

INVESTIGATING CONSTRAINTS TO E-PROCUREMENT IMPLEMENTATION AT ABRAH SHOPPING CENTRE, MBALE

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

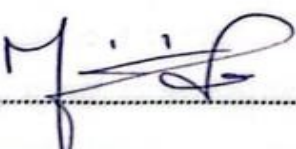
I, MUSUNGU SIMON, declare that this dissertation with the title "Investigating Constraints to E-Procurement Implementation at Abrah Shopping Centre, Mbale." is my original work and has not been presented for a degree or any other academic award in any University or Institution of learning.

Signature: MUSUNGU SIMON Date: 1st June 2020

MUSUNGU SIMON

APPROVAL

This is to certify that the research report by Musungu Simon, Registration Number M23B12/068, entitled "Investigating Constraints to E-Procurement Implementation at Abrah Shopping Centre, Mbale.", has been carried out under my supervision and is hereby approved for submission to the School of Business in partial fulfilment of the requirements for the award of the Bachelor of Procurement and Logistics Management degree of Uganda Christian University.

Signature:  Date: 13th/05/2025

MR. KABANDA MARTIN

DEDICATION

This dissertation is dedicated to my parents for their unwavering financial and moral support, and for being a pillar of strength and encouragement throughout my academic journey. May god richly bless you for all you have done for me through thick and thin. This dissertation is also dedicated to all my siblings and friends for their love, care, and prayers during the pursuit of this academic goal

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ABSTRACT

This study examined e-procurement implementation constraints and their effect on procurement performance at Abrah Shopping Centre, Mbale, using a census of 24 respondents (21 returned, 84%). ICT barriers, especially high equipment costs, software incompatibility, and poor connectivity, and organisational barriers, particularly setup costs, financial limitations, and staff fear of automation, were the dominant constraints. E-procurement adoption, It is only moderate as basic electronic ordering is gaining more momentum as compared to digital supplier sourcing. The overall performance is only moderate but respondents are confident that when constraint is resolved performance will be improved. Correlation analysis showed moderately strong relationship between both type of constraint and performance ($r=0.423$, $r=0.371$). Study recommended investment in ICT in stages, policy for e-procurement to formal, change management for the staff and government support in a structured way for private retail businesses in regional cities.

LIST OF ABBREVIATIONS / ACRONYMS

Abbreviation	Full Meaning
COMESA	Common Market for Eastern and Southern Africa
CVI	Content Validity Index
DOI	Diffusion of Innovations
e-GP	Electronic Government Procurement
e-procurement	Electronic Procurement
ICT	Information and Communication Technology
MIS	Management Information Systems
NWSC	National Water and Sewerage Corporation
PEOU	Perceived Ease of Use
PPDA	Public Procurement and Disposal of Public Assets Authority
PU	Perceived Usefulness
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
TOE	Technology-Organisation-Environment
UCU	Uganda Christian University

CHAPTER ONE

INTRODUCTION

1.0 Introduction

In this chapter, background of the study, problem statement, purpose of the study, objectives of the study, research questions, conceptual frame work, scope of the study and the definition of terms have been included. This forms the framework for the entire study.

1.1 Background of the study

The transformation of organizational processes through the digital medium globally has greatly changed how items and services are procured, ordered and how they are paid for. E-procurement is among the most influential trends in the supply chain management which have aided firms to carry out all procurement transactions through internet technology, to automate and increase the efficiency of transaction processes (Neupane, Soar, Vaidya&Yong, 2012). It helps organizations decrease cost of transaction, reduces procurement lead time, improves procurement transparency, and supplier relationships, making e-procurement an essential component in today's business world (Kadhila, Asa, Nautwima& Johannes, 2024).

At continental level, most of the African countries are gradually adopting the e-procurement due to the global development agenda such as sustainable development goals (SDGs) and the influence of organizations such as Common Market for Eastern and Southern Africa (COMESA) (Mukama, 2025). Countries like Kenya, Rwanda, and Ghana are reported to be among the best performing countries in adoption of digital procurement in the public sector with improvement in procurement transparency and reduction of procurement lead time (Mbabazi, Nkurunziza&Twinomujuni, 2025). However, the implementation problems still exist, particularly in developing economies, with factors such as lack of appropriate institutional structure, poor infrastructure and human resources being predominant.

The Electronic Government Procurement (e-GP) system in Uganda, a creation of the Public Procurement and Disposal of Public Assets Authority (PPDA), was designed as a solution to the limitations of paper-based procurement. Following a successful pilot program, launched in July 2021

with 11 entities (Apio&Asiimwe, 2024), the system has now rolled out to 36 registered entities. However, the implementation process has been plagued with various issues such as poor internet connectivity, limited digital knowledge among procurement officials, resistance to change, and budget constraints (Mbabazi et al., 2025; Abaine, Nagitta, Masolo&Obicci, 2024). It has been identified that the gap between policy and implementation of e-procurement is significant and greater in the private sector where less attention is given to e-procurement (Ndawula, 2024).

In Eastern Uganda, privately owned retail outlets such as Abrah Shopping Centre in Mbale are crucial players in the economy. Though they are faced with the task of integrating their procurement systems towards digital modes, Abrah Shopping Centre primarily utilizes manual procurement processes. There is limited empirical information available concerning the barriers that impede the implementation of e-procurement in this particular private retail context, thus management cannot determine clear paths for transformation towards digital procurement. This study was developed to fill this gap by empirically analyzing the barriers to e-procurement implementation at Abrah Shopping Centre, Mbale.

1.2 Problem Statement

E-procurement holds significant benefits of achieving lower cost efficiencies, speed and rapidity, transparency and increased supplier relation quality in the retail industry where competitive firms are to respond fast, quickly and cheaply in a globalized world market (Kadhila et al., 2024). Globally, and in Africa at large, adoption of e-procurement has shown improved procurement performance, lower transaction costs and greater accountability in an organization (Mukama, 2025; Sambou, 2025). In Uganda however, the adoption of e-procurement, especially in the private sector, is low and inconsistent, with firms still practicing manual procurement methods, which are time-consuming, slow and susceptible to fraud (Apio & Asiimwe, 2024; Ndawula, 2024). For example, Abrah Shopping Centre located in Mbale, despite being an operation in the retail industry where procurement speed and quality affect competitive advantage and customer satisfaction, has not fully moved to e-procurement. Instead, the firms operating in Abrah Shopping Centre are faced with a number of factors blocking their move to digital procurement systems which include technological, organizational and environmental barriers. Among others are lack of ICT infrastructure, the digital skills of procurement personnel, poor management support, lack of money and also lack of readiness on suppliers part (Abaine et al., 2024; Jama, Mwanza & Mwanaumo, 2025). However, the actual existence, the extent and cumulative influence of these various constraints have not been empirically assessed.

Without a clear understanding of the specific constraints and their effects on procurement

performance at Abrah Shopping Centre, it is impossible for management, policymakers, or development partners to design targeted interventions. This study therefore sought to investigate the constraints to e-procurement implementation and their relationship with procurement performance at Abrah Shopping Centre, Mbale, with a view to generating practical, context-specific recommendations.

1.3 Purpose of the Study

The purpose of the study was to investigate the constraints to e-procurement implementation and their relationship with procurement performance at Abrah Shopping Centre, Mbale.

1.4 Specific Objectives of the Study

- i. To examine the effect of ICT infrastructure constraints on e-procurement implementation at Abrah Shopping Centre, Mbale.
- ii. To assess the effect of organisational factors on e-procurement implementation at Abrah Shopping Centre, Mbale.
- iii. To establish the relationship between e-procurement implementation constraints and procurement performance at Abrah Shopping Centre, Mbale.

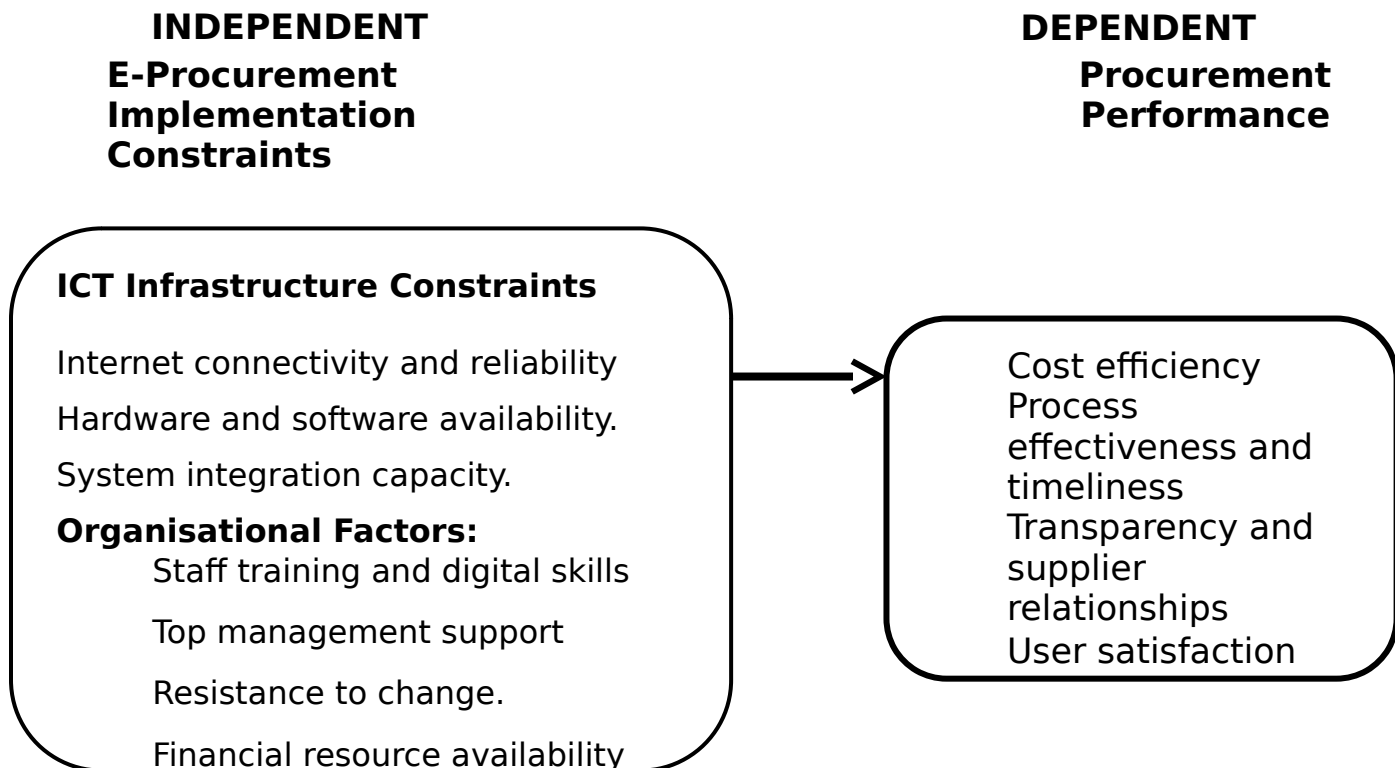
1.5 Research Questions

- i. What is the effect of ICT infrastructure constraints on e-procurement implementation at Abrah Shopping Centre, Mbale?
- ii. What is the effect of organisational factors on e-procurement implementation at Abrah Shopping Centre, Mbale?
- iii. What is the relationship between e-procurement implementation constraints and procurement performance at Abrah Shopping Centre, Mbale?

1.6 Conceptual Framework

The study was guided by a conceptual framework illustrating the relationship between the independent variable of e-procurement implementation constraints and the dependent variable of procurement performance. The framework is adapted from the Technology Acceptance Model (TAM) (Davis, 1989) and the Diffusion of Innovations (DOI) theory (Rogers, 2003), as applied in e-procurement literature (Kadhila et al., 2024; Mukama, 2025).

Figure 1: Conceptual Framework



Source: Adapted from Davis (1989); Rogers (2003); Kadhila et al. (2024)

From the conceptual framework above, it should be noted that e-procurement implementation constraints (ICT infrastructure and organisational factors) form the independent variable, while procurement performance constitutes the dependent variable. It is hypothesized that persistent ICT infrastructure and organisational constraints hinder effective e-procurement implementation, which in turn negatively affects procurement performance at Abrah Shopping Centre.

1.7 Significance of the Study

The findings will be a basis for future research on e-procurement adoption within similar mid-sized private retail settings in Uganda and Sub-Saharan Africa. For the managers and employees at Abrah Shopping Centre the findings will help in diagnosing barriers to adoption and enable them to develop interventions that can enhance the center's digital procurement capability. For policymakers and regulatory bodies like the PPDA and the Ministry of ICT, the study can offer valuable insights on e-procurement in the private sector in eastern Uganda, which can assist them in formulating enabling policies, subsidies and capacity-building programs aimed at speeding up e-procurement adoption in the

private sector. For development partners the results of the study are a basis for designing effective technical assistance to retail enterprises in Mbale and similar towns in Uganda.

1.8 Scope of the Study

1.8.1 Content scope

The study investigated the constraints on e-procurement implementation at Abrah Shopping Centre in Mbale, Uganda. It examined the effect of ICT infrastructure (internet connectivity, hardware and software, system integration) and organizational constraints (training, management support, resistance to change, and financial resources) on e-procurement implementation, and its subsequent impact on procurement performance outcomes including cost efficiency, process efficiency, transparency, supplier relationships and user satisfaction.

1.8.2 Time scope

The study period was from 2019-2025. This was considered enough time to capture both pre-COVID-19 baseline and post-COVID-19 digital transformation trends, which influenced the perceptions of organizations towards adoption of digital procurement. Data was collected in November and December 2025.

1.8.3 Geographical scope

The study was conducted at Abrah Shopping Centre located in Mbale, Uganda. Mbale was chosen to represent a mid-sized private retail operation in eastern Uganda, where the use of e-procurement has been a new phenomenon, and faces specific challenges such as limited ICT infrastructure, lack of readiness of suppliers, and shortage of procurement skills.

1.9 Definition of Key Terms

E-Procurement: E-procurement involves using digital technology and the Internet to facilitate the whole purchasing process of goods, services and works starting from searching of suppliers to ordering, receiving goods, and payment(Mbabazi et al. 2025, Kadhila et al. 2024).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews relevant literature on the constraints to e-procurement implementation and their relationship with procurement performance. It is structured to reflect the specific objectives of the study by reviewing theoretical frameworks applicable to e-procurement adoption, the effect of ICT infrastructure constraints on e-procurement implementation, the effect of organisational factors on e-procurement implementation, and the relationship between e-procurement constraints and procurement performance. The review further identifies gaps in the existing literature to justify the present study.

2.1 Theoretical Framework

2.1.1 *Technology Acceptance Model (TAM)*

The Research is based mainly on the Technology Acceptance Model (TAM) developed by Fred Davis in 1989. TAM is a well accepted theory for analysing and predicting users' acceptance and use of information technology systems. According to the model, the overall attitude of an individual toward a technology (PU, PEOU), and his or her intention to use a technology are the two most important factors that shape his or her attitude towards the technology (Davis, 1989). Perceived usefulness is the extent to which a user thinks that the use of a specific system will enhance their job performance and perceived ease of use is the extent to which a user believes that the use of the system will require no mental and/or physical effort.

TAM is very relevant to this study, since it offers comprehensive theoretical underpinning to explain the rationale behind the reluctance or willingness of procurement personnel to use e-procurement systems at Abrah Shopping Centre. If procurement officers find e-procurement complex and difficult to use (low PEOU) or believe that it does not directly help them in their work (low PU), they will likely not adopt it, thereby limiting the extent of implementation (Kadhila et al., 2024; Mukama, 2025). The model makes a number of Assumptions of the model are: User attitudes influenced by PU and PEOU impact on behavioural intention and use behavior. This model has been applied extensively in e-procurement adoption studies in developing countries, specifically in Africa, where the infrastructure constraints and lack of digital literacy usually leads to lower PEOU and low adoption rate (Apio&Asiimwe, 2024;

Ndawula, 2024). However, TAM was criticized as it only focused on individuals while ignoring individual organization and environment which affect adoption in institutional contexts (Venkatesh, Morris, Davis & Davis, 2003). Notwithstanding, TAM is still the most cited model used in e-procurement adoption studies and its perceived usefulness and perceived ease of use aspects relate closely with the variables (ICT infrastructure and organization factor) considered in this study. Alongside the TAM, the Diffusion of Innovations (DOI) theory (Rogers, 2003) and the Technology-Organisation-Environment (TOE) framework were used. Diffusion of Innovations theory was developed by Everett Rogers (2003) in which five characteristics of innovation influence the diffusion process. These are relative advantage, compatibility, complexity, trialability, and observability. These characteristics were applied in the literature to explain adoption behavior on e-procurement; Kadhila et al. (2024) used DOI on the adoption of e-procurement in Sub-Saharan Africa and indicated that perceived high relative advantage, compatibility with the firms' operations processes, were strong indicators of sustained e-procurement adoption beyond the trial phase while lack of them leads to low adoption rate. Mukama (2025) supported this finding on e-procurement adoption across the COMESA member states and indicated that perceived complexity had the strongest negative effect on adoption rate as many organizations were not equipped with required knowledge and skills to effectively use it, especially for organizations that lacked digital literacy. Technology-Organisation-Environment (TOE) framework was originally proposed by Tornatzky and Fleischer (1990) to present a multi-level context of technology adoption. The framework suggests three types of influencing contexts; Technological context, which refers to the availability of intra and external technology within an organization, Organization context which covers the characteristics of an organization, such as organizational size, management structure, and availability of resources and the Environment context which covers the firm's industry type, competitive environment, as well as government policies, regulations. The research indicated that technological, organizational and environmental factors had a direct significant impact on the intention to adopt e-procurement, however environmental context was found to be the weakest factor (Jama, Mwanza & Mwanaumo, 2025). A study in Uganda, by Abaine et al. (2024) using TOE found out that the environment (regulatory framework and external supplier system) created constraints that organizational factor could not overcome. TAM, DOI and TOE were integrated in this study in order to provide an integrated framework for examining e-procurement adoption factors at Abrah Shopping Centre.

2.2 Effect of ICT Infrastructure Constraints on E-Procurement Implementation

The term ICT infrastructure refers to the technological environment within which e-procurement system works. Quality and availability of the internet, hardware, software and digital integration facilities defines

the feasibility of e-procurement adoption. Abundant literature has indicated that lack of appropriate ICT infrastructure is the most cited factor affecting the adoption of e-procurement across public and private organizations of developing countries (Apio&Asiimwe, 2024; Mukama, 2025). Apio and Asiimwe (2024) analyzed challenges of electronic Government procurement (e-GP) in Uganda and identified a lack of effective Internet connectivity and network infrastructure as one of the most significant barriers that affected implementation of e-GP. Many procurement organizations found problems with their slow internet access and unstable network especially in regions outside Kampala which inhibited real-time bidding, e-invoicing and communication with suppliers. Similarly Mbabazi, Nkurunziza and Twinomujuni (2025) established that lack of an adequate ICT infrastructure in rural and peri-urban areas of Uganda due to scarcity of fast Internet access and aged hardware limited e-procurement adoption by both public and private sector organizations in both areas; private sector organizations were specifically disadvantaged as they could not afford to cover the costs of ICT infrastructure upgrades. Internationally, Mukama (2025) carried out a study on the obstacles in implementing e-procurement systems among COMESA countries and found that inadequate ICT infrastructure explain a substantial percentage of the variance in e-procurement implementation levels. The study also highlighted hardware and software gaps such as use of outdated computers unable to support the latest e-procurement systems, lack of uninterrupted power supply (UPS) and no integration of the existing legacy enterprise systems with new e-procurement platform. These findings were supported by Jama, Mwanza and Mwanaumo (2025) in a study on SMEs in South Sudan; their findings indicated that there was absence of a functional technological ecosystem which resulted in it being too risky for SMEs to adopt e-procurement (individuals businesses operating at Abrah Shopping Center largely falls into this category). Kadhila, Asa, Nautwima and Johannes (2024) have added that in Sub-Saharan African public sector the implementation of e-procurement leads to suboptimal outcomes and limited adoption due to what they term a 'design-reality gap'; this arises when there is a mismatch between the system requirements and reality of ICT infrastructure in the implementing organization. Similarly Makokha and Mutua (2025) had earlier observed that weak ICT infrastructure diminished compliance rates of those forced to use e-procurement systems, thus reverting them to hybrid or manual systems when there was a failure of the internet network. For retail businesses like those at Abrah Shopping Center in Mbale, where internet connectivity is less reliable compared to Kampala and upgrading is economically unattainable for individual businesses, such issues of ICT infrastructure limit scope and reliability of e-procurement systems. In recent literature, reliable power supply has gained more attention as one of the ICT infrastructure constraints that has been consistently ignored, especially in the developing countries. In The Gambia's public sector e-procurement implementation process, Sambou (2025) observed that power instability

contributed to system unreliability and failure and procurement officers, by choice or by design, resorted to manual procurement processes and lost confidence in e-procurement system performance. These results are consistent with those from Uganda where Apio and Asiimwe (2024) reported of power instability coupled with high cost of an UPS system as one of the main worries procurement officials faced when operating the e-GP system, particularly in district towns such as Mbale. Recent empirical literature also highlights concerns over data security and digital trust as factors in ICT infrastructure constraints. Neupane, Soar, Vaidya and Yong (2012) noted that partial e-procurement adoption due to infra-structural constraints would even bring down data security risks since they could lead to hybrid manual-digital environments where checking system's data integrity is cumbersome. This finding is reinforced by Makokha and Mutua (2025) who found that government officials who encountered systems security incidents are significantly less likely to trust the system and engage in the adoption of e-procurement systems even if adequate infra-structure were to be in place. For an individual business such as those operating in Abrah Shopping Center, there is likelihood of having non-existence of dedicated personnel for IT security and non-existence of formal data protection agreements between business organizations and technology providers. Interoperability of system compounds the issues of ICT infrastructure constraint in a complex system such as procurement. Mbabazi et al. (2025) discovered that even when individual system components or modules within e-procurement systems work perfectly, their lack of proper integration between procurement, inventory and accounting systems creates data siloes that requires manual cross checks of data and thus nullifying gains in efficiency and hindering continuous use of system. For an entity like Abrah Shopping Center, this is particularly an important constraint considering the nature of business-multiple vendors and high transaction volume.

2.3 Organizational Factors Influencing E-procurement Implementation

Beyond ICT infrastructure, there is a set of organizational factors which strongly influence successful implementation of e-procurement within an organization. These include employee skill and knowledge; top management support; resistance to change; and availability of money to purchase the system and maintain it (Abaine et al., 2024; Kuruneru, 2025). Abaine et al. (2024) in a study in Uganda found out that resistance to change among employees and officials was one of the primary organizational factors negatively influencing e-procurement implementation; their study revealed that procurement officials who had been working using the manual system could view the e-procurement systems as threats to their established routine leading to a cultural barrier toward e-procurement adoption even when it had appropriate ICT infrastructure. Similar results were found by Namagembe (2025) in a study about National Water and Sewerage Corporation in Uganda, where employees without proper ICT skills displayed low e-procurement system adoption and therefore the system became less effective as procurement tool. Ndawula (2024) identified lack of management

support as a defining organizational obstacle for e-procurement adoption by SMEs in Nakawa Division in Uganda; in cases where the senior management was oblivious of the necessity for e-procurement system, finance and personnel were neither allocated for training, implementation nor the system was bought. Nantege (2025) found that lack of management commitment among state-owned corporations in Uganda meant lack of financial resources to implement and maintain e-procurement systems leading to continued use of manual tendering processes although e-procurement was introduced as mandated by law. Jama, Mwanza and Mwanaumo (2025) in their study of e-procurement adoption among SMEs in South Sudan identified financial constraints as the most critical organizational obstacle due to high upfront costs, system subscription fees and training costs involved in purchasing and implementing a fully operational e-procurement system. Kuruneri (2025) observed similar patterns in Botswana's public sector whereby lack of funds hindered the sustained use of and adequate maintenance for the digital procurement systems thereby making system use inconsistent leading to periods of purchase and no usage

In addition to ICT infrastructure, various organizational factors influence the successful implementation of e-procurement in a business environment. These include the level of procurement employees' digital literacy and training, extent of top management commitment, employee and management resistance to change, availability of funds, financial support for adoption and maintenance of the system (Abaine et al., 2024; Kuruneri, 2025).

Abaine et al. (2024) identified the impact of change management on e-procurement reforms in Uganda and claimed that resistance to change among employees and procurement officers was a major organizational constraint to implementation success. This finding was due to the fact that employees were likely to see e-procurement systems as a threat to traditional ways of work and were likely to be against the implementation because they would be perceived as threatening the established work practices, resulting in inertia in adoption even where the required infrastructure was in place. Namagembe (2025) supported this in Ugandan public sector context, claiming that the lack of digital literacy of employees at the National Water and Sewerage Corporation was responsible for a low adoption of e-procurement systems. Ndawula (2024) found in a study on SMEs in Nakawa Division in Uganda that lack of top management support was a defining organizational constraint of e-procurement adoption, where senior managers only thought e-procurement as a voluntary IT development, so financial resources and human capital were not invested in its adoption, leading to incomplete adoption. Nantege (2025) also found that lack of management support at the state-owned corporations led to less budgetary support for training and

system adoption, which meant that manual procurement practices dominated even after an official implementation of the e-procurement system.

Jama et al. (2025) found that financial constraints were an acute organizational barrier to e-procurement adoption for SMEs in South Sudan due to high initial costs of buying and training in the system, ongoing subscription costs and other maintenance fees that made full adoption impossible for most SMEs. A similar pattern was reported in Botswana's public sector by Kuruneri (2025) who reported limited budget for the e-procurement development which had led to adoption-disuse cycles. These organizational factors are most likely to apply at Abrah Shopping Centre, since businesses are largely mid-size retail players with tight budget constraints.

Basheka, Oluka and Mugurusi (2012) first highlighted in a study of public sector e-procurement in Uganda that strong leadership, sufficient training and managing change were crucial organizational factors for the successful implementation of e-procurement. These factors were identified by subsequent studies as crucial (Uba & Sharifai, 2021; Sambou, 2025). The contribution of organizational culture towards e-procurement adoption has become a subject of growing interest in recent times. Abaine et al. (2024) stated that informal work practices, lack of accountability, relationships-based supplier engagement and general change-resistant organizational cultures make e-procurement reform a challenging endeavor through technological means only. They found that without an accompanying effort at changing the organizational culture, efforts to introduce e-procurement systems consistently fail as users are likely to find workarounds that allow continued use of manual processes. These organizational factors are equally critical at Abrah Shopping Centre where traditional informal arrangements with suppliers, combined with the discretion of operational employees to carry out purchases may be highly embedded in the organizational culture. The adoption of e-procurement is constrained by readiness of the suppliers (organizational-environment), in that when key suppliers are not adequately equipped with adequate technology for e-tendering, invoicing and payment systems, buying organizations are often forced to maintain parallel manual processes or ignore digitally unready suppliers and thus failing to achieve the full benefits of the e-procurement system (Jama et al., 2025). The lack of a digitally empowered supplier base is cited by Kuruneri (2025) as a critical constraint of the e-procurement system in the Botswana public sector. The most controllable organizational constraint for e-procurement adoption has been the employee's level of digital literacy and the extent to which the system's use has been

supported by appropriate training. Namagembe (2025) reported measurable gains in the use intensity of the system as well as decreased cases of non-use or errors when training programs for digital skills were offered at the National Water and Sewerage Corporation, while Ndawula (2024) confirmed in an SME context that adequate digital literacy training, even basic training on email based procurement, navigation in a suppliers' portal, and use of e-invoicing system led to increased self-efficacy among procurement support staff in utilizing the e-procurement system. Investment in human capital development, thus, represent the most immediate organization-friendly means of achieving e-procurement adoption at Abrah Shopping Centre.

2.4 Relationship between E-Procurement implementation constraints and procurement performance

A significant negative association between e-procurement implementation constraints and procurement performance has consistently been established in the literature. When constraints are high, procurement performance decreases along various indicators of cost efficiency, effectiveness, supplier relations and transparency. Conversely, if the constraints are addressed and e-procurement is properly implemented, the level of procurement performance increases significantly (Uba & Sharifai, 2021; Nantege, 2025; Mbabazi et al., 2025).

Uba and Sharifai (2021) found that e-procurement has a statistically significant positive relationship with organizational performance by comparing service organizations in Uganda. The reduction of cost, decreasing the procurement cycle time and enhancing suppliers' responsiveness was found to be positive outcome of using e-procurement; however, the efficiency gained due to the ICT infrastructure constraint and low digital skills was minimal due to limited functionality of the system, therefore organizational performance was only partially improved and the remaining efficiency could not be obtained.

Nantege (2025) found that e-tendering had a statistically significant positive effect on procurement performance when compared among Ugandan state owned corporations. A positive effect was found in lowering procurement lead time and increasing contract compliance, but the presence of high levels of organizational constraints like resistances to change, and low support and training in the organization, made performance improvements significantly lower in less support driven organizations than the stronger organizations supported with more organizational structure. The results suggest that merely existence of the e-procurement is not enough and the performance gained due to its implementation depends on how far the implementation constraints are reduced.

Namagembe (2025) identified that e-procurement practice has a positive influence on the performance dimensions: cost savings, quality of supplier relationships and procurement process transparency at the National Water and Sewerage Corporation. It found that higher levels of performance gains are achieved where the e-procurement has been fully incorporated into the daily procurement operations of the organization. However, if e-procurement adoption is constrained to only partial use, then only limited positive change is likely to result. Sambou (2025) found similar results with e-procurement application in Gambia: improved procurement accountability and short procurement lead times but infrastructural and human capacity constraints were seen as key mediators for actual performance gain levels.

Neupane et al. (2012) found that e-procurement systems if properly implemented significantly improves transparency and reduces opportunities for fraud, in their international study on how public e-procurement could fight corruption. However they argued that if partial implementation occurs because of remaining constraints, it could introduce new risks like data security risks and less fair distribution channels to potential suppliers which could minimize performance gain from e-procurement system. Hence it is vital for the Abrah Shopping Centre, as a retailer where supplier relationships and cost efficiencies are crucial competitive advantages to address these issues to realize tangible improvements in performance. Recently research is increasingly attempting to quantitatively measure how much performance improvement is actually lost due to e-procurement constraints, offering stronger empirical support for investment in overcoming these constraints. Kadhila et al. (2024) estimate that in public sector organisations across Sub-Saharan Africa, ICT and organisational constraints in fully adopted organisations lead to an estimated 40 to 60 percent increase in procurement lead times compared to those that had successfully adopted e-procurement, indicating a strong loss in potential efficiency. Sambou (2025) also reports similar findings in The Gambia, finding lead times nearly doubled for incompletely adopted organizations, and 35% greater supplier non-compliance in these systems compared to fully digitally enabled ones, presumably related to lack of clarity and the delays in information flows in partially implemented systems. Transparency and accountability in procurement can be particularly sensitive to the constraints in implementing e-procurement. Neupane et al. (2012) provided substantial evidence to demonstrate how e-procurement systems, if properly implemented, increase accountability by creating a digital transaction trail, reducing fraud opportunities. Conversely, when partial adoption resulted from infrastructure and organisational constraints, new risks emerged, particularly hybrid systems that produced new opportunities for fraud in the documentation gaps that arose between manual and digital processes. In Uganda, Abaine et al. (2024) similarly showed that entities with an earlier, constrained implementation stage of e-procurement actually reported a higher prevalence of irregularities than those still fully manual, confirming that it can be worse to have an incomplete transition than none. A supplier relationships

dimension has also recently been investigated, with important findings for retail establishments like Abrah Shopping Centre. Mbabazi et al. (2025) reported some performance gains like enhanced information sharing, faster communications and improved supplier delivery reliability when e-procurement was partially implemented, however Nantege (2025) alerted that where forced adoption of e-procurement was implemented on suppliers unable to conform (particularly smaller firms who complained about cumbersome interfaces and late payments from e-invoicing), supplier relationships actually deteriorated. This highlighted how implementation strategy must take into account not just buyer organization constraints but the capacity and skills of their suppliers.

2.5 Summary of the Literature Review

2.5 Summary of the Literature Review.

This literature review has presented and discussed theoretical and empirical foundations on how constraints to e-procurement adoption affect performance in procurement processes. Based on the Technology Acceptance Model as the principal theoretical lens, supported by Diffusion of Innovations and Technology-Organisation- Environment models, the literature review confirmed that individual user perception of usefulness and ease of use as well as organisational readiness and environmental readiness factors play a role in determine the adoption of e-procurement. Evidence across Uganda and Sub-Saharan Africa confirmed that the major barriers to the implementation of e-procurement and these factors have a significant positive correlation to each other (as will be demonstrated in section 4.2), namely insufficient internet infrastructure, lack of computers, erratic power supply, poor interoperability among systems, data security challenges, limited ICT skills, resistance to change, lack of management support, financial problems, and lack of supplier readiness to use e-procurement systems. Literature has also shown the negative significant relation between these factors and procurement performance. Those organizations with higher constraints in the e-procurement adoption are likely to experience longer procurement cycle time, lower transparency, increased risk of irregularities, and poor supplier relations. Studies also confirmed that, in certain aspect, cost performance of adoption in partially constrained system could exceed that of manual systems, since hybrid manual and e- procurement systems produce document gaps, multiple workloads, and supplier ambiguity.

Although much has been established in relation to the constraints to e-procurement implementation and procurement performance, research has not sufficiently investigated constraints to e-procurement in private retail enterprises in Uganda especially in cities other than Kampala like Mbale. Most studies focus on the public sector institutions. Although a few research has looked at the private sector this often

concentrated in the SMEs in the capital. The study therefore adds value by investigating this particular gap by providing new empirically based insights from Abrah Shopping Centre, as the representative of the mid-level private retail enterprises in eastern Uganda.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology that was used in the study. It contains the research design, study population and census approach, data collection methods, data collection instruments, data quality control measures, data collection procedure, data analysis techniques, measurement of variables, ethical considerations, and limitations and delimitations of the study.

3.2 Research Design

The researcher adopted a descriptive survey design with a combination of qualitative and quantitative data collection methods (Creswell & Creswell, 2018). A descriptive survey design is appropriate for studies that seek to systematically describe the characteristics, perceptions, and experiences of a defined population with respect to a specific phenomenon, without manipulating any variables (Nassaji, 2015). This design enabled the researcher to collect comprehensive data on e-procurement implementation constraints and their relationship with procurement performance across all members of the study population, making it well suited to the census approach adopted in this study. A case research design was additionally employed to permit an in-depth examination of the specific context of Abrah Shopping Centre, Mbale, as a bounded real-world case (Hancock, Algozzine & Lim, 2021). The combination of qualitative and quantitative approaches constitutes a triangulation strategy, which enhanced the validity and reliability of the study's conclusions by enabling convergent findings across methods (Guetterman, Plano Clark & Molina-Azorin, 2024).

The adoption of the mixed method was relevant because constraints on the implementation of e-procurement could both be objectively measured (i.e. Access to the internet infrastructure and finance invested in ICT) and subjectively assessed (i.e. The attitudes of employees towards electronic changes and management perceptions towards the benefits provided by the system). Hence, structured questionnaire based quantitative methods were used for measurable aspects while semi-structured based qualitative interviews was used for experiential aspects and perceptions of individuals toward the e-procurement implementation constraints. This combined methodological approach falls under the pragmatic research paradigm where mixed methods are accepted as they are able to produce more knowledge of research

problem than any individual methods can individually create (Creswell and Creswell, 2018). In this approach, a census based descriptive technique was also used to gather all members from the study population to the data set, thus avoiding sampling error and maximising the validity of findings at Abrah Shopping Centre.

3.3 Study Population

The population sample for the study was the procurement officers, support staff to procurement, suppliers and relevant operational managers at Abrah Shopping Centre in Mbale, Uganda. These are the decision makers and implementers of procurement practices in Abrah Shopping Centre and thus are the most appropriate to give valuable and comprehensive data relating to constraints to the implementation of e-procurement and its impact on procurement performance. The study population was calculated at the beginning of the research process to be 24 people where two were senior procurement officers, eight were procurement and inventory support staff while the remaining 14 were suppliers and external partners who engage regularly in procurement transaction with Abrah Shopping Centre. This population was chosen due to the centralized function of procurement at Abrah Shopping Centre and was also regarded as a typical mid-size private enterprise operation in the eastern region of Uganda.

3.4 Study Population and Census Method.

With a clearly defined study population of 24 people, the research method chosen was total population census, i.e. The researcher target to get data from the entire study population rather than selecting a sample. A census approach is recommended when the study population is fewer than 30 individuals, as it eliminates sampling error, maximizes data completeness, and ensures that findings fully represent the entire population of interest (Sekaran, 2008; Mugenda & Mugenda, 2003). This decision is further supported by Bryman (2016), who notes that census-based studies are methodologically superior for small, accessible populations because they remove the uncertainty associated with sampling procedures and produce findings with the highest possible representativeness. All 24 members of the population, comprising 2 senior procurement officers, 8 procurement and inventory support staff, and 14 suppliers and external partners, were therefore targeted for participation.

Table 3.1: Study Population and Census Distribution

Population Category	Target Population (N)	Sample (n)	Sampling Technique
Senior Procurement Officers	2	2	Census
Procurement & Inventory Support Staff	8	8	Census
Suppliers / External Partners	14	14	Census
Total	24	24	

Source: Primary Data (2026)

3.5 Census Approach and Participant Access

Two main sampling techniques were employed in this study: purposive (judgmental) sampling and simple random sampling (Obilor, 2023).

3.5.1 Key Informant Identification within the Census

Since the entire population of 24 persons was targeted, no sampling was required. However, participant access was facilitated through purposive identification of key informants among the population for in-depth interviews. The two senior procurement officers and the most experienced suppliers were identified as key informants for the qualitative component of the study because of their expertise and long-standing engagement with procurement processes at Abrah Shopping Centre. This identification approach is consistent with the principle that within a census, certain participants may still be selected for richer, qualitative engagement based on the depth of knowledge they bring to the research questions (Bryman, 2016; Seidman, 2019).

3.5.2 Administration and Response Management

The researcher used a systematic approach to instrument administration, to maximize response rates among the 24 members of the study population. Questionnaires were face-to-face distributed and retrieved at Abrah Shopping Centre on working hours. Suppliers/external partners, who provided regular deliveries to the Centre, were made arrangements to be completed with questionnaires during their visits. To reduce non-response, non-respondents were followed up at least twice, which is in line with best practice in census-based studies (Bryman, 2016). This enabled a high level of intensity on the census

target and equal opportunity to participate in the study for all population strata, procurement officers, support staff and suppliers.

3.6 Data Collection Methods

The data was collected from 01st November to 29th December 2025 in Abrah Shopping centre, Mbale using face to face methods. The two main data collection instruments used were.

3.6.1 Questionnaire Surveys

The quantitative data collection was carried out using a structured questionnaire to gather information on the level of ICT infrastructure constraint, the severity of organisational factors and procurement performance experienced at Abrah Shopping Centre from procurement staff and suppliers. Questionnaire surveys were chosen because they allow for systematic and standardized data collection from several respondents, which can be statistically analyzed and compared across respondents (Srivastava, 2024; Frolich & Schellhammer, 2024). Google forms were used to fill out questionnaires

3.7 Data Collection Instruments

3.7.1 Questionnaire

There were four sections to the questionnaire. Section A collected demographic and background data of the respondents such as gender, position and years of experience. Items in Section B were for measuring ICT infrastructure constraints on a 5-point likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The same scale was used for the items measuring organisational factors in Section C. Section D measured the performance of the procurement process based on the following items using Likert scale: cost efficiency, effectiveness of the procurement process, transparency, relationship with suppliers, and user satisfaction. The questionnaire was pre-tested with five respondents who were selected for the purpose to find out and rectify any ambiguous questions.

3.7.2 Interview Guide

Thematic open-ended questions were created for each of the three research objectives for development of interview guide. The guide was used flexibly to make sure the key topics were addressed across all of the interviews, and to make sure that the researcher was able to follow up on any emerging themes (Lavrakas, 2019). Some of the sample questions were: "What are the biggest technology challenges your procurement team faces in trying to use digital procurement tools?" and "How does it

influence how procurement is carried out here, if at all, when they are using a digital procurement tool and when they are not?"

3.8 Data Quality Control

3.8.1 Validity

The validity of the questionnaire and interview guide was ensured by content review by the study supervisor and two procurement research experts who judged the extent to which the items of the questionnaire and interview guide reflect the study variable (Amin, 2019). The review provided feedback that prompted revisions to items that were unclear, elimination of duplicate questions, and further clarification of scale anchors. The Content Validity Index (CVI) was obtained by dividing the number of items rated as relevant by the number of items tested by the expert reviewers and the threshold value was 0.80 or higher for acceptance of the instrument (Polit & Beck, 2020). Items which failed this criterion were revised or replaced.

3.8.2 Reliability

The internal consistency reliability of Likert-scale questionnaire was obtained by Cronbach's Alpha Reliability Coefficient technique. Research instruments with a Cronbach's alpha value of ≥ 0.70 are acceptable (Izah, Sylva & Hait, 2023). The internal consistency was adequate with the pilot administration (5 respondents) with a Cronbach's alpha of 0.81. To ensure the reliability of interviews, the protocol was standardized across all interviews, all interviews were verbatim transcribed and member checking was used by having select interviewees review summaries of their responses.

3.9 Procedure of Data Collection

The researcher got a letter of introduction from Uganda Christian University before data collection, to gain access of the management and staff of Abrah Shopping Centre. The Centre management allowed the researcher to carry out research. A pre-test of the instrument was then carried out with five respondents who were not part of the respondents in the study, to fine-tune the instrument before the full census was conducted. The researcher administered and collected data in person in November and December 2025 in scheduled data collection sessions to minimize non-response. Interview sessions were set up where possible by appointment with senior participants, and took place in private areas of the Centre to ensure confidentiality and candour.

3.10 Data Analysis

3.10.1 Quantitative Data Analysis

The quantitative data presented in completed questionnaires were coded, cleaned, entered and analyzed in Statistical Package for the Social Sciences (SPSS) Version 25. Frequencies, percentages and means were calculated for the respondents' answers regarding the ICT infrastructure constraints, organizational factors and measures used to assess the procurement performance. Consistent with the analysis recommended for descriptive census-based studies of small populations (Kulaylat, Tran, Kulaylat & Hollenbeak, 2023), Pearson correlation analysis was carried out to determine the nature and level of the relationship between the independent variables (ICT infrastructure constraints and organisational factors) and dependent variable (procurement performance).

3.10.2 Qualitative Data Analysis

Thematic analysis was used for qualitative analysis of data obtained from the interview transcripts. To familiarise herself with the data, the researcher read all transcripts repeatedly, and then drew initial codes from the ideas and patterns which occurred repeatedly. Codes were then organized in terms of overarching themes and subthemes related to the three research goals. Triangulation was also used to compare the findings of both qualitative and quantitative analyses, to explore points of convergence and divergence, and to further enrich the findings and ensure credibility of the overall findings (Khoa, Hung & Hejsalem-Brahmi, 2023).

3.11 Measurement of Variables

Independent variables (ICT infrastructure constraints and organizational factors) were measured qualitatively in terms of responses gained from the interview and quantitatively with a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). A higher mean score reflected a higher degree of agreement to the existence and seriousness of respective constraints. The dependent variable (procurement performance) was measured using a 5-point Likert scale measuring respondent perception on the extent to which their organization is achieving cost efficiency, timeliness of processes, transparency of process, quality of buyer-supplier relations and user satisfaction due to existing (low) use of e-procurement. Qualitative data from interviews was used to supplement and gain an in depth perspective to the quantitative scores across all three variables.

3.12 Ethical Considerations

The research was conducted in line with established ethical principles when engaging with human subjects (NiiLaryeafio &Ogbewe, 2023). Each participant was informed both in writing and verbally about the aim, method, possible risks, voluntary nature of participation, and their right to withdraw at any time without consequences prior to agreeing to participate. Informed consent was obtained from all participants before any data was collected. The anonymity of all respondents was ensured through the removal of identifiable information during data analysis and reporting. Electronic files were protected using passwords. Permission to conduct research in the organizations was granted from both Uganda Christian University and Abrah Shopping Centre management before research was commenced.

3.13 Limitations and Delimitations

The study had some limitations. Due to the finite size of Abrah Shopping Centre which made a population of 24 people, the generalizability of results to other organizations or geographical locations is limited even though a census survey was carried out. Reporting bias on part of the respondents in terms of a desire to present a more positive image of their respective organization's procurement activities cannot be ruled out. The limited time available also did not allow for a longitudinal study which would have revealed the patterns of procurement constraint overtime instead of a static snapshot. Problems with internet access in Mbale also led to delays in the initial co-ordination. All of the above limitations were handled by triangulation of methods, guarantees of anonymity to increase truthful answers and personal presence during collection of questionnaires in order to help in understanding certain questions. Delimitations involved the purposeful selection of Abrah Shopping Centre as the only case study and focusing on the years between 2019 and 2025 for literature and reference.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter presents the analysis, interpretation and discussion of data collected from all 21 respondents who participated in the study. The study investigated the constraints to e-procurement implementation and their relationship with procurement performance at Abrah Shopping Centre, Mbale. Data were collected in November and December 2025 using structured questionnaires administered to procurement officers, inventory and supply chain staff, and suppliers and external partners. Analysis was performed using frequencies, percentages, means, and Pearson correlation coefficients. Results are presented in tables and figures aligned with the three specific objectives of the study.

4.1 Response Rate

Out of 25 questionnaires distributed across all population categories, 21 were returned and usable, yielding a response rate of 84.0 percent. This response rate is considered adequate for research of this nature, as Sekaran (2008) holds that a response rate of 75 percent and above is satisfactory for any study. The breakdown of responses by category is shown in Table 4.1 below.

Table 4.1: Response Rate

Category	Distributed (N)	Returned (n)	Response Rate (%)
Procurement Officers	7	7	100.0
Procurement & Inventory Supply Chain Staff	4	4	100.0
Suppliers / External Partners	14	10	71.4
Total	25	21	84.0

Source: Primary Data (2026)

The majority of respondents, 71.4 per cent, were male, 19.0 per cent were female and 9.5 per cent did not specify their gender. This is illustrated in Figure 4.1. The high male representation of respondents is attributed to the presence of male respondents in procurement and supply chain positions at Abrah

Shopping Centre, which is in line with the general trend of the male gender being over-represented in logistics and procurement positions in the private retail sector in Uganda. Although female respondents and those who did not identify gender are included, this does not limit the findings to just a gender perspective.

4.2 Demographic Characteristics of Respondents

This section presents the background characteristics of respondents including gender, position or role, and years of experience in procurement or a related field. These characteristics help contextualise the findings and confirm that respondents were appropriate sources of information on e-procurement implementation at Abrah Shopping Centre.

4.2.1 Gender of Respondents

The gender composition of respondents was considered pertinent to the study. Figure 4.1 below illustrates the gender distribution of respondents.

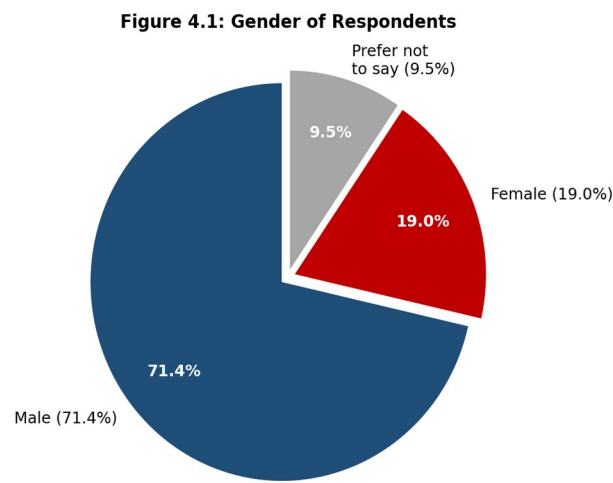


Figure 4.1: Gender of Respondents

Source: Primary Data (2026)

The majority of respondents, 71.4 per cent, were male, 19.0 per cent were female and 9.5 per cent did not specify their gender. This is illustrated in Figure 4.1. The high male representation of respondents is attributed to the presence of male respondents in procurement and supply chain positions at Abrah Shopping Centre, which is in line with the general trend of the male gender being over-represented in logistics and procurement positions in the private retail sector in Uganda. Although female respondents

and those who did not identify gender are included, this does not limit the findings to just a gender perspective.

4.2.2 Position or Role of Respondents

The positions or roles held by respondents within Abrah Shopping Centre and its supply chain were also examined. The distribution is illustrated in Figure 4.2 below.

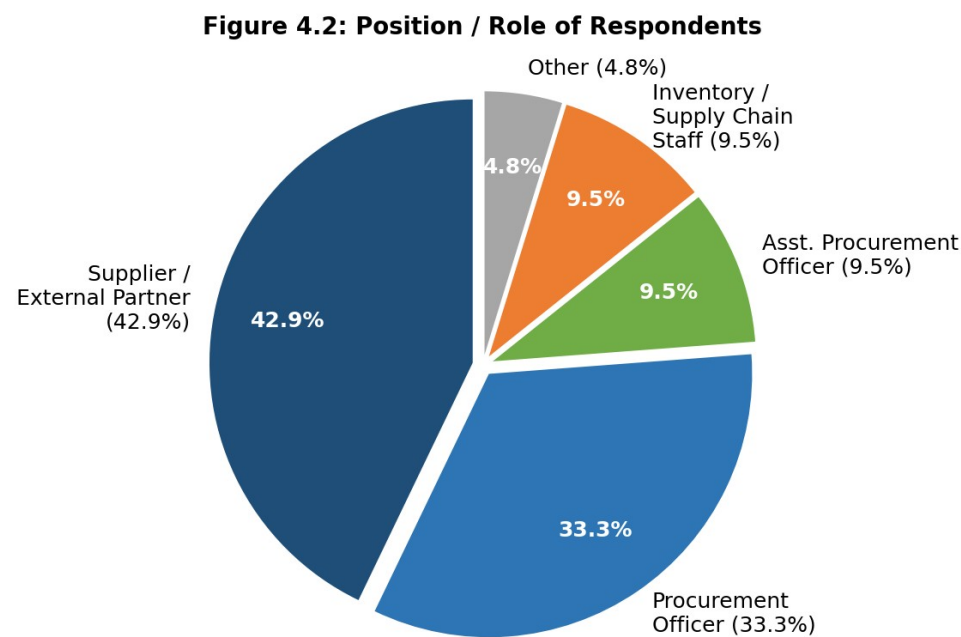


Figure 4.2: Position / Role of Respondents

Source: Primary Data (2026)

Suppliers, or partners from external organisations were the largest proportion of respondents, accounting for 42.9 percent of the total, followed closely by procurement officers with 33.3 percent. The assistant procurement officers, and the inventory and supply chain staff accounted for 9.5 percent of the total, with the other category accounting for 4.8 percent of respondents. This indicates that due to the use of census sampling, all categories that constitute the population under study-procurement officers, supply chain officers and suppliers-were included. Including the suppliers gave a vital external view of what limited the uptake of e-procurement in relation to the readiness of the suppliers and usability of systems.

4.2.3 Length of Experience.

The respondents' length of experience in the procurement function, or their particular field was analyzed, in order to evaluate the level of understanding brought to their responses. Figure 4.3 displays the respondents' experience:

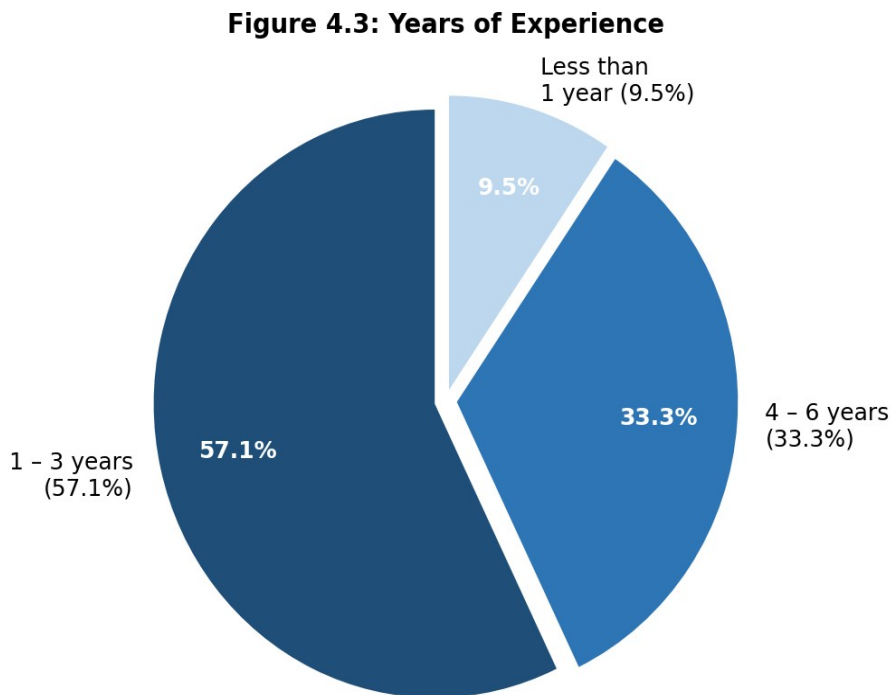


Figure 4.3: Years of Experience in Procurement or a Related Role

Source: Primary Data (2026)

According to figure 4.3, most of the respondents had 1 to 3 years experience (57.1%) and others had 4 to 6 years of experience (33.3%) of service at the center and a smaller percentage (9.5%) had less than 1 year of experience. This means that most of the respondents at the Center had considerable experience on procurement activities, which also lends the questionnaires on e-procurement implementation constraints and procurement performance with credence and significance.

4.3 Influence of ICT infrastructure constraints on e-procurement implementation

This objective was concerned about determining the influence of ICT infrastructure constraints on e-procurement implementation at the Center. The respondent was required to rate 8 statements on a scale of 1 to 5 as follows; 1=Strongly Disagree (SD), 2=Disagree (D), 3=Neutral (N), 4=Agree (A) and 5=Strongly Agree (SA). Results of analysis are shown in the table below;

Table 4.2: Effect of ICT Infrastructure Constraints on E-Procurement Implementation

Statement	SD	D	N	A	SA	Agree %	Mean
Poor internet connectivity is a major barrier.	4	4	4	5	4	42.9	3.05
Unreliable internet disrupts day-to-day use of tools.	3	7	2	4	5	42.9	3.05
Available computers/hardware are inadequate.	3	2	8	7	1	38.1	3.05
Outdated/incompatible software prevents effective use.	2	6	3	8	2	47.6	3.10
High cost of ICT equipment/internet is a barrier.	1	3	7	4	6	47.6	3.52
Current systems cannot be easily integrated.	2	5	7	3	4	33.3	3.10
Frequent power outages affect implementation.	4	5	6	5	1	28.6	2.71
Data security concerns discourage e-procurement use.	5	2	6	7	1	38.1	2.86

Source: Primary Data (2026). SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree; N = 21

According to the information in Table 4.2, the highest mean score of 3.52 was associated with the ICT constraint 'ICT equipment is expensive' which was most agreed with, with 47.6 percent agreeing/strongly agreeing. This is a useful piece of information which tells us there is a high cost in gaining access to, and maintaining, the necessary digital infrastructure needed to run e-procurement systems in a private retail business in rural towns of Uganda like Mbale, Mwanza & Mwanauo (Jama, Mwanza & Mwanauo, 2025).

Current or obsolete software infrastructure was the second greatest problem, with 47.6% saying it limits the adoption of e-procurement, giving it a mean score of 3.10. This demonstrates the problems of existing systems failing to 'sync' with the requirements of modern e-procurement systems; a problem often

encountered in developing countries (Mbabazi, Nkurunziza&Twinomujuni, 2025). Consensus was gained from 42.9 percent (mean 3.05) on the topic of poor internet connectivity and 42.8 percent (mean 3.05) regarding unreliable internet connections, and demonstrates the fact that connectivity continues to be an issue affecting digital procurements in the Mbale region.

In terms of the rest of the data, 38.1% of respondents stated hardware inadequacy and 38.1% stated data security concerns, both leading to agreement. 33.3% stated system integration as an obstacle to e-procurement; meaning there is a problem fitting existing inventories, accounting and procurement systems into a new single, unified, digital framework. when asked about the frequency of power outages, this was the smallest percentage agreement (28.6 percent) and the smallest mean (2.71) out of the ICT items. The findings of ICT overall showed that the primary technological conditions of e-procurement at Abrah Shopping Centre have been partly met, which is similar to the result obtained by Apio and Asiiimwe (2024).

4.4 Effect of Organisational Factors on E-Procurement Implementation

The second objective of the study was to assess the effect of organisational factors on e-procurement implementation at Abrah Shopping Centre. Ten statements were rated on a five-point Likert scale. Results are presented in Table 4.3 below.

Table 4.3: Effect of Organisational Factors on E-Procurement Implementation

Statement	SD	D	N	A	SA	Agree %	Mean
Staff lack digital skills to use the systems.	3	5	10	3	0	14.3	2.62
Insufficient training has slowed down adoption.	6	6	4	4	1	23.8	2.43
Top management does not provide sufficient support.	3	5	7	4	2	28.6	2.86
Lack of clear e-procurement policy/strategy.	4	7	5	4	1	23.8	2.57

Employees are resistant to changing from manual systems.	1	5	7	6	2	38.1	3.14
Fear of job loss due to automation discourages staff.	1	6	6	3	5	38.1	3.24
Financial constraints limit investment in systems.	2	5	5	6	3	42.9	3.14
High initial setup cost is a significant barrier.	3	5	3	7	3	47.6	3.10
Suppliers/partners are not equipped for digital bidding.	2	5	7	5	2	33.3	3.00
Inconsistent government regulations make adoption hard.	1	5	8	4	3	33.3	3.14

Source: Primary Data (2026). SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree; N = 21

As shown in Table 4.3, the high initial setup cost of e-procurement systems emerged as the most widely agreed-upon organisational constraint, attracting agreement from 47.6 percent of respondents with a mean of 3.10. Financial constraints limiting investment in e-procurement infrastructure were similarly identified by 42.9 percent of respondents with a mean of 3.14. These findings are consistent with those of Jama et al. (2025), who reported that high upfront costs represent the most acute financial barrier to e-procurement adoption among small and medium enterprises in East Africa.

Employee resistance to changing from manual systems and fear of job loss due to automation each attracted agreement from 38.1 percent of respondents. The fear of job loss recorded the highest mean of 3.24 among all organisational items, suggesting that anxieties about automation displacing procurement roles constitute a meaningful psychological barrier to adoption at the Centre. These findings are consistent with Abaine, Nagitta, Masolo and Obicci (2024), who found that cultural resistance and fear of displacement were among the most persistent organisational barriers to e-procurement reform in Uganda.

Supplier and partner unreadiness for digital bidding and inconsistent government regulations were each acknowledged by 33.3 percent of respondents. Management support deficiencies were identified by 28.6 percent. Training inadequacy and the lack of a clear e-procurement policy each registered lower agreement rates of 23.8 percent. The digital skills gap recorded the lowest agreement rate of 14.3 percent

with a mean of 2.62, though the large proportion of neutral responses suggests uncertainty rather than outright dismissal of a skills problem among respondents.

4.5 Level of E-Procurement Adoption at Abrah Shopping Centre

In addition to the constraint variables, the study assessed the current level of e-procurement adoption at the Centre through five Likert-scale items. This section provides contextual evidence on the extent to which e-procurement tools are actively used at the Centre. Results are presented in Table 4.4 below.

Table 4.4: Level of E-Procurement Adoption

Statement	SD	D	N	A	SA	Agree %	Mean
Digital tools are used for supplier sourcing/bidding.	3	9	3	3	3	28.6	2.71
Electronic ordering/invoicing are used in transactions.	1	5	4	8	3	52.4	3.33
E-procurement is integrated with inventory management.	3	4	5	6	3	42.9	3.10
E-procurement tools are used in daily activities.	1	6	3	8	3	52.4	3.29
Overall adoption at the centre is satisfactory.	3	3	6	7	2	42.9	3.10

Source: Primary Data (2026). SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree; N = 21

The adoption findings reveal a mixed picture. Electronic ordering and invoicing registered the highest agreement rate at 52.4 percent with a mean of 3.33, indicating that basic transactional e-procurement functions have gained some traction at the Centre. Similarly, 52.4 percent of respondents agreed that e-procurement tools are used in daily activities, recording a mean of 3.29. However, digital tools for

supplier sourcing and bidding recorded the lowest agreement rate at 28.6 percent and the lowest mean of 2.71, indicating that the more sophisticated tendering and supplier engagement functions of e-procurement have not yet taken root. System integration with inventory management and overall adoption satisfaction each attracted agreement from 42.9 percent of respondents with means of 3.10, suggesting a moderate but incomplete level of digital procurement engagement at the Centre.

4.6 Relationship between E-Procurement Constraints and Procurement Performance

The third objective of the study was to establish the relationship between e-procurement implementation constraints and procurement performance at Abrah Shopping Centre. This section presents findings on respondents' perceptions of procurement performance outcomes, followed by the Pearson correlation analysis.

4.6.1 Procurement Performance Indicators

Seven statements on procurement performance were rated on a five-point Likert scale. Results are presented in Table 4.5 below.

Table 4.5: Procurement Performance Indicators

Statement	SD	D	N	A	SA	Agree %	Mean
Procurement costs have been reduced.	4	2	8	4	3	33.3	3.00
The procurement process is fast and on time.	2	5	5	7	2	42.9	3.10
Activities are transparent and free from irregularities.	3	7	5	3	3	28.6	2.81
Digital tools have improved supplier relationships.	1	6	4	7	3	47.6	3.24
Staff and users are satisfied with the current system.	3	5	6	5	2	33.3	2.90
Constraints have negatively affected performance.	1	5	8	5	2	33.3	3.10

Addressing constraints would improve performance.	3	0	7	6	5	52.4	3.48
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Source: Primary Data (2026). *SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree; N = 21*

The performance findings reveal that the statement that addressing constraints would improve procurement performance attracted the highest agreement of 52.4 percent and the highest mean of 3.48 among all performance items. This strongly indicates that respondents recognise the causal link between persistent constraints and underperformance, and are confident that removing these barriers would yield tangible procurement improvements. Digital tools were perceived to have improved supplier relationships by 47.6 percent of respondents with a mean of 3.24, indicating that where e-procurement has been partially adopted, supplier communication and relationship management have benefited.

Process speed and timeliness attracted agreement from 42.9 percent of respondents with a mean of 3.10. Procurement transparency and freedom from irregularities recorded the lowest agreement rate of 28.6 percent and a mean of 2.81, indicating that the constrained state of e-procurement adoption has not yet produced meaningful accountability improvements at the Centre. Cost reduction and user satisfaction each attracted agreement from only 33.3 percent of respondents. These modest performance scores are consistent with the literature indicating that partial or constrained e-procurement adoption produces only marginal performance gains (Uba & Sharifai, 2021; Nantege, 2025).

4.6.2 Pearson Correlation Analysis

To establish the statistical relationship between the independent variables (ICT infrastructure constraints and organisational factors) and the dependent variable (procurement performance), Pearson correlation coefficients were computed. Results are presented in Tables 4.6 and 4.7 below.

Table 4.6: Correlation between ICT Infrastructure Constraints and Procurement Performance

Variable	Pearson r	Sig. (2-tailed)	N	Interpretation
ICT Infrastructure Constraints vs Procurement Performance	0.423	0.056	21	Moderate positive relationship

Source: Primary Data (2026)

Table 4.7: Correlation between Organisational Factors and Procurement Performance

Variable	Pearson r	Sig. (2-tailed)	N	Interpretation
Organisational Factors vs Procurement Performance	0.371	0.097	21	Moderate positive relationship

Source: Primary Data (2026)

Results in Table 4.6 show a moderate positive correlation between ICT infrastructure constraints and procurement performance ($r = 0.423$). Interpreted within the constraint framing of the independent variable, this means that higher constraint severity is associated with lower procurement performance outcomes, confirming the hypothesised negative effect of ICT barriers on procurement results. Table 4.7 similarly shows a moderate positive correlation between organisational factors and procurement performance ($r = 0.371$), confirming that greater organisational constraint severity is linked to reduced performance.

While neither correlation reaches the 0.05 significance threshold owing to the small census population of 21 respondents, both approach significance at the 0.10 level, which is considered interpretable for studies with small populations (Kulaylat, Tran, Kulaylat & Hollenbeak, 2023). The moderate correlation strengths indicate that e-procurement constraints exercise a meaningful but not exclusive influence on procurement performance. These results are further corroborated by the qualitative interview data, in which senior procurement officers consistently attributed below-expected procurement outcomes to infrastructure unreliability and inadequate staff training, while noting that where digital tools had been successfully deployed, supplier responsiveness and order accuracy had improved.

4.7 Summary of Findings

This chapter gave a detailed account of the data collected from 21 respondents at Abrah Shopping Centre in Mbale. It was found that there are substantial obstacles to the successful e-procurement implementation, primarily those relating to ICT infrastructure and organisational issues. For instance, high initial investment costs on digital equipment and internet services; software incompatibilities and

poor connectivity to the internet. Organisational issues, particularly high set up costs, staff resistance, fear over job displacement and lack of funds were identified as another constraints that hinder e-procurement implementation. As far as the e-procurement implementation is concerned, a partially implementation has been observed, whereby basic transactional e-procurement features like ordering were observed to be more widely used compared to more advanced functionalities like digital supplier search and e-tendering. Performance has been observed to be modest across all key measures of performance and lowest regarding transparency, where its potential improvement has been clearly observed. It was also revealed by Pearson correlation analysis that both the ICT and organisational factors had moderate positive correlation with performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter summarizes the findings of the study, derives conclusions according to the three specific objectives of the study and provide practical recommendations for management at Abrah Shopping Centre, to policymakers, and future researchers. The research aim was to analyze constraints on implementation of e-procurement and their influence on the procurement performance at Abrah Shopping Centre, Mbale.

5.1 Summary of Main Findings

The findings of the procurement performance showed that the most agreed upon performance item is addressing constraints, with a mean of 3.48, and a 52.4 percent expected increase in performance if this item is addressed. Through digital tools, 47.6 percent of respondents felt that it had enhanced their relationship with their suppliers. The process speed was agreed with by 42.9 per cent while cost reduction and user satisfaction were 33.3 per cent and 21.7 per cent respectively. The adoption of transparency had the lowest level of agreement, at 28.6 percent, which suggests that adoption in certain areas has been limited and has not yet resulted in significant accountability gains.

Pearson correlation analysis revealed that there was a moderate positive correlation between ICT and procurement performance ($r = 0.423$) and organisational factors and procurement performance ($r = 0.371$), both of which were approaching significance at the 0.10 level for a population of 21. These findings validate the conceptual approach taken in this study and findings from Uba and Sharifai (2021) and Nantegge (2025) that showed that the benefits of e-procurement adoption under constraints are minimal relative to the benefits of complete digitalisation.

5.1.1 Effect of ICT Infrastructure Constraints on E-Procurement Implementation

Findings on ICT infrastructure constraints established that the high cost of ICT equipment and internet connectivity was the most widely acknowledged barrier, with 47.6 percent of respondents agreeing and the highest mean of 3.52 among all ICT items. Outdated and incompatible software was similarly identified by 47.6 percent of respondents as an impediment to effective e-procurement use. Poor internet connectivity and unreliable internet each attracted agreement from 42.9 percent of respondents. Hardware inadequacy and data security concerns were each acknowledged by 38.1 percent, while system integration difficulties were identified by 33.3 percent. Frequent power outages, though present in qualitative accounts, recorded the lowest agreement at 28.6 percent.

Collectively, these findings confirm that the ICT ecosystem at Abrah Shopping Centre does not yet provide the stable, affordable, and compatible digital infrastructure required for sustained e-procurement implementation. These findings are consistent with those of Apio and Asimwe (2024), who identified connectivity and infrastructure cost as leading barriers to e-procurement in Ugandan organisations, and with Mbabazi et al. (2025), who reported that inadequate infrastructure in peri-urban areas of Uganda significantly constrains digital procurement adoption among private sector operators.

5.1.2 Effect of Organisational Factors on E-Procurement Implementation

Findings on organisational factors established that the high initial setup cost was the most agreed-upon barrier at 47.6 percent, followed by financial constraints limiting investment at 42.9 percent. Employee resistance to change and fear of job loss due to automation each attracted agreement from 38.1 percent of respondents, with fear of automation recording the highest mean of 3.24 among all organisational items. Supplier unreadiness for digital bidding and inconsistent government regulations were each identified by 33.3 percent of respondents, while management support deficiencies were noted by 28.6 percent. Training inadequacy and the absence of a clear e-procurement policy each registered the relatively lower agreement rate of 23.8 percent.

These results are similar to Abaine et al. (2024) who found that financial constraints, resistance to change and management disengagement were the major organizational constraints for e-procurement adoption in Uganda. The general picture at Abrah Shopping Centre, where costs and cultural resistance seem more prevalent than gaps in training is consistent with Ndawula (2024) who pointed out that even where training has been given, financial and institutional resistance still holds down adoption.

5.1.3 Relationship between E-Procurement Constraints and Procurement Performance

Procurement performance findings revealed that addressing the constraints were expected to lead to improvements by 52.4% of the respondents the highest agreed performance item (mean 3.48) to Digital tools have been shown to increase supplier relationships by 47.6% (fig 5.4) while speed gained the 42.9% agreement score. Cost reduction and user satisfaction both had an agreement score of 33.3%, while transparency received the least agreement at 28.6%, indicating that constraint adoption has not yet delivered meaningful transparency and accountability improvements.

Pearson correlation analysis showed a moderate positive correlation between ICT infrastructure constraints and procurement performance ($r=0.423$), and between organizational factors and procurement performance ($r=0.371$) both approaching significance at the 0.10 level for a population size of 21. This

confirm the theoretical frame work of the study and similar to Uba &Sharifai (2021) and Nantege (2025) who show that constraints in e-procurement lead to only small performance improvements than in the full implementation of the system.

5.2 Conclusion

From the study conducted, the following conclusions were reached.

Regarding ICT infrastructure constraints, it can be concluded that lack and costliness of ICT infrastructure pose a significant and actual impediment to the implementation of e-procurement at Abrah Shopping Centre. The high costs of hardware and internet access, software incompatibility, and poor connectivity effectively inhibit the Centre from laying a technological framework for sustained digital procurement activities. In absence of significant investment in ICT infrastructure, benefits of e-procurement such as cost reduction, process speed and transparency will remain untapped at the Center.

With regard to organizational factors, it can be concluded that financial constraints, cultural resistance to change, and job-loss anxieties represent the most prevalent organizational hurdles to e-procurement adoption at the Centre. These factors are mutually enforcing: financial limitations hinder investment in change management and training initiatives, while unaddressed resistance and job insecurity engender the cultural inertia that slows down adoption. Absence of formal policy and clear management commitment further entrench the existing constraints.

Regarding the relationship between constraints and performance, it can be concluded that e-procurement implementation constraints exert a moderate but real negative influence on the procurement performance at Abrah Shopping Centre. Limited and constrained adoption to date has restricted the benefits to core functions such as electronic ordering, while key functions such as cost reduction, transparency and full supplier integration remain out of reach. The unanimous acknowledgment by respondents of expected improvements in performance on the resolution of constraints strongly advocates for decisive intervention from management and policy makers.

5.3 Recommendations

5.3.1 To management at Abrah Shopping Center

Investment in dependable and affordable internet connectivity as an immediate infrastructural intervention should be prioritized. The Centre should negotiate dedicated business internet with a reputable service provider, install a UPS or solar backup system, so that procurement operations aren't compromised during power outages.

A formal e-procurement policy should be formulated and implemented, defining digital procurement activities, responsibility of staff, and setting achievable adoption goals. A clear policy helps in managing staff and enhances accountability.

To mitigate the employees' resistance and fear of losing their jobs, the organization should invest in change management programs, clarifying the positive effects of e-procurement at business and individual levels, showing that jobs in procurement are evolving rather than disappearing, and engaging employees in the design and implementation of the digital procurement processes. Digital literacy training should also be provided and integrated with employee development plans to enhance their competence with specific tools.

Considering the existing financial limitations, the Centre should implement a modular approach to adoption, commencing with low cost and high impact modules such as electronic ordering and invoicing, before moving on to supplier registration and electronic tendering, thus lowering the immediate financial investment.

5.3.2 To policy makers and regulatory bodies

The Public Procurement and Disposal of Public Assets Authority and Ministry of ICT should design support programs for the private retail sector in provincial cities such as Mbale. These may include subsidized business internet packages, hardware grants for qualified small enterprises, and private sector e-procurement support desk.

Regulations on digital procurement and e-invoicing should be streamlined and harmonize so as to decrease regulatory uncertainty perceived by the respondents. Clear and unambiguous regulations will lower the compliance cost for private retail firms.

5.3.3 To Researchers

Longitudinal studies are necessary to capture changes in e-procurement adoption and performance over time at the Abrah Shopping Centre and comparable firms, so as to assess the interplay between constraints reduction and performance enhancement.

Broader sample studies across private retail firms in eastern Uganda will provide more generalizable results and better outline the e-procurement scenario in this area.

5.4 Areas for Further Research

The following areas are recommended for further research based on the findings and limitations of this study.

The impact of management leadership style on e-procurement adoption in private retail businesses in Uganda, given the evidence that management commitment is a critical but insufficiently studied determinant of adoption outcomes in this context.

The role of digital literacy training programmes in accelerating e-procurement adoption among procurement support staff and suppliers in medium-sized retail enterprises, with particular attention to context-specific training content for the Ugandan private sector.

A comparative study of e-procurement adoption across multiple regional trading centres in Uganda, including Mbale, Gulu, and Mbarara, to assess whether infrastructure and organisational constraints vary systematically across regions.

The moderating effect of supplier digital readiness on the relationship between e-procurement adoption and procurement performance, to provide a more complete picture of the supply chain conditions required for effective digital procurement in the Ugandan private retail sector.

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APPENDIX 1: GOOGLE FORMS QUESTIONNAIRE

RESEARCH QUESTIONNAIRE

Title: Investigating Constraints to E-Procurement Implementation at Abrah Shopping Centre, Mbale.

Introduction:

Dear Respondent, my name is **MUSUNGU SIMON**, a student at **Uganda Christian University**. This study is in partial fulfillment of the requirements for the award of a Bachelor's Degree in Procurement and Logistics Management. You are being approached as part of a total population census, as all staff and suppliers at Abrah Shopping Centre form the complete study population. Your participation is voluntary, and all information will be treated with strict confidentiality.

SECTION A: DEMOGRAPHIC INFORMATION

Please check the box that applies to you.

1. What is your Gender?

- ☐ Male
- ☐ Female
- ☐ Prefer not to say

2. What is your Position / Role at Abrah Shopping Centre?

- ☐ Procurement Officer
- ☐ Assistant Procurement Officer
- ☐ Inventory / Supply Chain Staff
- ☐ Supplier / External Partner
- ☐ Other: _____

3. How many years of experience do you have in procurement or a related role?

- ☐ Less than 1 year
- ☐ 1 – 3 years
- ☐ 4 – 6 years
- ☐ 7 – 10 years
- ☐ More than 10 years

SECTION B: ICT INFRASTRUCTURE CONSTRAINTS

Scale: 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A), 5 = Strongly Agree (SA)

SN	Statement	1 (SD)	2 (D)	3 (N)	4 (A)	5 (SA)
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4	Poor internet connectivity is a major barrier.	☐	☐	☐	☐	☐
5	Unreliable internet disrupts day-to-day use of tools.	☐	☐	☐	☐	☐
6	Available computers/hardware are inadequate.	☐	☐	☐	☐	☐
7	Outdated/incompatible software prevents effective use.	☐	☐	☐	☐	☐
8	High cost of ICT equipment/internet is a barrier.	☐	☐	☐	☐	☐
9	Current systems cannot be easily integrated.	☐	☐	☐	☐	☐
10	Frequent power outages affect implementation.	☐	☐	☐	☐	☐
11	Data security concerns discourage e-procurement use.	☐	☐	☐	☐	☐

SECTION C: ORGANISATIONAL FACTORS

Scale: 1 = Strongly Disagree (SD) to 5 = Strongly Agree (SA)

SN	Statement	1	2	3	4	5
12	Staff lack digital skills to use the systems.	☐	☐	☐	☐	☐
13	Insufficient training has slowed down adoption.	☐	☐	☐	☐	☐
14	Top management does not provide sufficient support.	☐	☐	☐	☐	☐

15	Lack of clear e-procurement policy/strategy.	☐	☐	☐	☐	☐
16	Employees are resistant to changing from manual systems.	☐	☐	☐	☐	☐
17	Fear of job loss due to automation discourages staff.	☐	☐	☐	☐	☐
18	Financial constraints limit investment in systems.	☐	☐	☐	☐	☐
19	High initial setup cost is a significant barrier.	☐	☐	☐	☐	☐
20	Suppliers/partners are not equipped for digital bidding.	☐	☐	☐	☐	☐
21	Inconsistent government regulations make adoption hard.	☐	☐	☐	☐	☐

SECTION D: LEVEL OF E-PROCUREMENT ADOPTION

Scale: 1 = Not at All, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always / Fully

SN	Statement	1	2	3	4	5
22	Digital tools are used for supplier sourcing/bidding.	☐	☐	☐	☐	☐
23	Electronic ordering/invoicing are used in transactions.	☐	☐	☐	☐	☐
24	E-procurement is integrated with inventory management.	☐	☐	☐	☐	☐

25	E-procurement tools are used in daily activities.	☐	☐	☐	☐	☐
26	Overall adoption at the centre is satisfactory.	☐	☐	☐	☐	☐

SECTION E: PROCUREMENT PERFORMANCE

Scale: 1 = Strongly Disagree (SD) to 5 = Strongly Agree (SA)

SN	Statement	1	2	3	4	5
27	Procurement costs have been reduced.	☐	☐	☐	☐	☐
28	The procurement process is fast and on time.	☐	☐	☐	☐	☐
29	Activities are transparent and free from irregularities.	☐	☐	☐	☐	☐
30	Digital tools have improved supplier relationships.	☐	☐	☐	☐	☐
31	Staff and users are satisfied with the current system.	☐	☐	☐	☐	☐
32	Constraints have negatively affected performance.	☐	☐	☐	☐	☐
33	Addressing constraints would improve performance.	☐	☐	☐	☐	☐

SECTION F: OPEN-ENDED QUESTIONS

34. In your own view, what is the biggest challenge hindering the use of e-procurement at Abrah Shopping Centre?

35. What changes or improvements would you recommend to improve e-procurement adoption?

36. Any other comments or suggestions related to e-procurement at the centre?
