

**EXAMINE THE IMPACT OF E-PROCUREMENT SYSTEMS ON SUPPLY CHAIN
EFFICIENCY :A CASE STUDY AT KAMPALA CAPITAL CITY AUTHORITY**

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**A DISSERTATION SUBMITTED TO THE SCHOOL OF BUSINESS SCHOOL AT IN PARTIAL
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DECLARATION

I, Waibi Gerald Grace, hereby declare that this dissertation report entitled "Examine the impact of e-procurement systems on supply chain efficiency, a case study at Kampala Capital City Authority, "has never been submitted to any higher education institution for consideration for a scholarship or other academic purpose. I have also included references and used the work of other researchers.

Sign.....

Date.....10th/9/2024.....

APPROVAL

This is to confirm that the study titled "An Examination of the Impact of E-Procurement Systems on Supply Chain Efficiency: A Case Study of Kampala Capital City Authority," has been completed under my supervision and is now approved for submission to the School of Business at Uganda Christian University.

Sign..........Date..........

MR. KATISME NICSON

(Academic supervisor)

DEDICATION

This dissertation is especially devoted to my cherished family for their steadfast support, encouragement, and affection during my academic journey. Your sacrifices, counsel, and prayers have been my most invaluable reservoir of fortitude, and I am eternally appreciative of your being in my life.

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ABSTRACT.

Electronic procurement systems are highly significant aspect in business and they have affected a lot improving on supply chain efficiency in organizations situated in Kampala, Uganda. Through this research aimed to examine on the impact e-procurement systems on supply chain efficiency, this has been looked at in the background basing on global advancement through looking at how it has impacted organizations on a global land scale then on Africa level, East Africa and Uganda where we see how it was started to be integrated in various areas of the government easily at ministry of finance where it started from and spread to other ministries. The study looked at cost-effectiveness, and operational efficiency as one of the successes made by e-procurement. This study was conducted between April and August 2024, with a review of literature from 2019 to 2024, on the information of the organization in the study assessed various e-procurement techniques, including e-supplier management, e-invoicing, and e-payment and they have impacted on inventory management, cost reduction, risk management, supplier coordination, and lead times. Utilizing a qualitative approach through structured questionnaires given to procurement officers, supply chain managers, IT staff, and finance managers, the research found that e-invoicing and e-supplier management significantly improved procurement efficiency by reducing administrative overhead and enhancing supplier relationships. E-catalogues and electronic payment mechanisms, however, have had varying degrees of success. The findings imply that even if e-procurement technologies have, on the whole, increased supply chain efficiency, problems with adoption, employee resistance, and system integration still exist. Enhancing staff training, streamlining e-catalogues and e-tendering, resolving execution issues, and enhancing technology integration are among the recommendations. Future studies should examine the effects of future technologies like blockchain and artificial intelligence, the scalability of e-procurement in developing nations, difficulties facing SMEs, integration with corporate systems, and methods for guaranteeing data security and privacy-catalogues and electronic payment mechanisms, however, have had varying degrees of success. The findings imply that even if e-procurement technologies have, on the whole, increased supply chain efficiency, problems with adoption, employee resistance, and system integration still exist. Enhancing staffing levels, enhancing e-catalogues and e-tendering, and strengthening technological integration are among the suggestions

CHAPTER ONE

1.0 Introduction

This chapter presented the background of the study, the statement of the problem, the objectives of the study, research questions and the scope of the study as well as the significance of the study.

1.1 Background to the study

The globally E-procurement is part of the broader concept of information technology (IT), providing organizations opportunities to operate beyond traditional physical boundaries and occupy digital spaces (Gregor & Razor, 2005; Gunasekaran et al., 2009; Davila et al., 2003). The integration of e-procurement systems is considered to be an innovation strategy action (Mishra and Agarwal, 2010). In recent years, e-procurement has been advocated as a new strategic view of supply chain management (Nelson et al., 2002). The advent of e-procurement systems has revolutionized supply chain management on a global scale. These systems facilitate the electronic handling of procurement processes, enhancing transparency, efficiency, and cost-effectiveness across the supply chain (Croom & Brandon-Jones, 2007; Subramaniam & Shaw, 2002; Eadie et al., 2007). Organizations have embraced e-procurement to streamline their operations, foster better supplier relationships, and gain a competitive edge in the marketplace (Smith & Watson, 2023).

In Africa, the adoption of e-procurement systems is gaining momentum as governments and businesses recognize the benefits of digital transformation in procurement processes Sijaona, (2010). According to the study by Adebisi et al. (2018) emphasizes the positive impact of e-procurement on procurement processes, noting improvements in transparency and efficiency as key benefits. The Nigerian government has been actively promoting e-procurement to streamline procurement operations and reduce corruption challenges such as limited internet access, lack of skilled personnel, and resistance to change persist. Despite these challenges, there are notable success stories. For instance, countries like South Africa and Nigeria have made significant strides in implementing e-procurement systems to streamline government procurement and reduce costs (Gomez, 2023).

At the East Africa level, E-procurement adoption has driven regional integration initiatives and a push towards modernization. Governments in Kenya, Tanzania, and Rwanda have implemented e-procurement as documented by Makoba, Nyamagere, & Eliufoo (2017),

Tanzania, like any other country, strives to succeed in the electronic procurement system to improve organizational supply chain efficiency and effectiveness, which will influence transparency. These systems have helped mitigate risks associated with manual procurement processes, such as fraud, corruption and inefficiencies.

In Uganda, both the government and private sector are increasingly adopting e-procurement systems to improve supply chain efficiency. The Ugandan government has initiated several projects to integrate e-procurement into public procurement processes, this is aimed to enhance transparency and reduce costs. For example, the Electronic Government Procurement (e-GP) system, a web-based platform, covers the entire procurement lifecycle, ensuring a complete audit trail of all activities. This system is designed to increase efficiency, maximize value for money, and ensure accountability in public procurement (Ministry of ICT & National Guidance, 2021). The Public Procurement and Disposal of Public Assets Authority (PPDA) has also been instrumental in promoting e-procurement. Their efforts include the establishment of the Government Procurement Portal (GPP), which automates procurement processes, making it easier to monitor compliance and aggregate procurement data across various agencies (PPDA, 2021).

At the organizational level in Uganda, companies and public sectors are recognizing the benefits of e-procurement systems in improving supply chain efficiency. The adoption of e-procurement technology has been linked to enhanced transparency, reduced procurement-related costs, and increased efficiency in the procurement processes. For instance, research by Ahimbisibwe, Tusiime, and Tumuhairwe (2018) highlights that the move from manual to electronic procurement systems has helped mitigate the losses and inefficiencies traditionally associated with manual procurement methods.

1.2 Problem statement

The tremendous speed of change in technology and the increasing interconnection by information technology networks does not only demand organizations to be more flexible but also to be adaptive in the current business world. New evolutions in communication and information technology have become mandatory to all businesses worldwide. As a result, various strategies such as e-commerce and e-marketing have been adopted by many organizations to improve their competitiveness and efficiency in the supply chain, both internally and externally (Smith & Watson, 2023; Johnson et al., 2022). Procurement officers in many organizations have

adopted new strategies like e-auctioning and e-tendering in an attempt to achieve sound supply chain performance (Brown & Taylor, 2021). However, despite the adoption of these new technologies by many, such as the use of the internet to source for suppliers and purchase goods and services, many companies and firms have often proved to be much more selective than proactive (Miller & Davis, 2023). Although the adoption of e-procurement systems has eased the procurement process through cost reduction, increased service delivery, transaction speed, increased productivity, and elimination of paperwork, organizations are still not content with what has been accomplished. They continue to face high costs in procuring prices, maintaining E-Systems, frequent servicing of IT supporting systems, maintaining websites, and internet fees, all of which greatly impact the expected outcomes in services, contrary to the benefits envisaged by the organization on adopting e-procurement systems (Chen & Lee, 2022; Gomez, 2023).

1.3 General objective;

The impact of e-procurement systems on supply chain efficiency in the study context

1.4 Specific Objectives;

- i. To examine the different e-procurement techniques unitized by the organization in the study context
- ii. To examine the contribution of e-procurement systems on supply chain efficiency in the study context
- iii. To evaluate the relationship between e-procurement systems and supply chain efficiency in the study context

1.5 Research questions:

- i. What is the different e-procurement techniques unitized by the organization
- ii. What are the contributions of e-procurement systems on supply chain efficiency to the organization?
- iii. What is the relationship between e-procurement and supply chain efficiency to the organization?

1.6 Scope of the study:

1.6.1 Content scope;

The study aimed to investigate the impact of e-procurement systems on supply chain efficiency by examining how their application enhances organizational efficiency, identifying the critical

success factors for their adoption, and addressing the contribution in implementing these systems within large authorities. Focusing on staff in the procurement and IT departments, the research explored how these systems affect procurement processes and service delivery, given their direct involvement with e-procurement systems.

1.6.2 Geographical scope

The study was conducted in Uganda, specifically within various organizations located in central Kampala, the capital city. This was chosen due to the expectation that organizations in Kampala are at the forefront of adopting current technologies, including e-procurement systems, which are integral to modern service delivery and procurement functions.

1.6.3 Time scope

The study was conducted in a period of four months, from April to August 2024. This time frame was designed to comprehensively review literature and data from a broader period of five years, from 2019 to 2024. The selected duration allowed depth analysis of relevant materials and trends within the specified time frame.

1.7 Significance of the study:

1. The study was aimed to advance additional knowledge to the field of procurement especially in line with the topic of study, since the world has gone digital calling for embracing of new technological methods like the graduation from the manual ways of procurement systems to the new digital e-procurement systems that's is not only proving effective but also efficient.
2. The research presented reference for upcoming researchers and policy makers by adding on the existing literature in related studies. Many researchers can identify the different points of discussion after having some references on the current available research. This increased the available content for the future researchers.
3. The study helped the researchers to improve and build on their research skills as it involves digging into different sources of content and developments to secure enough information that can make such a good content. Hence to the skill acquired created confidence that can handle any kind of research.

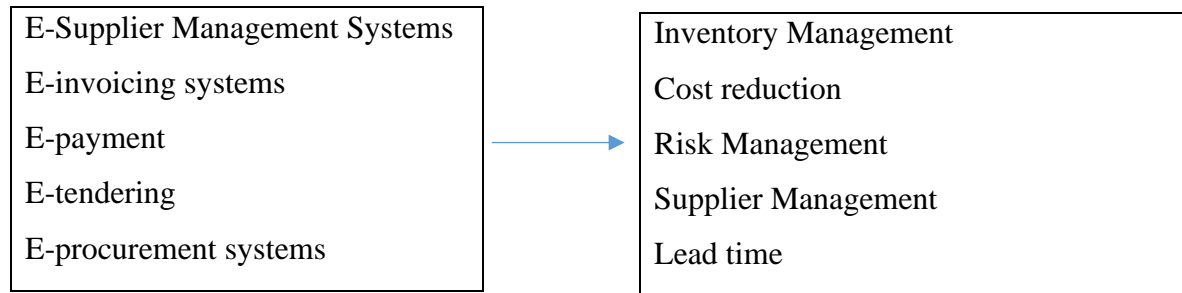
1.8 Conceptual framework

Independent variable

E-procurement systems

Dependent variable

supply chain efficiency



Source; Adopted from (Md Abdur Rashid and Mohammad Shorif Uddin 2021) and modified by the researcher

Figure 1.8 above showed the conceptual framework that illustrates e-procurement systems as the independent variables and supply chain efficiency as the dependent variable. The independent variables included e-supplier management systems, e-invoicing systems, e-payment, e-tendering, and e-procurement systems, while the dependent variables included inventory management, cost reduction, risk management, supplier management, and lead time (Brown & Taylor, 2021; Johnson et al., 2022). These e-procurement techniques influenced several key aspects of supply chain efficiency. By integrating these electronic systems, organizations can streamline their procurement processes, enhance coordination with suppliers, reduce costs, mitigate risks, and improve overall supply chain performance and efficiency (Chen & Lee, 2022; Gomez, 2023). The adoption of e-procurement systems is essential for modern supply chains to remain competitive and responsive in a rapidly changing technological landscape (Smith & Watson, 2023; Miller & Davis, 2023)

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed scholarly materials related to the impact of e-procurement systems on supply chain efficiency. It critically analyzed different perspectives to identify research gaps in the study variables. The literature reviewed objectively, starting with the definition of key concepts followed by a review of specific objectives. Sources such as academic journals, books, and credible online resources will be utilized.

2.1 Definition of Terms

2.1.1 E-Procurement Systems

E-procurement systems pertain to the utilization of digital techniques and instruments across the entire procurement procedure, ranging from need identification to payment and possibly even contract administration (Mose et al., 2020). According to Garrido et al. (2019), these solutions are intended to improve efficiency, lower costs, increase transparency, and streamline procurement procedures. E-catalogues, e-tendering, e-auctioning, and electronic purchase orders are typical elements of e-procurement systems (Walker & Brammer, 2021).

2.1.2 Supply Chain Efficiency

The term "supply chain efficiency" describes how well a chain uses its resources to provide goods and services on time and at a reasonable price. According to Li et al. (2018), it entails streamlining procedures to cut expenses, minimize waste, and reliably satisfy client expectations. Order accuracy, lead time, inventory turnover, and cost reduction are some of the critical performance metrics for supply chain efficiency (Gunasekaran et al., 2020).

2.2 E-Procurement Techniques Utilized by Organizations

E-procurement techniques refer to the several approaches and procedures that businesses use to organize and carry out their procurement operations online (Davila, Gupta, & Palmer, 2003). These methods entail the use of digital platforms and technologies to make it easier to buy products and services, expedite the procurement process, increase efficiency, lower prices, and improve transparency (Croom & Brandon-Jones, 2007). E-procurement methods encompass a broad range of electronic-based activities, including contract administration, supplier selection, tendering, invoicing, and more.

E-Tendering is the primary method used in the public sector to award contracts for commodities, works, and services, according to Geoffrey Rotich¹, Muma Benard, and Eunice Waruguru. Pre-qualification and registration of possible suppliers is the first step in the seven-stage general tendering procedure. After this phase, prospective vendors are invited to apply publicly. The public invitation comes first, then the submission of the tender, and finally the closing of the tender. Following the receipt of tenders, they are assessed and ranked according to pre-established criteria for tender evaluation, and the winning bid is subsequently awarded (CRC Construction. Innovation, 2006).

There are many advantages to e-tendering. According to CIPS (2006), the advantages include increased process efficiency, lower overhead costs, increased accountability and transparency in the procurement function, lower costs for ordering and holding, less paperwork, better cash flow, and lower expenses related to credit management. OGC (2009) states that e-tendering helps shorten the time it takes to complete tenders, improves adherence to legal requirements and procedures, lowers Labor costs and improves time management, and improves accuracy, transparency, and integrity in the procurement processes.

E-invoicing is a process through which a business sends and receives invoices through electronic means (Brun, 2008). According to Hernandez- Ortega (2011), an e-invoice enables a business to gather information pertaining to transactions and to transmit it through a network. The e-invoices enable the business to maintain business information throughout the supply chain and to enhance the authentication and non-repudiation of origin and receipt, confidentiality and privacy.

Several studies have proven the advantages of electronic invoicing. Chegugu and Yusuf (2017) examined the impact of electronic procurement procedures on an organization's performance. (As stated in the J. M. Mutunga and F. H. Makhamara Strategic Journals, p. 2)

As stated by Sebastian Bobowski and Jan Gola in the Asia-Pacific Journal of EU Studies, Vol. 17, No. 1. The disparity in e-invoice formats across the EU, which affects the expenses and intricacy of business operations, was addressed by the E-Invoicing Directive 2014/55/EU, which established a European standard for e-invoicing. Therefore, as long as national regulations are in effect, all contracting authorities must accept electronic invoices that adhere to the European format. The electronic invoicing was more affordable and easily navigable

Electronic payment refers to the replacement of products and services that are ordered online and are initiated, processed, and received virtually and electronically According to Raja et al. (2008). In order to ensure the legitimacy of the money being transferred, it involves the financier and beneficiary transmitting electronic money while a third party is present (Anand & Madhavan, 2000). Large organizations and businesses, particularly in Germany, are starting to accept electronic payments as standard practice. They have adjusted to the new requirements of electronic commerce, which include the usage of credit cards and smart card-based wallets. An essential component of electronic payments is security. Authorization, authentication, privacy, the integrity of the company, theft, and data corruption are among the problems that impact electronic payments (Heng, 2004). Wanjiku Nyokabi Ruth made this observation in his study on the integration of M-supplier management and organizational performance of parastatals in Nakuru County.

According to Oyugi George Joseph Ochieng and Dr. Kamaara Mary in the International Journal of Management and Business Research Volume 5, Issue, e-payments have become more and more popular recently due to their many benefits over traditional payment methods, such as greater cost-effectiveness, convenience, and security. Enhanced security stands out as a primary benefit of electronic payments. E-payments are often more secure than traditional payment methods because they employ advanced encryption and security techniques to protect the transfer of sensitive financial information. By using these security measures, fraud can be avoided and financial damage can be avoided for both buyers and sellers.

Electronic Supplier Management Systems involve utilizing information and communication technology (ICT) to monitor and evaluate supplier performance, enhance supplier diversity,

oversee insurance documentation, streamline supplier qualification processes, tailor vendor registration procedures, and consolidate supplier information for improved transparency and decision-making in selecting the most suitable suppliers (Choi, 2013; Fawcett, Magnan, & McCarter, 2008; Kocabasoglu & Suresh, 2006). E-supplier management comprises strategies such as supplier selection and evaluation, monitoring, supplier involvement and development. Supplier selection is the arbitrary method of selecting a supplier to acquire the needed products and services to support the functionality of the organization which requires various heads of multiple departments within the organization to select the most appropriate supplier (Davidrajuh, 2003). It is also the procedure where organizations find, assess and engage suppliers (Beil, 2009).

2.3 Contribution of E-Procurement Systems on Supply Chain Efficiency

In contemporary management, e-procurement technologies have been identified as revolutionary instruments in supply chains that bring remarkable improvements in the process. This study of the literature examines how e-procurement technologies enhance supply chain efficiency through the review of recent studies and academic publications. E-procurement systems are electronic platforms that make it simpler for businesses to buy goods and services (Croom & Brandon-Jones, 2007; Davila, Gupta, & Palmer, 2003). These systems facilitate the buying process through automating such activities as selecting suppliers, placing orders, and processing invoices (Smith, 2018). The importance of E-procurement lies in its potential to enhance supply chain efficiency by reducing transaction costs, improving procurement cycle times and increasing transparency in supplier relationships (Jones & Green,2020).

A good e-procurement system should be equipped with all the essentials, which buyers and sellers need to get sufficient data to interact with each other for example the production plan of each supplier. Buyers and suppliers should have access to each other's information as required, and the exchange should be host electronically for better functioning of E-procurement. E-Tendering, E-Request for Quotations, E-Auctions, E-Catalogues. And E-Invoicing are some of the most commonly practiced e-procurement systems used in procurement (Vaidya, Sajeev & Callender, 2006).

The implementation of e-procurement may be one of the prime factors that cause supply chain efficiency to be continually upgraded. In the procurement and supply chain automation systems, the first and the foremost objective is to eliminate human errors in all the processes. The main mechanisms of such a range of this effect are the use of machines, integrated E-procurement platforms, these being able to automatically produce purchase orders based on the predefined inventory levels and subsequent its variables like the stockouts, reducing inventory shrinkage and thereby improving inventory management (Brown, 2019). Even automation that is in the form of software-driven to make decisions (aided by humans) instead of human intervention can not only enhance operational efficiency but also allow the organization to reallocate resources among the supply chain.

Yet another advantage of e-procurement systems is raiding costs. The findings by Jones and Green (2020) in their study show that companies that utilize E-procurement as a primary way of resource management exhibit reduced procurement costs. The keys to such improvements are the diminution of paper usage, reduction of manual operations that take place during procurement, and the enhanced possibility of better negotiation terms with suppliers. Apart from these, e-procurement is attracting more companies because it brings better financial transparency to the process. However, one of the most ones is pudding jargons like e-procurement which is not another word from another language but a far-out word that could be synonymous with procurement.']

E-procurement has the capacity to increase financial transparency by means of the real-time exhibition of procurement and budget spending (White et al., 2021). This kind of transparency is that which a company can utilize to risk reporting it on cases that the company recognizes the opportunities to save money from suppliers. Negotiating lower prices with suppliers, which are cost-saving, in their turn, is one of the ways the implementation of e-procurement positively relates to supply chain efficiency. One big part supplier relationship management plays in the supply chain and consequently necessity of each organization to have a good machine for that is given to e-procurement systems.

E-procurement platforms the likes of electronically processing and tracking supplier invoices promote hassle-free communication between suppliers and buyers as Brown (2019) mentioned. Also, Brown found that E-procurement platforms allow companies to interact artlessly with suppliers and thus, have a real-time responsive supply chain. In other words, real-time collaborative systems enable suppliers to be connected to the demand and production planning processes, thereby, they can be able to promise shorter lead times and also own the agility of the supply chain. The approach also alleviates the issue of over-production that companies face by providing accurate data on what items will be in demand in the future (Smith, 2018).

From e-procurement applications, employees could be given the opportunity to carry out their own buying of items if cash is previously approved and with a required quantity, from a whole set of alternative sources, initially, the procurement office has defined for the lowest price and quality obtainable from a supplier, then eventually, submitting requisitions for the said goods, and checking on the status of delivery. (International Journal of Procurement Management, 2004). This having automated the system has made the procurement process fast and efficient while reducing the cost of the process. Further, the procurement department's employees can, later on, move the various low-level jobs out of their department and focus more on highly important tasks like getting into the negotiations of agreements. What is more, the tools with a large amount of the e-procurement applications software permits the leaders of procurement departments to customize the procurement experience. They can choose which items can be e-procurement only to which users (Journal of Supply Chain Management, 2011).

2.4 Relationship Between E-Procurement Systems and Supply Chain Efficiency

E-procurement systems are increasingly becoming a necessity in supply chain management practices and systems promising improved efficiency and effectiveness in different sectors. The objective of this literature review is to help in identifying gaps in existing knowledge and research particularly on how E-procurement systems relate to supply chain performance and efficiency. E-procurement systems have developed into multifunctional instruments extending from supplier database, contract management, order fulfilment and invoicing capabilities (Smith, 2018). Such developments indicate a growing trend towards the use of new technology in the management of supply chains in order to achieve operational efficiencies and cost reductions (Jones & Green, 2020).

Reducing human regression E- procurement systems also serve the purpose of expediting every system that can be computerized such as subscription activities cycle time. In their study, Brown (2019)'s work found out that the introduction of specific technologies to achieve the procurement processes enhances the fortunes of those organizations in terms of efficiency and time management. By implementing e- procurement, for instance, automated requisition workflows and electronic approval processes reduce the waiting time to perform procurement, thus allowing a company to manage inventory better and react quickly to changing demands (White et al., 2021).

Effective supplier management is vital to the improvement of the performance of the supply chain, and E-procurement systems make it possible to work with and communicate with suppliers. Brown (2019) concludes that E-procurement offers such facilities that facilitate real time interactions with suppliers and sharing of data thus strengthening the partnership and enhancing the supply chain management of the organisation. E-procurement systems that incorporate collaborative features allow suppliers to be actively involved in demand planning, production scheduling, and inventory control hence shortening lead-times and decreasing inventory costs (White et al., 2021). Such a dependency approach however requires trust in the supplier, better management of programs and general responsiveness to demand side changes in supply chain management capabilities (Jones & Green, 2020).

Even with numerous advantages, there are barriers to the adoption and practice of E-procurement systems. Companies have been known to encounter resistance when employees are trained on internal processes and structures of a company and change management and those users requires

to be effectively engaged in appropriate programs and training (Smith, 2018). Also, incorporating E-procurement systems into the current information technology system may be a daunting task and expensive, and may take time because of contributions needed from different departments (Brown, 2019). Moreover, E-procurement systems have improved the management of suppliers and negotiation skills, which in turn helps organizations in obtaining better pricing and terms which in turn optimizes procurement expenditure and reduces all round procurement expenses (White et al., 2021).

Most literature has demonstrated that B2B organizations employing E-procurement systems gain quantifiable benefits such as low transaction costs plus costs of procurement cycle time and effective management of cash flows (Jones and Green, 2020). Compliance with established budgetary conditions and obligations placed by these systems is also provided which contributes positively to the efficiency, effectiveness and manageable risk of the organization (Smith, 2018).

In order to achieve supply chain performance improvement, it is necessary to provide effective supplier relationship management. The system of E-procurement systems pleads that it is possible to keep in touch with the suppliers and even engage them. Brown (2019) states that E-procurement offers such facilities which allow suppliers to be in constant communication with the users of their products and the cooperation is further enhanced with data sharing that improves the supply chain management of the company. The collaborative E-procurement systems allow engagement of suppliers in the various processes thereby helping to enhance efficiency, reduce costs and shorten lead times and inventory holding costs (White et al., 2021). This collaboration will not only strengthen the supplier relationship but also will improve the supply chain structure by making it more agile and adaptive to the new market environment changes (Jones & Green, 2020).

Many benefits notwithstanding, the adoption and deployment of E-procurement systems come with intricacies. Organizations typically encounter staunch resistance from employees that are to the traditional procurement, thus along with training and change management strategies making them adopt (Smith, 2018). Additionally, tying E-procurement systems into the already established IT infrastructure might be challenging and expensive, hence it requires robust planning and communication between departments (Brown, 2019). Furthermore, security and data privacy constraints are also serious problems in many sectors where sensitive data passing is either handled or the companies are in a tightly regulated environment (Jones & Green, 2020). Overcoming these

hindrances involves both the organization's technological potential and organizational readiness to take up E-procurement systems effectively in a holistic approach.

E-procurement solutions enable supply chain efficiency through the process automation, cutting of costs, enhancing supplier relationships, and the growth of collaboration. Additionally, the integration with other business technologies is essential for transparency, flexibility, and adaptation (Croom & Brandon-Jones, 2017; Schoenherr & Tummala, 2018; Tas, 2019). Thus, it is important to address the challenges arising from the integration of the enterprise systems with the new technologies and the data security. One should carry out extensive research to find the most practical use of E-Procurement for the business environment and thereby gain an edge over competitors. In this context, the work of Tas and his colleagues (2019) describes versus the work of Croom & Brandon-Jones, 2017 and Schoenherr & Tummala, 2018. These challenges are not just a matter of buying the right software or the hardware that fits the needs but that companies have to make

2.5 Conclusion

The literature summary indicated that e-procurement systems can have a demonstrative impact on supply chain efficiency often related to automation, cost savings, and supplier relationship management. Despite the positive findings on e-procurement systems in terms of impact on supply chain efficiency, the literature identified research gaps. First, there are limited studies that examine long-term sustainability and scalability of e-procurement systems in the developing world, particularly where infrastructure and technology challenges still exist. Second, while many studies report on the benefits of e-procurement, they do not broadly explore e-procurement procurement implementation challenges and risks, specifically in small and medium sized enterprises (SMEs).

Third, the impact of emerging technologies on e-procurement systems and supply chain efficiency as a whole is an area of need to be addressed. Addressing this knowledge identified gaps will allow for the development of broader knowledge of e-procurement systems and their role in supply chain efficiency which can facilitate future grounded research and practice.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter outlined the methodology used in this study, detailing the research design, population and sampling techniques, data collection methods, data analysis instruments and ethical considerations.

3.1 Research Design

.1 Research

Design

The usage of e-procurement systems in the supply chain has been a study topic. Qualitative research was used to allow for a complete analysis of the impact of e-procurement on supply chain efficiency. Non-numerical data gathering was an aid to us to procure a deeper insight into the experiences and views of the parties involved in the procurement process at the company (Creswell & Poth, 2018). This research comprised of questionnaires with the main actors in procurement, such as procurement managers, IT staff, financial managers and suppliers, who were asked about their experience with different e-procurement techniques, the benefits of e-procurement, supply chain efficiency, and the association of e-procurement to supply chain efficiency (Bryman, 2016). The use of the open-ended questions allowed the participants immediately answers and shared them feelings, whether they were the ones acquainted with the digitalization to procure a solution out of the mentioned challenges (Patton, 2015). In addition to carrying out a focus group discussion with small groups among the procurement staff to identify shared themes and insights that were weak and did not come up from the individual (Krueger & Casey, 2015). Furthermore, the procurement report document, system log and policy document examination were included to gain a better understanding of the implementation and operation of e-procurement systems in the company, which also added some contextual information and supported the data received from questionnaire and focus group discussion (Bowen, 2009).

3.2 Population of the Study

The study population was 40, composed of procurement officers, supply chain managers, IT personnel, and finance managers from various organizations in central Kampala. These members were selected due to their direct association with, or being affected by, the implementation and operation of e-procurement systems (Onyango & Muturi, 2019; Achieng, 2020).

3.3 Sampling Technique

3.3.1 Sample Size

The sample size involved for the present study consisted of 36 participants. The rationale for this sample size is that it needed to be large enough for the study's findings to be statistically significant and to allow for nonresponse or incomplete data (Sample size determination using Krejcie and Morgan Table).

Table 3.1 Sample Size Distribution

Category	Population	Sample size	Sampling method
Procurement officers	12	10	Simple Random sampling
Supply chain managers	8	8	Simple Random sampling
IT personnel	8	8	Simple Random sampling
Financial Managers	12	10	Simple Random sampling
TOTAL	40	36	

3.3.2 Sampling Method

For this study, I used a simple random sampling method to ensure that every person within the target population had an equal opportunity to be selected. I chose a simple random sampling method after some consideration of the various sampling methods for its simple nature and its ability to generate unbiased findings in the selection process (Creswell, 2012). The sampling method started with defining the target population: subsequently, a sampling frame was developed by first compiling a list of all employees fitting the population criteria. Each individual within the list was assigned a unique number, and 40 individuals were selected through a random number generator. This mode of selection ensured that every individual had an equal probability of selection, and I was able to eliminate the potential of selection bias (Bryman, 2016).

3.4 Data Collection Methods

3.4.1 Primary Data

Primary data was collected using structured questionnaires

3.4.2 Questionnaires

Data was collected through a structured questionnaire which was administered to procurement officers, supply chain managers, personnel in IT and Finance. The questionnaire contained both closed and open-ended questions, to collect a combination of quantitative and qualitative data, which allowed to learn about the topic in-depth (Creswell, 2012; Patton, 2015). The mixed

methods approach allowed the collection of measurable quantitative data while also permitting the collection of richer qualitative data from the perspective of respondents.

3.5 Data Analysis

3.5.1 Quantitative Data Analysis

Quantitative data collected from the questionnaires was analyzed using both descriptive and inferential statistics. Descriptive statistics such as the frequencies, percentages, means and standard deviations will summarize the data (Field, 2018). For inferential statistics, correlation analysis and regression analysis were utilized to establish the nature of the relationship between e-procurement systems and supply chain efficiency (Pallant, 2020). All quantitative data was analyzed using the Statistical Package for Social Sciences (SPSS) (IBM Corp, 2019).

3.6 Ethical Considerations

The study adhered to ethical research principles, including informed consent, in which researchers informed participants the purpose of the study, their role and rights prior to obtaining signed, written consent from all participants (Creswell & Creswell, 2018). Confidentiality was employed in a manner that ensured participants identity and responses were confidential, and all data provided was anonymized, and respondents' data was anonymized (Babbie, 2020). The study also adhered to principles of respect for persons, including participants freedom to withdraw at any point of the study without repercussion of any sort (Diener & Crandall, 1978).

3.7 Limitations of the Study

Limitations to the study included potential response bias, when participants provided socially desirable responses or may not fully disclose information due to fear of possible repercussions (Podsakoff et al., 2003). Further, results of the study are generalizable to organizations in Uganda, specifically those located outside of the central Kampala region (Yin, 2018). Finally, technology constraints among participant provided additional limitation, as the extent of technological adoption and literacy among respondents affected response accuracy in relating to the e-procurement systems (Rogers, 2003).

CHAPTER FOUR

4.0 Introduction

This chapter presents the findings of the study and addresses the study objectives. The results are detailed in the sections that follow.

4.1 Response rate

Table 4.1: Response rate for questionnaires

Total Number of questionnaires	Number of Responses	Response Rate
36	36	100%

Table 4.2 presented the response rate of 100% in Table 1 indicates that all 36 questionnaires distributed were completed and returned. This is an exceptional result, reflecting a high level of engagement and interest from the respondents. Achieving a 100% response rate suggests that the survey or questionnaire was well-received, effectively administered, and possibly relevant to the participants, leading to their full participation. Such a high response rate can enhance the reliability and validity of the findings, as it implies that the sample accurately represents the population or group under study.

4.2. Demographic information of respondents

Understanding the demographic characteristics of respondents is crucial for interpreting the findings within the context of their backgrounds. This section provides insights into the gender, age, educational qualifications, departmental affiliations, and tenure of the respondents. These factors are important as they can influence perceptions and experiences related to the implementation and effectiveness of e-procurement systems.

4.2.1. Gender of respondents

Table 4.2: Gender of the respondents

GENDER	FREQUENCY	PERCENTAGE (%)
Male	20	55.6
Female	16	44.4
TOTAL	36	100

Source: primary data 2024

Interpretation; Findings in the above table 4.1 The gender distribution among the respondents showed a slight majority of males (55.6%) compared to females (44.4%). This indicated a

relatively balanced gender representation in the study, which ensured diverse perspectives on e-procurement systems. Insights from both genders were valuable in understanding how e-procurement systems were perceived and utilized by different user groups within the organization.

4.2.2 Age of Respondents

Table 4.3: Age Distribution of Respondent

Age Group	Frequency	Percentage (%)
18-35 years	15	41.7
36-45 years	10	27.8
46-59 years	8	22.2
60 and above	3	8.3
Total	36	100

Source: primary data 2024

Interpretation Table 4.2: Age Distribution of Respondent: The age distribution showed that most respondents (41.7%) were within the 18-35 years age bracket, suggesting that a relatively young workforce was involved in the procurement processes. This demographic was often more adaptable to technological changes, potentially influencing their positive reception of e-procurement systems. A smaller proportion of respondents were aged 60 and above (8.3%), which might have indicated a potential challenge for older employees in adapting to digital

4.2.3. Highest Education Level Attained

Table 4.4: Highest Education Level Attained

Education Level	Frequency	Percentage (%)
Secondary	2	5.6
Diploma	8	22.2
Bachelor Degree	15	41.7
Master Degree	10	27.8
PhD and Others	1	2.8
Total	36	100

Source: primary data 2024

Analysis of Findings of Table 4.3 Highest Level of Education: The data revealed that the highest level of education attained by the majority of the respondents was a bachelor's degree (41.7%). The second highest was a master's degree (27.8%), which shows that one-fourth of respondents possessed relevant knowledge and skills. Nearly the same percentage (22.2%) received a diploma, indicating a decent number of technical skills. The findings reported only 5.6% of the respondents with the minimum level of secondary education, resulting in very few respondents with a low educational status. While a few had reached the highest level of education there were far more respondents with practical and professional qualifications as indicated by the tiny percentage (2.8%) of respondents holding a PhD or other equivalent. This distribution indicates that the workforce has a relevant education to understand and apply e-procurement technology with some skill.

4.2.4 Department of Respondents

Table 4.5: Department of Respondents

Department	Frequency	Percentage (%)
Procurement/Logistics	10	27.8
Supply Chain Management	8	22.2
Finance	10	27.8
IT/Systems	8	22.2
Total	36	100

Source: primary data 2024

Table 4.4: Department of Respondents; Each department was reasonably represented, including, the departments of procurement/logistics and finance having the highest representation, accounting for 27.8% and 27.8%, respectively. Since employees from these departments were directly involved with financial transactions and procurement activities, they had context and, therefore, knowledge of e-procurement systems, making them more relevant. As these departments would have played critical roles to coordinate supply chain activities and integrating the systems, it is noteworthy that there were also responders from IT/Systems (22.2%) and Supply Chain Management (22.2%) departments. Since responders were rooted in departments that had both the end-user perspective for e-procurement and procurement involvement, the balanced representation ensured that the responses included to a limited extent the various perspectives on how e-procurement systems were utilized or impacted organization.

4.2.5. Years Spent in the Organization

Table 4.6: Years Spent in the Organization

Years in Organization	Frequency	Percentage (%)
Less than a year	6	16.7
1-3 years	12	33.3
4-6 years	8	22.2
7-9 years	7	19.4
10 and above	3	8.3
Total	36	100

Source: primary data 2024

The analysis of table 4.6 depicts the length of employment with the organization. More specifically, the results indicate that there is a wide distribution of experience levels of participants in the study that offered a clearer overall picture of the uptake and effects due to e-procurement systems. Quite a large percentage of the workforce (33.3 %) were at the organization from one to three years, meaning that many of the employees were relatively new. The contributions of these staff with their new skill set and perspectives were ideal for adapting new systems like e-procurement. Evaluating respondents seven to nine years' experience at the organization represented 19.4% of the workforce, while 22.2% of employees had four to six years-experience. These other respondents would be representative of many employees who had experienced the transition from traditional procurement to electronic procurement and who would be familiar with the procedures in the organization's procurement process. Another interesting contributor noted is that there were 16.7% of respondents who were at the organization for less than a year and could provide fresh insights that could identify areas for improvement that would perhaps not be possible for the more seasoned employees. Part of the workforce (8.3%) had been with the organization for greater than ten years, which provided historical context in addition to informing part of the workforce that procurement procedures had changed over the course of time. The consideration of multiple perspectives combined with the insights of the newer employees presented to be an overall fair and comprehensive evaluation of e-procurement processes and systems.

4.3. Findings on the Different E-Procurement Techniques Utilized by the organization

Table 4.7 presents findings on the different e-procurement techniques utilized by the organization through statistical measures such as mean and standard deviation.

Statement	Mean	Standard deviation
Our organization utilizes e-tendering as part of its procurement process.	3.55	1.22
E-invoicing is actively used to manage invoices within our procurement system.	3.89	1.15
Electronic payment methods are integrated into our procurement process.	3.08	1.36
E-supplier management systems are employed to manage supplier relationships and performance.	3.86	1.05
E-procurement techniques have reduced administrative overhead and paperwork.	4.08	1.19
Our organization has adopted e-catalogues to streamline the procurement process.	3.36	1.30

Source: primary data 2024

Table 4.7 shows how different e-procurement methods were used, with the mean scores and standard deviations reflecting how people felt about the methods used by the organization and their effectiveness.

First, most respondents noted agreement that e-invoicing and e-supplier management systems were used in the procurement process. Both techniques had fairly high mean scores of 3.89 and 3.86, meaning that most people thought both were effective and important parts of a procurement system of the organization. Additionally, the low standard deviations 1.15 and 1.05 suggested a strong consensus on their respective usefulness for managing invoices and relationships with suppliers.

Then, e-procurement used to reduce paperwork and administrative tasks has the highest mean score (4.08), and the highest standard deviation (1.19). This strong agreement indicates that respondents were in general agreement about e-procurement overcoming challenges associated with (and helping to reduce) paperwork and administration in procurement activities. This further illustrates the significance of e-procurement in improving the overall efficiency of the operations of the organization.

Furthermore, the data showed that integrating electronic methods of payments in the procurement process had a lower mean than the previously noted ratings (3.08), and a higher

standard deviation of 1.36. This indicated that people were less confident, or less in agreement about the integration of electronic payments in the functioning of the procurement process within this organization. Perhaps this degree of lower means and higher standard deviation indicated a need for better integration of these payment systems, in order to utilize the fullest activities of by integrating e-procurement

Next, E-tendering and use of e-catalogues had mean scores of 3.55 and 3.36, respectively. This implies that e-tendering, and e-catalogues are used, however, the each also implies additional work is needed in the uptake of these techniques in order to absolve the full benefit of the usefulness and effectiveness of procurement techniques, with the minimum degree of newness stress. Moreover, the standard deviations of e-tendering 1.22 and e-catalogue 1.30 suggested that participants cases and experiences on these methods differed.

In conclusion, the data indicates certain methods of e-procurement (e-invoicing, e-supplier management systems, reduce paperwork, competition, with appropriate assessment of business) were representing useful experiences or techniques resting on participants rating scores.

4.3. Contribution of E-Procurement Systems to Supply Chain Efficiency

Table 4.8 presents respondents' responses on Contribution of E-Procurement Systems to Supply Chain Efficiency at the study context through statistical measures such as mean and standard deviation.

Statement	Mean	Standard deviation
E-procurement systems have improved the efficiency of our procurement processes.	3.91	1.30
Automation through e-procurement has reduced transaction processing times.	4.28	1.03
E-procurement systems have contributed to cost savings in procurement.	4.25	0.93
Transparency in procurement processes has increased due to the implementation of e-procurement systems.	4.05	0.98
E-procurement systems have enhanced supplier relationship management in our organization.	4.11	1.09
Integration with other systems (e.g., ERP) has improved overall supply chain visibility.	3.86	1.15
Our organization has experienced improved inventory management due to e-procurement.	4.39	0.99
E-procurement systems have facilitated better financial control and budget management.	4.08	1.12

Source: Primary data 2024

As indicated in Table 4.8, the findings demonstrated respondents perceived e-procurement systems positively influenced supply chain efficiency in the organization. The first statement showed the respondents agreed that e-procurement systems made procurement processes more efficient, resulting in a mean of 3.91 and a standard deviation of 1.30. This finding indicated that most respondents interpreted e-procurement systems as making the procurement process more efficient, notwithstanding that some respondents perceived otherwise.

The second statement suggested e-procurement systems' automation reduced transaction processing time, with a mean of 4.28 and a lower standard deviation at 1.03 compared to the

other statements. The response for the second statement indicated there was a highly positive disposition that automating processes using e-procurement systems had positively reduced transaction processing time, which was a critical component for detecting supply chain efficiency.

In the same way, the third statement suggested that e-procurement systems had saved costs in procurement, reflected by a mean of 4.25, with a standard deviation of 0.93 for this statement. This finding indicated there was a strong perception from respondents that e-procurement had a positive influence on cost saving, specifically related to procurement costs, which is a variable contributing to organizational supply chain efficiency.

Further, respondents showing similar levels of agreement that e-procurement systems improved procurement transparency, returned a mean of 4.05 with a standard deviation of 0.98. This finding suggested respondents perceived e-procurement systems were making procurement processes more visible in relationships with suppliers which was a valuable feature for practicing accountability and fairness in the procurement process.

Additionally, respondents asserted that e-procurement systems had improved relationship management with suppliers, achieving a mean of 4.11 and a standard deviation of 1.09. This result indicated the e-procurement practice made advancing relationships with suppliers easier to accomplish, which both aided collaboration and improved supply chain efficiency overall.

The statement indicating the integration with other systems (i.e., ERP) would improve supply chain visibility achieved a mean of 3.86, with a standard deviation of 1.15. This nominal mean reflects that respondent generally agreed that the integration with other systems was beneficial synchrony, though dissenters indicated differences in findings that provided unintegrated challenges for supply chain visibility.

4.5. Findings on the Relationship Between E-Procurement Systems and Supply Chain Efficiency at study context

Table 4.9 presents key findings on the relationship between e-procurement systems and supply chain efficiency through statistical measures such as mean and standard deviation.

Statement	Mean	Standard deviation
E-procurement systems have significantly improved our supply chain responsiveness.	3.50	1.22
The use of e-procurement has reduced lead times in our supply chain operations.	3.22	1.28
E-procurement has led to measurable improvements in supply chain cost efficiency.	3.28	1.19
Our organization has encountered challenges in implementing e-procurement systems.	2.53	1.30
Security and data privacy issues have been effectively managed in our e-procurement systems.	3.44	1.26
Employee resistance to e-procurement systems has been adequately addressed.	2.89	1.24
The integration of e-procurement with existing IT infrastructure has been smooth.	3.39	1.21
E-procurement systems have helped in building stronger supplier partnerships.	3.39	1.14

Source: Primary data 2024

Table 4.9 presented data on point of view of respondents on linkulture views between e-procurement and Supply chain efficiency. Means and standards deviates detailed information representative of their views on elements of e-procurement system and impacts on supply chain performance.

All the responses in the summary suggested that respondents had an overall positive perspective towards e-procurement systems assisting with the improvement in supply chain efficiency of the organization. The summary item that had the highest mean score (3.50) responded that respondents tended to agree that e-procurement systems improved the speediness of the supply

chain to respond, in other words, the adding of the e-procurement system altered the organization's ability to quickly adapt to meet supply chain requests, contributing to overall efficiency.

Similarly, for the summary statement "Security and data privacy issues have been effectively managed in our e-procurement systems, the mean score was (3.44). This score, while somewhat lower in mean score than the, speediness of supply chain reminds us respondents believed there was adequate, if not strong, management of security, and privacy issues; which are key elements of e-procurement systems.

The data also derived information that there were some ratings where respondents saw margins of effectiveness for the use of e-procurement systems in their organizations, for example the summary statement "Our organization has encountered challenges in implementing e-procurement systems." The mean score for the statement was the lowest in amount, with a score of (2.53). This mean score suggests that respondents did not disagree, but did not tend to strongly agree that challenges were significant in the e-procurement systems. The inference in this comment would lend itself to assure the organization may have encountered challenges in the implementation process. While opportunities for improvements can be great, findings in this research study were not suggested as cumulative or full considerations of e-procurement systems - though significant findings should yield their anticipation.

The summary statement reveal that "Employee resistance to e-procurement systems has been adequately addressed" had a mean score of (2.89). This means and standard of deviation can suggest some disagreement and uncomfortableness among respondents regarding the organization addressing employee resistance to e-procurement systems. It suggests that resistance is still an appropriate suggest of consideration suggesting the organization might not fully realize all the advantages and possibilities for e-settings of specific e-procurement systems.

CHAPTER FIVE

5.0. Introduction

This chapter summarizes the findings of the study on the impact of e-procurement systems on supply chain efficiency in the study context. It begins with an overview of the results related to the study's objectives, followed by a discussion that integrates these findings with relevant literature. The chapter concludes with recommendations based on the study's results and suggests areas for further research.

5.1. Discussion of key findings.

5.1.1. E-Procurement Techniques Utilized by Organizations.

E-invoicing and e-supplier management systems were of great importance. Both techniques were well acknowledged and understood for their importance and effectiveness. Conversely, feedback around electronic methods of payment were not as positive, suggesting inconsistencies in relationships also highlighting areas in which improvement was needed. E-tendering and E-catalogues were also used, but not viewed as widely impacting with greater potential for uptake.

The review of e-procurement techniques identified productive areas and areas for improvement. Notably, e-invoicing and e-supplier management systems were highlighted as being both valued and integrated, demonstrating their success in invoice management and managing suppliers (Davila, Gupta, & Palmer, 2003; Croom & Brandon-Jones, 2007). The reduction of paperwork and administrative management processes required through e-procurement was very well valued for its effectiveness, contributing further to literature demonstrating e-procurement can reduce costs and administrative work (Brun, 2008; Chegugu & Yusuf, 2017). Electronic payment methods did not gain as much positive feedback; the implementation was dissatisfactory and there were variations in implementation, although the value of electronic payment methods for safety, and accuracy and efficiency were outlined in various literatures (Oyugi & Kamaara, 2020). The e-tendering and e-catalogue system also revealed variations of effectiveness and acceptance, and notions for better optimization were evident, even though the literature supports value in these types of e-procurement techniques (Geoffrey Rotich et al., 2006; Davidrajuh, 2003). Recommendations for improvement for e-procurement systems include richer integration for electronic payments, further optimization of e-tendering and e-catalogues, and continued training of procurement staff. The recommendation for monitoring and evaluation of e-procurement systems for both: further and effective address of individualized needs and further

operationalization of efficiency in the procurement systems, contradicted specific needs for organizations in general (Heng, 2004; Wanjik, 2020).

5.1.2. Contribution of E-Procurement Systems on Supply Chain Efficiency.

E-procurement systems have certainly contributed towards supply chain efficiency. They have been successful in both streamlining procurement processes, shortening transaction times, and creating cost savings. These systems have also enhanced transparency and supplier relationship management, and also produced significant improvements in inventory management and financial control. Although e-procurement systems have been highly beneficial, challenges remain, including the integration of e-procurement systems with other IT functions, which has been less successful.

An examination of e-procurement systems, based on literature, demonstrated appreciable contributions to supply chain efficiency. Research indicated that e-procurement technologies improve procurement efficiencies and costs, but also enhanced transparency (Croom & Brandon-Jones, 2007; Jones & Green, 2020); data supported these assessments having a positive effect on procurement processes. Moreover, the literature indicated that automation can lead to quicker transaction process time (Smith, 2018), therefore confirmed by data that automation leads to reduced transaction processing time as well as contributes to operational efficiencies and resource allocation (Brown, 2019). Benefits like cost reductions and larger levels of transparency and supplier relation management are similar to the literature review (Jones & Green, 2020; Brown, 2019). While I did capture that there are still issues of integration of e-procurement systems with other IT systems (like ERPs), as noted issues of integration were constant with having a mixed degree of satisfaction with system integration (International Journal of Procurement Management, 2004). Although, I did capture that enhanced inventory management and financial control were still significant improvements, as supported (Brown, 2019; Journal of Supply Chain Management, 2011). In conclusion, while e- procurement systems improved supply chain efficiency, they could be improved with IT integration.

5.1.3. Relationship Between E-Procurement Systems and Supply Chain Efficiency

The relationship between e-procurement systems and supply chain effectiveness was generally regarded positively, with minor challenges remaining. E-procurement systems increased responsiveness and effectively managed security and data privacy. Acknowledged concerns

regarding challenges for implementation or resistance from employees indicated an area for focus. The integration of e-procurement systems into existing IT systems proved beneficial and clashed with the experiences across different organizations, requiring ongoing work and additional improvements.

The relationship between e-procurement systems and supply chain efficiency showed similar insights to the literature, which suggests that e-procurement, particularly through automation and integration, aided in operational efficiency and responsiveness for supply chains (Smith, 2018; Jones & Green, 2020). The data showed e-procurement increased the speed in which the supply chain responded, while also aligning with research that enhanced awareness of e-procurement's role to develop supply chain agility (Brown, 2019; White et al., 2021). While security and data privacy management proved to be essential, and the literature significantly emphasized strong security measures for protecting sensitive information and capabilities to comply with regulations (Jones & Green, 2020; Smith, 2018). Further exposed concerns associated with challenges for implementation or resistance from employees conveyed important discoveries since they share very similar topics with the literature (Brown, 2019; Croom & Brandon-Jones, 2017). In the aggregate, the data supported the uses of e-procurement systems in providing benefits in regards to supply chain efficiency, yet, if there are goals of e-procurement being more effective in resolving implementation and user acceptance, it could further enhance effectiveness or utilization efficacy when just introducing e-procurement. Rather than relying on data for interpretations, further showcasing the recommendation of continued refinement of e-procurement for research and investigation into best practices for e-procurement systems would provide a reachable goal of enhancing success in supply chain with concepts likely to continue into development e-procurement in supply chains (Tas, 2019; Schoenherr & Tummala, 2018).

5.2. Conclusion

5.21: E-Procurement Techniques Utilized by Organizations

The research has established that organizations commonly utilized e-invoicing and e-supplier management systems, which are efficient and effective. The e-invoice capturing reduced paperwork, and enhanced administrative efficiency (Davila, Gupta, and Palmer, 2003; Croom & Brandon-Jones, 2007). The acceptance rate of the electronic payment methods was lower than expected and thus ambiguous and inconsistent use - Oyugi & Kamaara, 2020. Other methods indicated that e-tendering and e-catalogues were inadequately and under-utilized, indicating

inadequate management of these methods - Geoffrey Rotich et al., 2006; Davidrajuh, 2003. Overall, there were inconsistent findings on the trust in E-Procurement systems, particularly in payment systems indicating that this worth consideration in the future to maximize or optimize benefit from the E-Procurement approach.

5.2 2: Contribution of E-Procurement Systems on Supply Chain Efficiency

E-procurement systems generally contributed to supply chain efficiency, due to reduced time and surrounding processes associated with procuring services and products, increased efficiencies and cost reduction. Croom & Brandon-Jones, (2007); Smith, 2018. Activities surrounding the shipment processes from supplier helped create supplier relationships, with reference to inventory management and management of finance (Jones & Green, 2020; Brown, 2019). However, the limited scope of integration with e-procurement systems and existing IT; a combination of IT and Accounting systems - countries and staff habitually engaged with procurement process systems (International Journal of Procurement Management, 2004) suggest that better of e-procurement systems have limited use and benefit too procurement and supply chain overall. In summary, the e-procurement systems generally contributed to supply chain efficiency, but there needs to be a better synergy and integration with other IT products.

5.2.3 Relationship Between E-Procurement Systems and Supply Chain Efficiency

E- Procurement systems held significance to the generally positive impact on supply chain engendering greater responsiveness, security for efficiency in data privacy and collection processes (Jones & Green, 2020; Smith, 2018). E-procurement provided a speedy rate in promptly addressing changes to supply system, (enhancing supply chain functions), (Brown, 2019; White et al., 2021) however; countering barriers to initial system engagements incurred losses that reflect to date, yet acknowledging possible barriers for employee's system habituation for efficiency in optimization (Croom & Brandon-Jones, 2017). In conclusion, while e-procurement systems engendered supply chain efficiency, a predominate concern in first redundancies to initial objectives from legacies reflecting variations on recommendations from E-procurement systems for procurement, engendering future service worthy of significance to ease of upgrade pertinent to supply chain improvement.

5.3. Recommendations

Enhancements to electronic payments should be focused on improving integration by upgrading technology to be compatible, and standardizing payment processes for uniformity and reliability. It is important to select payment options that balance security with efficiency, while routinely receiving upgrades and maintenance will prevent issues and improve satisfaction. In addition, future training for employees on use standards for electronic payments will promote effective use.

E-tendering and e-catalogues should be reviewed to improve their effectiveness and increase acceptance. The review process would include assessing the existing platform to identify opportunities for improvement, the implementation of ease-of-use functionality in the interface, and integration with other e-procurement processes. Ongoing feedback from users will yield information about needed improvements and will drive further investments in systems to address existing issues and better align with the needs of the organization.

Training for staff in procurement will be essential for maximizing the advantages of e-procurement technologies. A formal training program that covers the current best practices and technologies designed to promote a staff that is both efficient and knowledgeable will help to maintain capability and confidence. Additionally, to further ensure functionality staff should be offered routine training, workshops, and updates for new technological features. Encouraging the use of support resources and foster the establishment of a learning culture will only further strengthen staff ability to use the system.

Taking actions that will give priority to improving compatibility and flexibility might help alleviate some challenges faced when trying to integrate the e-procurement systems with existing IT infrastructure. Such actions might include evaluating potentially problematic legacy systems before implementing e-procurement systems and potentially requiring a budget commitment for an updated compatible system for implementation. Ongoing evaluation of e-procurement systems and the processes through which they integrate performance will allow for prompt resolution of problems that arise periodically. The realization of a fully integrated e-procurement system will produce a seamless process and enhance data management across departments.

Establish methods that emphasize engagement and support to address implementation challenges and resistance from staff. Ensure that employees are active contributors in the implementation process. It is important that staff concerns are addressed and mitigated through effective communication and training leading up to implementation and continuing on during the process. Following go-live, sessions to support staff transition and staff knowledge should be one of the first deliverables, continuing the transition while alleviating implementation pressure.

5.4 Areas of further study

Several areas for additional research were determined in light of the literature evaluation. First, studies looked at the scalability and long-term sustainability of e-procurement systems in poor nations, where deployment was frequently hampered by issues with infrastructure and technology. This field of research was essential for comprehending the unique challenges encountered by these areas and for putting up suggestions for modifying and expanding e-procurement systems (Smith, 2018). Examining these issues could shed light on how to use e-procurement successfully in a variety of settings and maintain its sustainability over time.

Second, studies on the difficulties and dangers of e-procurement adoption in small and medium-sized businesses (SMEs) were required. This study attempted to investigate how SMEs' performance was affected by resource constraints and obstacles to technology adoption. Gaining an understanding of these obstacles was crucial to creating customized solutions that would enable SMEs to successfully adopt and use e-procurement systems (Jones & Green, 2020).

The effect of cutting-edge technology on supply chain efficiency and e-procurement systems, such blockchain and artificial intelligence, was another topic of attention. The goal of this domain's research was to evaluate how these cutting-edge technologies might improve or change the way that e-procurement is done now. In order to increase overall efficiency, this involved looking at the risks, rewards, and ways that new technologies could be incorporated into current processes (Brown, 2019).

Additional research was needed on integration with sophisticated enterprise systems like SCM and ERP. The best practices and challenges of integrating e-procurement systems with other enterprise technologies were the main topics of this study. Achieving seamless coordination and optimizing the advantages of networked systems required an understanding of these integration issues (White et al., 2021).

Finally, it was critical to solve the data privacy and security issues with e-procurement platforms, especially in sectors handling sensitive data. The goal of the research was to create strong security protocols and compliance plans to guard against fraud and data breaches. To ensure successful deployment and utilization of e-procurement systems, it was also required to look into efficient change management techniques and training initiatives to reduce employee resistance and improve staff adoption (Croom & Brandon-Jones, 2007).

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APPENDICES

Appendis 1 : Questionnaire

UGANDA CHRISTIAN UNIVERSITY

SCHOOL OF BUSINESS

QUESTIONNAIRE

Dear Respondent,

My name is Waibi Gerald Grace, with registration number J22B12/142. I am pursuing a Bachelor's degree in Procurement and Logistics Management at Uganda Christian University. For this research, I am examining the impact of e-procurement systems on supply chain efficiency, using Kampala Capital City Authority as my case study. I assure you that all data collected will be treated with complete confidentiality, as this research is strictly for academic purposes.

PART A: BACKGROUND INFORMATION

1. Gender:

Male:

Female:

2. Age:

18– 35 years 36-45 years 46-59 years 60 and above

3. Highest Education Level Attained:

Secondary:

Diploma

Bachelor Deg

Master Degree:

PhD, and Others:

4. Department:

Procurement/Logistics:

Supply Chain Management:

Finance:

IT/Systems:

5. Years Spent in the Organization:

Less than a year

1-3years

4-6years

7-9years

10 and above

PART B : E-Procurement Techniques Utilized.

Please indicate your level of agreement with the following statements using the scale 1 – 5:

1-Strongly disagree, 2-Disagree, 3-Not sure, 4-Agree, 5Strongly agree

Statement	SCALE				
	1	2	3	4	5
6. Our organization utilizes e-tendering as part of its procurement process.					
7. E-invoicing is actively used to manage invoices within our procurement system.					
8. Electronic payment methods are integrated into our procurement process.					
9. E-supplier management systems are employed to manage supplier relationships and performance.					
10. E-procurement techniques have reduced administrative overhead and paperwork.					
11. Our organization has adopted e-catalogues to streamline the procurement process.					

PART C: Contribution of E-Procurement Systems to Supply Chain Efficiency

Please indicate your level of agreement with the following statements using the scale 1 – 5

1-Strongly disagree, 2-Disagree, 3-Not sure, 4-Agree, 5Strongly agree

Statement	SCALE				
	1	2	3	4	5
12. E-procurement systems have improved the efficiency of our procurement processes.					
13. Automation through e-procurement has reduced transaction processing times.					
14. E-procurement systems have contributed to cost savings in procurement.					
15. Transparency in procurement processes has increased due to the implementation of e-procurement systems.					
16. E-procurement systems have enhanced supplier relationship management in our organization.					
17. Integration with other systems (e.g., ERP) has improved overall supply chain visibility.					
18. Our organization has experienced improved inventory management due to e-procurement.					
19. E-procurement systems have facilitated better financial control and budget management.					

PART D: Relationship Between E-Procurement Systems and Supply Chain Efficiency

Please indicate your level of agreement with the following statements using the scale 1 – 5

1-Strongly disagree, 2-Disagree, 3-Not sure, 4-Agree, 5Strongly agree

Statement	SCALE				
	1	2	3	4	5
20. E-procurement systems have significantly improved our supply chain responsiveness.					
21. The use of e-procurement has reduced lead times in our supply chain operations.					
22. E-procurement has led to measurable improvements in supply chain cost efficiency.					
23. Our organization has encountered challenges in implementing e-procurement systems.					
24. Security and data privacy issues have been effectively managed in our e-procurement systems.					
25. Employee resistance to e-procurement systems has been adequately addressed.					
26. The integration of e-procurement with existing IT infrastructure has been smooth.					
27. E-procurement systems have helped in building stronger supplier partnerships.					

Thank you very much for your time and participation.

APPENDIX 2: DATA COLLECTION LETTER



**UGANDA CHRISTIAN
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SCHOOL OF BUSINESS

19th Aug, 2024

TO WHOM IT MAY CONCERN

Name: **WAIBI GERALD GRACE**

Reg. No J22B12/142

A bachelor's student who is seeking permission from your office to collect data for her dissertation titled

The Impact Of Electronic Procurement Systems On Supply Chain Efficiency. A Case Study Of Kampala Capital City Authority

We shall be grateful if you could render assistance to her in collecting the necessary data for her dissertation

The Uganda Christian University School of Business thanks you in advance

.....
Mukisa Simon Peter
Research coordinator

A Centre of Excellence in the Heart of Africa

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