in delivery of services					
E-procurement reduces human errors in the procurement process					
With E-procurement I am able to do more at work saving time and effort					
Ease of Use	1	2	3	4	5
The e-procurement platform is easy to use					
The e-procurement platform requires advance IT skills to use					
The e-procurement platform requires extensive training to use it					
The e-procurement platform is difficult to navigate					
Its very frustrating using e-procurement platforms					
Social Influence	1	2	3	4	5
I use the e-procurement because that is what everyone is using					
I use the e-procurement because my organisation expects me to use					
My colleagues are using it and so I also use it					
Colleagues and friends influence your adoption of e-procurement					
Facilitating Conditions	1	2	3	4	5
I use it because I can access it everywhere					
I use e-procurement because it has a strong IT infrastructure and support base					
I use the e-procurement because my organisation has provided enough trainings on it					
I use the e-procurement because it is require by law					

SECTION C: The effect of e-procurement on the procurement function of sourcing

STATEMENTS	1	2	3	4	5
E-procurement has reduced corruption in sourcing					
procurement enhances quality goods and services in sourcing					
E-procurement enhances timely delivery of goods and services					
E-procurement enhances transparency in the sourcing of goods and services					
E-procurement improves accountability in sourcing for goods and services					
E-procurement enhances efficiency in the sourcing for goods and services					
E-procurement promotes value for money in sourcing goods and services					
E-procurement enhances effectiveness in the sourcing for goods and services					

SECTION D: The effect of e-procurement on the procurement function of tendering

STATEMENTS	1	2	3	4	5
E-procurement has the potential to reduce corruption in tendering					
E-procurement enhances transparency in the tendering process					
E-procurement improves fairness and accountability in tendering					
E-procurement enhances efficiency in the tendering process					
E-procurement promotes value for money in tendering					
E-procurement enhances effectiveness in the tendering					

SECTION E: The effect of e-procurement on the procurement function of supplier management

STATEMENTS	1	2	3	4	5
E-procurement has improved communication with suppliers					
E-procurement enhances easy access to suppliers					
E-procurement enhances timely feedback to suppliers					
E-procurement enhances transparency in managing suppliers					
E-procurement improves accountability to suppliers					