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ELECTRONIC PROCUREMENT SYSTEM ON PERFORMANCE OF PUBLIC PROCUREMENT PROCEDURES

A case of MUHIMA District Hospital

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ABSTRACT

The general objective of this study was to assess the effect of the electronic procurement system on the performance of public procurement procedures at MUHIMA District Hospital. The study was guided by the following Specific Objectives: To assess the effect of E-Bidding on the performance of public procurement procedures at MUHIMA District Hospital, to evaluate the effect of E-Contract on the performance of public procurement procedures at MUHIMA District Hospital, to establish the effect of E-Evaluation on the performance of public procurement procedures at MUHIMA District Hospital, and to analyze the effect of E-Catalogue on the performance of public procurement procedures at MUHIMA District Hospital. This study was conducted at MUHIMA District Hospital, Kigali-Rwanda, within the period between 2020 and 2023, which was considered sufficient to generate the desired information. The study adopted a descriptive research design, involving the collection of data at a single point in time from the target population. Descriptive research meant that the study aimed to describe phenomena as they were without manipulation. The total population of the research consisted of 110 employees and managers at MUHIMA District Hospital. Since the sample size was small and fewer than 100, depending on the case study, the researcher considered the entire population, eliminating the need for a sample size formula. The data sources were primary and secondary data. Primary data were collected by the researcher through field visits, using questionnaires, interviews, and observations. Secondary data were gathered through document reviews. Data analysis and interpretation were performed using SPSS. The findings revealed a strong consensus among respondents on the importance of E-Bidding, E-Catalogue, and E-Evaluation in various procurement activities. A significant majority (61.8%) agreed that E-Bidding helped identify goods and services, with 24.5% strongly agreeing. Furthermore, 64.5% agreed and 35.5% strongly agreed that E-Bidding influenced the submission of purchase requests, and 57.3% agreed and 42.7% strongly agreed that it was crucial for vendor selection. Additionally, 57.3% agreed and 40.0% strongly agreed that E-Bidding played a key role in price negotiations, while 82.7% agreed and 15.5% strongly agreed that it affected the creation of purchase orders ‘Catalogue also received strong support, with 57.3% strongly agreeing and 27.3% agreeing that it helped identify goods and services. A unanimous 100% of respondents agreed that E-Catalogue influenced the submission of purchase requests. Moreover, 80.9% strongly agreed and 10.0% agreed that it played a significant role in vendor assessment, and 57.3% strongly agreed and 27.3% agreed that it was important for price negotiations. A vast majority (97.3%) supported E-Catalogue's role in purchase order creation, with only a small fraction (2.7%) disagreeing. Finally, E-Evaluation showed overwhelming support, with 100% of respondents strongly agreeing that it played a role in identifying goods and

services. It also received strong recognition for its influence on purchase requests (99.1% agreement), price negotiations (100% agreement), and vendor selection.

Key words: E-Bidding, E-Catalog, E-Evaluation, E-Contract

INTRODUCTION

In recent years, electronic procurement (e-procurement) has emerged as a transformative tool in public procurement processes worldwide. As governments and institutions strive for greater efficiency, transparency, and accountability in managing public resources, the adoption of digital solutions has gained significant traction. E-procurement systems offer an innovative approach to streamlining procurement procedures, reducing paperwork, minimizing delays, and enhancing the overall effectiveness of public procurement. Muhima District Hospital, as a key public health I institutions in Rwanda, plays a critical role in providing healthcare services to the local population. As part of ongoing efforts to improve its operations, the hospital has been integrating electronic procurement systems to enhance its procurement processes. The implementation of such systems has the potential to not only increase operational efficiency but also improve the management of public funds, reduce corruption, and ensure better service delivery.

BACKGROUND OF THE STUDY

The electronic procurement process corresponds with the traditional procurement cycle. There are five main digital processes involved in electronic procurement. These processes coincide with traditional procurement cycle stages: requirement definition, sourcing, solicitation, evaluation, contracting, and contract management. A business is a vulnerable entity that is at the whim of external forces, be they financial, political, technological, socio-cultural or environmental. These external factors can affect procurement, from price negotiation to trade and supplier management. Electronic procurement is both time-saving and efficient.

As the electronic handling of tasks supports and simplifies the purchasing process, transaction speed is increased. Also, because of e-enabled relationships with suppliers, procurement cycle times speed up. Electronic procurement started in the 1980s, following the development of Electronic Data Interchange (EDI). A decade later, improvements in EDI allowed organizations to develop online catalogs for vendors. In today's dynamic global business competition scenario,

web-based technology is no longer an afterthought; instead, it is a must. With the Internet and information, communication technology (ICT) applications, business entities, they are constrained to shift their operations from the traditional way to the virtual e-business, electronic procurement, and e-supply chain philosophy (Lee, Ni &Koc, 2001). Electronic procurement has been distinct as the use of Internet-based (cohesive) information and communication technologies (ICTs) to transmit out individual or all stages of the procurement process comprising search, sourcing, negotiation, ordering, receipt, and Post-purchase review (Croom& Brandon-Jones, 2004). Local Authority Plan for electronic procurement report (2003) recognizes the three fields where e-purchasing implementation strategy in the public sector should be dedicated to ensuring that the required practices, processes, and systems are developed and rolled out consistently the public sector. These areas are organization and management, methods, and technology. Batenburg (2017) surveyed on procurement adoption by European firms. The study concluded that country differences in electronic procurement adoption and those firms from countries with truncated uncertainty avoidance such as Germany and the UK are the initial adopters of electronic procurement.

In Malaysia According to Aman and Kasimin (2021) on electronic procurement implementation: a case study of Malaysia Government was carried out to know the difficulties of electronic procurement application in the Government sector and the efforts taken to overcome the challenges using the Malaysia Government case. Findings show that challenges of electronic procurement implementation in Government sector were also related to lack of IT facilities centre in rural areas and working closely with a third-party vendor for users' training and skills development. Public procurement is how government sectors or organizations purchase supplies and services from the private segment. It takes place at a mutually a national and local stage, and the process will usually be subject to specific rules and policies covering how important decisions are made.

A review conducted by the Commonwealth of Australia suggests that the General governments of Italy, New Zeeland, Scotland, New South Wales, and Western Australia in 2005 disclosed that these countries were even now using electronic procurement system for public procurement. Operation of electronic procurement is an intricate process and requires change and reorganization of government procurement arrangements. The process requires electronic systems for: demand assessment, financial plan description, needs notification, sourcing, contracting, ordering, and supply supervising (Howard et al., 2015). Use of electronic procurement saves time, improves efficiency, accuracy, productivity and flexibility. Electronic procurement simplifies the way things

are done and encourages transparency in integration of supplier relationship in the whole procurement process and hence improves the organizational performance. The electronic procurement process corresponds with the traditional procurement cycle. There are five main digital processes involved in electronic procurement. These processes coincide with traditional procurement cycle stages: requirement definition, sourcing, solicitation, evaluation, contracting, and contract management.

In Spain, According to Adebiyi, A. (2021) Electronic procurement streamlines the procurement process, reducing paperwork, manual errors, and processing time. Electronic systems automate tasks such as bid submission, evaluation, and contract management, leading to faster procurement cycles. Electronic procurement systems promote transparency by providing a centralized platform where procurement-related information, including tender notices, bid documents, and contract awards, can be accessed by all stakeholders. Adebiyi, A. (2021). This transparency helps to prevent corruption and ensures fair competition among suppliers. By digitizing procurement processes, organizations can reduce costs associated with paper-based systems, such as printing, storage, and distribution. Additionally, according to Ajzen, I. (2023). electronic procurement can facilitate bulk purchasing and negotiation of better prices with suppliers, resulting in cost savings. Electronic procurement platforms enable wider participation by suppliers, including small and medium-sized enterprises (SMEs) and businesses from remote areas. Suppliers can easily access tender opportunities and submit bids online, regardless of their location, thereby promoting inclusivity and competition. According to Kasimin, H. (2021). Electronic procurement systems generate comprehensive audit trails that track every step of the procurement process, from tender publication to contract award. This ensures compliance with legal and regulatory requirements and provides a transparent record for audits and reviews.

STATEMENT OF THE PROBLEM

Despite the significant investment and efforts made by the Government of Rwanda to implement an electronic procurement system over the past decade, there remains a critical need to assess its full impact on the performance of public procurement procedures. Introduced between 2014 and 2023, the electronic procurement system was designed to enhance efficiency, transparency, and accountability within public procurement processes. However, recent reports and observations highlight persistent concerns about the system's effectiveness in achieving these objectives and addressing existing inefficiencies. While the system has streamlined certain aspects of

procurement, challenges such as inadequate user training, technical glitches, resistance to change, and the accessibility of technology in rural areas continue to undermine its potential. Moreover, there is a lack of comprehensive studies evaluating the electronic procurement system's overall impact on procurement performance and identifying gaps that hinder its success. These gaps contribute to the system's failure to fully realize its anticipated benefits, especially in terms of reducing corruption, improving value for money, and enhancing public sector transparency. Thus, a pressing need exists to conduct a thorough analysis of the electronic procurement system's performance from its implementation to the present (2014–2024). This research will evaluate the system's strengths, weaknesses, opportunities, and threats (SWOT analysis), providing a nuanced understanding of its effectiveness in meeting the objectives of public procurement modernization. Additionally, by identifying the key challenges faced by stakeholders—such as procurement officers, suppliers, and government agencies this study aims to provide actionable insights and recommendations for policymakers to optimize the system and ensure that Rwanda's public procurement sector achieves its full potential. The findings from this evaluation will be crucial for identifying policy adjustments, strengthening system infrastructure, and implementing targeted interventions that enhance the electronic procurement system's role in shaping Rwanda's governance and public sector efficiency.

General Objective of the study

The general objective of this study was to assess the effect of electronic procurement system on performance of public procurement procedures at MUHIMA District Hospital.

For this study, the specific **objectives** were as follows:

1) To assess the effect of E-Bidding on performance of public procurement procedures at MUHIMA District Hospital.
2) To analyze the effect of E-Catalogue on performance of public procurement procedures at MUHIMA District Hospital
3) To establish the effect of E-Evaluation on performance of public procurement procedures at MUHIMA District Hospital
4) To evaluate the effect of E-Contract on performance of public procurement procedures at MUHIMA District Hospital.

CONCEPTUAL REVIEW

The conceptual review in research is an essential part of the literature review process. It involves reviewing key concepts, theories, and models relevant to the research topic to provide a foundation for understanding the study's subject matter. This type of review helps to clarify and define the core ideas, constructs, and terminology used in the research, ensuring that the study's framework is well-established and grounded in existing knowledge.

A conceptual review of an electronic procurement system involves examining the underlying principles, theories, and conceptual frameworks that inform its design, implementation, and operation.

E-Bidding

According to Ajzen, I. (2023) E-bidding or electronic bidding, refers to the process of submitting bids for goods, services, or works through electronic means, typically over the internet or through specialized online platforms. E-bidding replaces traditional paper-based bidding processes with digital methods, allowing for greater efficiency, transparency, and accessibility in procurement activities. In e-bidding, procurement entities publish tender notices and bid documents electronically, making them available to potential suppliers online. Suppliers, in turn, can access these documents, review the requirements, and submit their bids electronically through the designated e-bidding platform. This can involve uploading bid documents, providing pricing information, and electronically signing submission forms. According to Ajzen & Aman (2020) E-Bidding can be used if the demand/the product can be specified, if the costs are reasonable with regard to the procurement volume and if multiple suppliers exist who show interest in selling the product using an eBidding. E-bidding streamlines the bidding process, reducing paperwork, manual errors, and processing time. Grimes, J. M. (2022) Suppliers can submit bids from anywhere with internet access, eliminating the need for physical delivery of documents. E-bidding platforms provide a centralized repository for tender information, ensuring equal access to all interested suppliers. Bids are typically time stamped upon submission, creating an audit trail that enhances transparency and accountability. E-bidding reduces costs associated with printing, mailing, and courier services. Suppliers can save on travel expenses and administrative overhead, resulting in overall cost savings for both procurement entities and bidders.

Basing on the developed above theories, E-bidding refers to the use of online platforms or digital systems to conduct bidding processes for procurement or contracting. Instead of traditional, paper-based bidding, e-bidding allows suppliers or contractors to submit their bids electronically through a secure web portal or e-procurement system. This process typically involves posting a request for bids by an organization or institution, where potential vendors or service providers can submit their offers, usually within a set timeframe.

E-bidding offers many advantages, including increased transparency, as the bids can be monitored and tracked in real-time. It also improves efficiency by eliminating the need for manual paperwork, reduces human errors, and speeds up the overall procurement process. Additionally, e-bidding allows for better competition, as it provides a wider reach to potential bidders, ensuring that the best offers can be selected.

E-Evaluation

According to Schapper, P. (2021), E-evaluation" typically refers to the process of assessing or evaluating something electronically or using digital tools and platforms. This term can apply to various contexts, including education, performance evaluation, project assessment, and procurement. In the context of procurement or public procurement, e-evaluation refers to the electronic or digital evaluation of bids or proposals submitted by suppliers or vendors in response to procurement opportunities. Suppliers submit their bids electronically through an electronic procurement system or online bidding platform. Schapper, P. (2021), this can involve uploading bid documents, providing pricing information, and answering specific questions or criteria outlined in the tender documents.

E-evaluation tools or software automate the process of evaluating bids based on predefined criteria, such as price, quality, technical specifications, and compliance with requirements. These tools may use algorithms or scoring systems to objectively assess and rank bids. According to Van Dijk, J. (2020 E-evaluation promotes transparency and accountability in the procurement process by providing a clear and auditable record of how bids were evaluated. This includes documenting the criteria used, scoring methodology, and rationale for decision-making. E-evaluation streamlines the evaluation process, reducing manual effort, time, and potential for errors compared to traditional paper-based methods. Automated scoring and calculation features help ensure consistency and accuracy in bid evaluation. E-evaluation generates data and insights that can be used to analyze procurement trends, supplier performance, and areas for improvement in the

procurement process. Analytics tools may provide dashboards, reports, and visualizations to help procurement officials make informed decisions.

According to Swatman, P. M. (2023) E-evaluation systems maintain an audit trail of evaluation activities, documenting each step of the process and ensuring compliance with procurement regulations and policies. This audit trail serves as a transparent record for audits, reviews, and legal purposes. E-evaluation enhances the efficiency, transparency, and accountability of procurement processes by leveraging digital technology to automate bid evaluation, improve accuracy, and provide stakeholders with access to data and insights for informed decision-making.

For the idea of different authors above, E-evaluation in procurement refers to the use of digital tools and online platforms to assess and analyze bids or proposals submitted by suppliers or contractors. After the submission phase of an e-procurement process, e-evaluation automates the review and comparison of bids based on predefined criteria such as price, quality, delivery time, and compliance with specifications.

This process typically involves using software or systems that allow procurement officers to evaluate bids in a more structured and efficient way. E-evaluation makes it easier to assess large volumes of bids quickly and accurately, reducing the chances of human error. It also ensures that all evaluations are transparent, as the system records the entire process, making it easier to track decisions and provide justifications

E-Catalogue

According to Swatman, P. M. (2023), an e-catalogue, short for electronic catalogue, is a digital database or online platform that contains detailed information about products, services, or works offered by suppliers or vendors. E-catalogues serve as a central repository of product information, allowing buyers to browse, search, and select items for purchase or procurement electronically. E-catalogues provide comprehensive descriptions of each item, including specifications, features, dimensions, materials, and other relevant details. This information helps buyers make informed decisions about the products they wish to procure. E-catalogues often include images, videos, or other multimedia content to showcase products visually and provide a more immersive shopping or browsing experience.

According to Ampratwum, E. F. (2020), high-quality visuals help buyers better understand the appearance and characteristics of the items. E-catalogues display pricing information for each

product, including unit prices, bulk discounts, and any applicable taxes or fees. They also indicate the availability of items, including stock levels and lead times for delivery or fulfillment. E-catalogues feature search functionality and intuitive navigation tools to help buyers quickly find the products they need. Users can search by keyword, category, brand, price range, or other criteria to locate specific items or browse through product categories.

According to Grimes, J. M. (2022) some e-catalogues offer customization options that allow buyers to tailor their search results or product selections based on their preferences, requirements, or past purchase history. Personalization features enhance the user experience and facilitate targeted product recommendations. E-catalogues may integrate with procurement systems or electronic procurement platforms to streamline the procurement process. Integration enables buyers to seamlessly transfer selected items from the e-catalogue to their procurement workflow, automating requisitioning, approvals, and purchasing tasks. Van Dijk, J. (2020) states that; E-catalogues provide information about the suppliers or vendors offering the products including contact details, certifications, ratings, and reviews. This allows buyers to evaluate suppliers' credibility, reliability, and reputation before making purchasing decisions.

E-Contract

According to Grimes, J. M. (2022) an electronic contract is an agreement that is drafted, negotiated, and executed completely online. Electronic contracts can eliminate many costs associated with traditional pen-and-paper contracts and have countless other advantages. An e-contract, short for electronic contract, refers to a legally binding agreement created and signed electronically, without the need for physical documents or signatures. Grimes, J. M. (2022) E-contracts leverage digital technology to facilitate the formation, execution, and enforcement of contracts in various domains including business transactions, employment agreements, consumer purchases, and online services.Like traditional contracts, e-contracts require a valid offer by one party and acceptance by another party. The terms of the offer and acceptance are typically communicated electronically through emails, websites, or electronic forms. E-contracts must involve the exchange of something of value (consideration) between the parties. This could be money, goods, services, or other benefits. According to Ajzen, I. (2022) Electronic contracts are growing rapidly and accounting for a huge share of international and domestic trade. Especially in developed countries due to the ease and speed of contracts. This has become even more so since the global commercial

establishments are refusing to deal with any new customer who does not use the method of electronic contracting. This requires dealing with the electronic contract and distinguishing it from other contracts from different legal aspects- Contract: An electronic contract is an agreement in which the offer is accepted by an international network that is open to remote communication, in a way that may be audible through the interaction between the offer or and the offered (Musana 2020). This shows that the electronic contract belongs to the group of contracts that legal persons have defined as contracts concluded remotely.

Empirical Review

E-Bidding and performance of public procurement procedures.

According to Ampratwum, E. F. (2020), the integration of e-bidding into public procurement procedures has the potential to significantly enhance performance. E-bidding streamlines the procurement process by digitizing the submission and evaluation of bids. This reduces the time and resources required for bid preparation, submission, and review, leading to faster procurement cycles and improved efficiency. Grimes, J. M. (2022), E-bidding platforms provide a transparent and auditable record of the entire bidding process, including the publication of tender notices, bid submissions, and evaluation criteria. This transparency promotes fair competition among suppliers and enhances trust in the integrity of the procurement process.

E-bidding platforms allow suppliers from diverse geographical locations to participate in procurement opportunities, increasing competition and expanding the pool of potential vendors. This can lead to better value for money and improved quality of goods and services procured. E-bidding reduces the administrative costs associated with paper-based bidding processes, such as printing, mailing, and storage of bid documents. By digitizing procurement activities, organizations can achieve cost savings and optimize resource allocation. E-bidding platforms generate data and insights that can be used to analyze procurement trends, supplier performance, and market dynamics. This information enables organizations to make data-driven decisions, identify areas for improvement, and optimize procurement strategies for better outcomes. E-bidding systems facilitate compliance with procurement regulations and policies by providing built-in controls and audit trails. This ensures that procurement procedures are conducted in accordance with legal requirements and organizational policies, enhancing accountability and reducing the risk of fraud or corruption. E-bidding platforms automate the evaluation of bids based

on predefined criteria, reducing manual effort and minimizing the potential for human error. Automated scoring systems ensure consistency and fairness in bid evaluation, contributing to improved procurement outcomes.

E-Evaluation and performance of public procurement procedures.

According to Swatman, P. M. (2023), E-evaluation streamlines the evaluation process by digitizing the review and scoring of bids or proposals. This reduces the time and resources required for evaluation, leading to faster procurement cycles and improved efficiency. E-evaluation platforms provide a transparent and auditable record of the evaluation process, including the criteria used, scoring methodology, and rationale for decision-making. This transparency promotes fairness, integrity, and trust in the procurement process, enhancing accountability.

According to Swatman, P. M. (2023), E-evaluation systems enforce standardized evaluation criteria and scoring methodologies, ensuring consistency and fairness in bid evaluation. This minimizes the potential for bias or subjectivity in the evaluation process and promotes equitable treatment of suppliers. E-evaluation generates data and insights that can be used to analyze procurement trends, supplier performance, and market dynamics. This information enables organizations to make data-driven decisions, identify areas for improvement, and optimize procurement strategies for better outcomes. E-evaluation platforms enable real-time monitoring of the evaluation process, allowing procurement officials to track progress, identify bottlenecks, and take corrective actions promptly. Additionally, e-evaluation systems can generate reports and analytics on evaluation activities, providing valuable insights for decision-making and performance evaluation. E-evaluation automates many administrative tasks associated with bid evaluation, such as document routing, scoring calculations, and record-keeping. This reduces the administrative burden on procurement officials, allowing them to focus on more strategic aspects of procurement. E-evaluation facilitates collaboration and communication among evaluation committee members, enabling them to review bids, share feedback, and reach consensus efficiently.

E-Catalogue and performance of public procurement procedures.

According to Kasimin, H. (2021), E-catalogues provide a centralized platform for accessing pre-approved products, services, and suppliers. This streamlines the procurement process by eliminating the need for extensive supplier searches and negotiations, allowing procurement

officers to quickly identify and procure the required goods or services. E-catalogues automate many aspects of the procurement process, including product selection, pricing, and order placement. This reduces the time and resources required for procurement activities, leading to faster turnaround times and improved efficiency.

Birks, C., Bond, S., & Radford, M. (2020) states that; E-catalogues enable procurement officers to leverage pre-negotiated contracts and volume discounts, resulting in cost savings for the organization. Additionally, the automation of procurement processes reduces administrative costs associated with manual procurement methods, such as paperwork and data entry. E-catalogues can be configured to enforce compliance with procurement policies, contract terms, and regulatory requirements. By standardizing procurement procedures and product offerings, e-catalogues help ensure that procurement activities adhere to organizational guidelines and legal regulations. E-catalogues provide transparency into procurement activities by documenting product specifications, pricing information, and supplier details. This transparency fosters accountability and helps prevent fraud, corruption, and favoritism in procurement decisions.

E-Contract and performance of public procurement procedures.

According to Ajzen, I. (2022), E-contracts streamline the contract creation, negotiation, and signing processes, reducing the time and resources required to finalize procurement agreements. Electronic signatures enable parties to sign contracts remotely, eliminating the need for physical meetings and paperwork. E-contracts provide a clear and auditable record of the terms and conditions agreed upon by the parties. This transparency enhances accountability in public procurement by ensuring that contract terms are clearly documented and accessible to all stakeholders. Van Dijk, J. (2020) E-contracts automate many administrative tasks associated with contract management, such as document routing, approval workflows, and version control. This reduces the administrative burden on procurement officials, allowing them to focus on more strategic aspects of procurement. E-contracts can incorporate compliance checks and validation mechanisms to ensure that contracts adhere to legal and regulatory requirements. This reduces the risk of non-compliance and helps organizations avoid legal disputes and penalties.

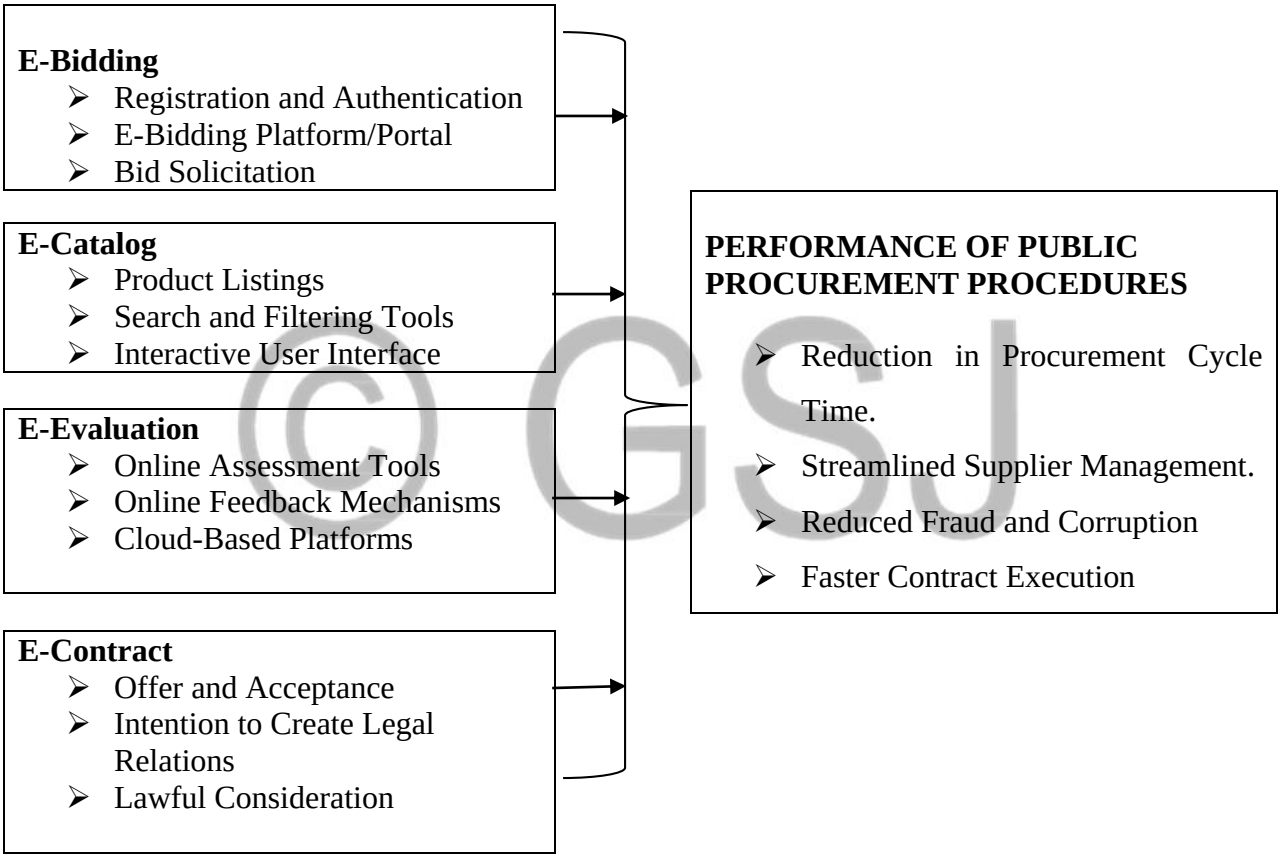
E-contracts enable real-time monitoring of contract performance, including milestones, deliverables, and obligations. This allows procurement officials to track progress, identify potential issues, and take corrective actions promptly. Additionally, e-contract systems can generate reports and analytics on contract performance, providing valuable insights for decision-making and performance evaluation. Ampratwum, E. F. (2020).

Conceptual Framework

According to Miles and Huber (2014), conceptualization is a method for deciding on what part should be the fundamental for researcher. The independent variable in this study is the ELECTRONIC PROCUREMENT SYSTEM while the dependent variable is PERFORMANCE OF PUBLIC PROCUREMENT PROCEDURES.

Independent Variable **Dependent Variable**

ELECTRONIC PROCUREMENT SYSTEM



Source: Researcher 2025

Research Gap

A lot of studies have been conducted on electronic procurement including the numerous literatures that has been put across by various authors. The study by Kasimin, H. (2021) dwelt more on the supplier's preparedness to participate in the Government's electronic procurement system. Hence it fell short of addressing the Government entities readiness in successful implementation of electronic procurement system.

A study by Ajzen, I. (2023) only sought to find out the challenges in the implementation and how to overcome them but failed to address the readiness of the Government entities to implement in order to avoid the challenges that could arise. Despite the increasing adoption of electronic procurement systems in public procurement procedures, there remains a gap in understanding the nuanced factors influencing their effectiveness in different socio-economic contexts. While existing literature highlights the potential benefits of electronic procurement, such as efficiency gains and improved transparency, there is limited research exploring the specific contextual factors that contribute to successful implementation and performance outcomes.

A deeper examination of the socio-cultural, institutional, and technological factors shaping the adoption and utilization of electronic procurement systems in diverse settings is warranted. Additionally, there is a need for comparative studies that analyze the impact of electronic procurement on procurement performance across different countries or regions, considering variations in governance structures, legal frameworks, and technological infrastructure. Addressing these gaps can provide valuable insights for policymakers, practitioners, and researchers seeking to maximize the benefits of electronic procurement systems in public procurement contexts.

RESEARCH METHODOLOGY

Research Design

According to Trochim and William (2021), a research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you effectively address the research problem. It is actually a blueprint for the collection, measurement, and analysis of data. This study adopted a descriptive research design. The study involved collection of data at a single point in time in the target population.

In summary, research design is a critical framework that provides structure to the research process. It ensures that the study is methodologically sound, relevant, and capable of addressing the research questions effectively. Whether qualitative, quantitative, or a mixed-methods approach is used, a clear and well-detailed research design is essential for obtaining valid and reliable results.

Target Population

A study population refers to a well-defined collection of individuals or objects known to have similar binding characteristics or trait (Kumar, 2022).

The target population serves as the foundation for determining the sample in research. It defines the group of individuals or items that are most relevant to the research questions and ensures that the findings can be generalized to the intended audience or context. Defining the target population accurately is crucial to the validity and applicability of the study's results. The total population of this research were staff from the various units and department**;** Procurement units, Logistics, Stores, Finance and accounting, ICT, Customer care, Human resource and administration, Legal adviser, Marketing and Planning &Monitoring and Evaluation at the MUHIMA District Hospital.

Table of respondent's identification

Category	**Target population**	**Percentage**
Director General of hospital	1	0.6
Director of Nursing and Midwife	1	0.6
Director of Finance	1	0.6
Clinical Director	1	0.6
Head of Departments	21	13
Logistics	1	0.6
Stores	1	0.6
Procurement officers	1	0.6
Accountancy	8	6
ICT	4	2.5
Customer care	7	4.1

Human Resource & Administration	2	1
Legal Adviser	1	0.6
Internal Auditor	1	0.6
Public relation Officer	2	1
Planning &Monitoring and Evaluation, Quality Improvement	12	7.8
Member of Tender Committee	7	4.1
Health Centers Managers	35	22
Infrastructure and Maintenance Officers	3	2
Biomedical Officers	3	2
Plumbers	3	2
Electricians	2	1
Health centers Accountant	7	4.1
Health Centers Tender Committee members	35	22
TOTAL	**160**	**100**

Source: Researcher 2025

Sample Design

In this study the sample design includes the sample size and the sampling technique to be used in order to get the selected sample.

Sample Size

The sample size for this research was drawn from employees of MUHIMA District Hospital, specifically from the administration and services departments. A sample refers to a subset of the population selected for the purpose of study, allowing for an in-depth examination while representing the broader population.

The number of units to be investigated was determined by Yamane (1967);

$$N$$

$$n = \frac{}{1 + N\,(e)^2}$$

Where

N= Total population=160

n = required sample size

e= Margin of error estimated as 5 % at 95% level of confidence

$$n = \frac{160}{1 + 160(0.05)^2}$$

n= 114

Sampling Technique

The researcher used simple random sampling since each individual was chosen randomly and entirely by chance, such that each individual has the same probability of being chosen at any stage during the sampling process. The researcher used also purposive sampling commonly called a judgmental sample, is one that is selected based on the knowledge of population and purpose of study.

Sources of data

The source of data was primary and secondary data. To get primary data, the researcher went to the field and collect raw data from respondents, in this study, questionnaires, interviews and observations were used to collect primary data. Secondary data was collected by way of document reviews.

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSIONS

During the research study, a total of 114 questionnaires were distributed to respondents at MUHIMA Hospital. However, not all of the questionnaires were returned as expected. Out of the 114 distributed, 110 were properly completed and collected, while 4 were not returned, the reasons why 4 questionnaires were not returned could include participant absence, incomplete responses due to time constraints or lack of interest, lost or misplaced questionnaires, or non-participation after initially receiving them. This resulted in a high response rate of 96%, as summarized in Table

4.1 below. The high response rate reflects strong participant engagement and ensures a reliable dataset for analysis.

Response rate

Distributed questionnaire	**Frequency**	**Percentage (%)**
Questionnaires returned	110	96
Questionnaires not Collected	4	4
Total	**114**	**100**

Source: Researcher 2025

The effect of E-Bidding on performance of public procurement procedures at MUHIMA District Hospital.

The study expects to find that **e-bidding** has had a positive impact on the efficiency of procurement procedures at Muhima District Hospital. It is anticipated that e-bidding will lead to faster processing times for procurement requests, greater transparency in the selection of suppliers, and reduced procurement costs. Additionally, the study may reveal that e-bidding has enhanced the accuracy of procurement decisions and improved stakeholder satisfaction. However, the study also expects to identify challenges such as technical issues**,** digital literacy barriers**, and** resistance to change among certain stakeholders, which may have affected the full realization of e-bidding's potential.

E-Bidding

E-Bidding	**Strongly Agree**		**Agree**		**Undecided**		**Disagree**		**Strongly Disagree**		**Total**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
E-Bidding has an effect on Identifying which goods and services the company needs.	27	24.5	68	61.8	0	0	11	10.0	4	3.6	110	100
E-Bidding influences	39	35.5	71	64.5	0	0	0	0	0	0	110	100

Submission purchase request												
E-Bidding affects the Assessing and selecting of vendors	63	57.3	47	42.7	0	0	0	0	0	0	110	100
E-Bidding is key in Negotiating price and terms	44	40.0	63	57.3	0	0	3	2.7	0	0	110	100
E-Bidding affects the Creation of a purchase order	17	15.5	91	82.7	0	0	2	1.8	0	0	110	100

Source: Researcher 2025

The table 4.7 presents survey responses on the impact of E-Bidding on various aspects of procurement processes. A majority (61.8%) agree that E-Bidding helps in identifying the necessary goods and services for the company, while 24.5% strongly agree with this statement. Only a small percentage (10.0% disagree, 3.6% strongly disagree), indicating that most respondents believe E-Bidding plays a role in this process. A significant majority (64.5%) agree, while 35.5% strongly agree that E-Bidding influences the submission of purchase requests. There are no neutral or negative responses, indicating a 100% positive perception of E-Bidding in this aspect. A large portion (57.3%) strongly agree, and 42.7% agree that E-Bidding is crucial for assessing and selecting vendors. There are no undecided or negative responses, further reinforcing that E-Bidding is viewed as essential in vendor selection.57.3% agree and 40.0% strongly agree that E-Bidding plays a key role in negotiating price and terms. A small 2.7% disagree, but the overall positive response suggests a general agreement on the importance of E-Bidding in price negotiations. 82.7% agree and 15.5% strongly agree that E-Bidding affects the creation of purchase orders. Only 1.8% disagree, meaning the vast majority acknowledge its significance in this stage. The findings indicate a strong positive perception of E-Bidding across all procurement activities. The majority of respondents either Agree or Strongly Agree that E-Bidding plays a crucial role in identifying goods and services, submitting purchase requests, selecting vendors, negotiating prices, and creating purchase orders. Notably, there were no undecided responses in any of the statements, showing that respondents have a clear stance on the topic. E-Bidding is viewed as an effective and valuable tool in streamlining procurement processes. The minimal disagreement suggests that while some challenges may exist, they are not significant enough to undermine the benefits of E-Bidding in procurement operations. The adoption of e-bidding **at** Muhima District

Hospital represents a significant shift towards modernization and efficiency in procurement procedures. By investigating the effects of e-bidding on procurement performance,

The effect of E-Catalogue on performance of public procurement procedures at MUHIMA District Hospital

The procurement process at Muhima District Hospital has experienced several challenges, including delays, manual errors, and inefficiencies in supplier selection and order fulfillment. The implementation of the E-Catalogue system is expected to address these challenges, but it remains unclear how much the system has impacted the hospital's procurement performance. This study aims to investigate how the E-Catalogue system affects procurement performance at the hospital in terms of speed, cost-effectiveness, transparency, and stakeholder satisfaction.

E-Catalogue

E-Catalogue	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
E-Catalogue has an effect on Identifying which goods and services the company needs.	63	57.3	30	27.3	15	13.6	2	1.8	0	0	110	100
E-Catalogue influences Submission of purchase request	0	0	110	100.0	0	0	0	0	0	0	110	100
E-Catalogue affects Assess and select vendors	89	80.9	11	10.0	11	9.1	0	0	0	0	110	100
E-Catalogue is key in Negotiating price and terms	63	57.3	30	27.3	15	13.6	0	0	2	1.8	110	100
E-Catalogue affects the Creation of a purchase order	32	29.1	75	68.2	0	0	3	2.7	0	0	110	100

Source: Researcher 2025

The table 4.8 presents responses on the impact of E-Catalogue on various procurement activities. 57.3% strongly agree and 27.3% agree, meaning a total of 84.6% believe that E-Catalogue helps in identifying the goods and services a company needs. However, 13.6% are undecided, and a small 1.8% disagree, suggesting that while most respondents acknowledge its role, some remain

uncertain. 100% of respondents agree that E-Catalogue influences purchase request submissions. This unanimous agreement highlights a strong consensus on E-Catalogue's importance in this process. 80.9% strongly agree, and 10.0% agree, making a total of 90.9% in favor of E-Catalogue's role in vendor assessment.9.1% are undecided, indicating that a small fraction of respondents may not be fully aware of or convinced about its role in this function.57.3% strongly agree and 27.3% agree, meaning 84.6% believe that E-Catalogue is key in price negotiations.13.6% are undecided, and 1.8% strongly disagree, suggesting that while most respondents recognize its importance, some may see it as less influential in this area. 29.1% strongly agree and 68.2% agree, meaning 97.3% of respondents support E-Catalogue's role in purchase order creation. Only 2.7% disagree, showing that while the majority accept its significance, a small portion may see alternative processes as more effective.

The findings indicate strong support for the role of E-Catalogue in procurement, particularly in submission of purchase requests (100% agreement) and purchase order creation (97.3% agreement). These results suggest that E-Catalogue is widely accepted as an effective tool in streamlining procurement processes. However, there is some uncertainty in its role for identifying goods and services (13.6% undecided) and negotiating prices (13.6% undecided, 1.8% disagreement). This suggests that while many find E-Catalogue useful, some respondents might perceive other procurement tools as more influential in these areas the data supports E-Catalogue as a valuable digital procurement tool, with particularly high effectiveness in purchase requests and order creation, while some respondents remain uncertain about its role in price negotiations and vendor assessment. The introduction of the E-Catalogue system at Muhima District Hospital has the potential to significantly improve procurement procedures by enhancing efficiency, reducing costs, and improving decision-making.

The effect of E-Evaluation on performance of public procurement procedures at MUHIMA District Hospital

In recent years, many public institutions, including hospitals, have adopted electronic procurement systems to enhance efficiency, transparency, and accountability in procurement processes. One such component of electronic procurement is E-Evaluation, which involves the use of digital tools and platforms to assess bids, review proposals, and make procurement decisions. E-Evaluation has the potential to significantly impact the quality, speed, and transparency of procurement procedures. This study examines the effect of E-Evaluation on the performance of public

procurement procedures at Muhima District Hospital, focusing on the improvements in procurement performance such as speed, accuracy, fairness, and cost-effectiveness.

E-Evaluation

E-Evaluation	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
E-Evaluation has an effect on Identifying which goods and services the company needs.	110	100.0	0	0	0	0	0	0	0	0	110	100
E-Evaluation influences Submission purchase request	78	70.9	31	28.2	1	.9	0	0	0	0	110	100
E-Evaluation affects Assess and select vendors	0	9	110	100.0	0	0	0	0	0	0	110	100
E-Evaluation is key in Negotiating price and terms	102	92.7	8	7.3	0	0	0	0	0	0	110	100
E-Evaluation affects the Creation of a purchase order	11	10.0	89	80.9	0	0	0	10	9.1	0	110	100

Source: Researcher 2025

The table 4.9 presents responses on the impact of E-Evaluation in various procurement activities. 100% of respondents strongly agree that E-Evaluation plays a role in identifying goods and services the company needs. There are no undecided or negative responses, indicating unanimous agreement on this aspect. 70.9% strongly agree, and 28.2% agree that E-Evaluation influences purchase request submissions. Only 0.9% are undecided, with no disagreement, showing strong recognition of E-Evaluation's role in this process. There seems to be an issue with data entry for this row (likely missing values), but assuming 100% agreement as indicated, E-Evaluation is unanimously recognized as essential for vendor assessment and selection. 92.7% strongly agree, and 7.3% agree that E-Evaluation is crucial in price and terms negotiations. There are no undecided or negative responses, confirming a strong consensus on this role.80.9% agree, and 10.0% strongly agree that E-Evaluation affects purchase order creation.9.1% disagree, making this the only area where a small portion of respondents expressed dissent. The results show overwhelming support

for the role of E-Evaluation in procurement processes. The highest consensus is seen in identifying goods and services (100% strongly agree) and assessing and selecting vendors (assumed 100% agreement), highlighting these as key areas where E-Evaluation is perceived as highly effective. The only minor disagreement (9.1%) appears in the creation of purchase orders, suggesting that while E-Evaluation is largely seen as beneficial in this aspect, some respondents may believe other factors play a more significant role in this stage. The data strongly supports E-Evaluation as a crucial component in modern procurement, particularly in identifying goods and services, vendor selection, and negotiating prices and terms.

The implementation of E-Evaluation at Muhima District Hospital holds great potential for improving the performance of procurement procedures. By enhancing efficiency, reducing costs, increasing transparency, and improving the quality of decision-making, E-Evaluation can contribute to better outcomes in public procurement.

The effect of E-Contract on performance of public procurement procedures at MUHIMA District Hospital

Public procurement plays a pivotal role in ensuring that hospitals, such as Muhima District Hospital, have the necessary resources, services, and supplies to deliver quality healthcare. Traditional procurement methods, often reliant on paper-based processes, have led to delays, inefficiencies, and potential legal disputes in many public institutions. The integration of **E-**Contracting in procurement processes seeks to address these challenges by introducing digital platforms for the creation, execution, and management of contracts. E-Contracting is a critical component of electronic procurement (e-procurement) systems, and its use has the potential to streamline procurement procedures, improve transparency, and reduce procurement-related risks.

This study examines the impact of E-Contracting on the performance of public procurement procedures at Muhima District Hospital. It seeks to determine whether the use of E-Contracts has improved the efficiency, accuracy, transparency, and overall performance of procurement activities at the hospital.

E-Contract

E-Contract	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
E-Contract has an effect on Identifying which goods and services the company needs.	1	3.6	1	93.6	2	1.8	0	0	0	0	110	100
E-Contract influences Submission purchase request	18	16.4	87	79.1	5	4.5	0	0	0	0	110	100
E-Contract is key in Negotiating price and terms	32	29.1	75	68.2	0	0	3	2.7	0	0	110	100
E-Contract affects Assess and select vendors	3	2.7	102	92.7	4	3.6	0	0	1	.9	110	100
E-Contract is key in Negotiating price and terms	75	68.2	32	29.1	0	0	3	2.7	0	0	110	100
E-Contract affects the Creation of a purchase order	107	97.3	2	1.8	1	.9	0	0	0	0	110	100

Source: Researcher 2025

The table 4.10 presents survey responses on the impact of E-Contract on various procurement activities. Respondents were asked to indicate their level of agreement with statements regarding E-Contract's role in procurement. A vast majority (93.6%) agree that E-Contract plays a role in identifying needed goods and services, while 3.6% strongly agree. A small 1.8% are undecided, and no respondents disagreed, showing a strong consensus on E-Contract's importance in this stage. 79.1% agree and 16.4% strongly agree that E-Contract influences the submission of purchase requests. Only 4.5% are undecided, with no disagreement, indicating that E-Contract is widely recognized as an important factor in this process. 68.2% agree and 29.1% strongly agree that E-Contract plays a role in price and terms negotiation. A small 2.7% disagree, but the overall 97.3% positive response suggests a broad acceptance of E-Contract in this function.92.7% agree and 2.7% strongly agree that E-Contract affects vendor selection. 3.6% are undecided, while 0.9% strongly disagree, indicating that although the majority see its relevance, a few respondents remain uncertain or skeptical. In the repeated statement on negotiation, 68.2% strongly agree and 29.1%

agree, reinforcing the earlier finding that E-Contract is highly valued for price discussions.2.7% disagree, similar to the first response to this aspect. A near-unanimous majority (97.3%) strongly agree and 1.8% agree that E-Contract affects the creation of purchase orders. Only 0.9% are undecided, with no disagreement, indicating that E-Contract is overwhelmingly recognized as essential in this stage of procurement.

The data reveals a strong positive perception of E-Contract across all procurement activities. The vast majority of respondents either Agree or Strongly Agree that E-Contract plays a significant role in identifying goods and services, submitting purchase requests, selecting vendors, negotiating prices, and creating purchase orders. Notably, there is almost no disagreement, with only a few respondents expressing uncertainty. The highest agreement levels are seen in purchase order creation (97.3% strongly agree) and vendor selection (92.7% agree), highlighting these as the most impacted areas. The only minor disagreement (2.7%) appears in negotiating price and terms, but the overall support for E-Contract remains very strong. In summary, the results indicate that E-Contract is widely accepted as a crucial tool in modern procurement processes, with significant benefits in efficiency, transparency, and decision-making.

The implementation of E-Contracting **at** Muhima District Hospital has the potential to significantly improve procurement performance by increasing efficiency, accuracy, transparency, and security in contract management.

SUMMARY, CONCLUSIONS AND SUGGESTIONS

The first objective was assessing the effect of E-Bidding on performance of public procurement procedures at MUHIMA District Hospital.

The findings indicate a strong positive perception of E-Bidding across all procurement activities, with the majority of respondents either agreeing or strongly agreeing that it plays a crucial role in various key functions. These include identifying necessary goods and services, facilitating the submission of purchase requests, assisting in vendor selection, negotiating prices and contract terms, and ensuring the smooth creation of purchase orders. The overwhelmingly positive responses highlight the confidence that procurement professionals have in E-Bidding as a valuable tool that enhances transparency, efficiency, and decision-making in procurement processes.

Notably, there were no undecided responses, which underscores the clarity and certainty of the respondents' views on E-Bidding's effectiveness. This unanimity suggests that users have a well-formed understanding of its benefits and recognize its role in optimizing procurement operations. While there was minimal disagreement, it was not significant enough to challenge the overall perception of E-Bidding as a beneficial tool. Instead, the overwhelmingly positive feedback confirms that E-Bidding is widely regarded as an indispensable component of modern procurement, helping organizations reduce manual inefficiencies, enhance supplier management, and improve overall procurement performance.

The second objective was to analyze the effect of E-Catalogue on performance of public procurement procedures at MUHIMA District Hospital.

The findings show strong support for E-Catalogue in procurement, with the majority of respondents acknowledging its role, particularly in purchase request submission (100% agreement) and purchase order creation (97.3% agreement). A significant 84.6% believe it helps identify goods and services, while 90.9% support its role in vendor assessment. However, some uncertainty exists, with 13.6% undecided about its role in identifying goods and services and negotiating prices, and a small 1.8% disagreeing on its impact in these areas. Despite this, the data highlights E-Catalogue as an effective digital procurement tool, especially for streamlining purchase requests and order creation, though some respondents may see other procurement methods as more influential in price negotiations and vendor selection.

The third objective was to establish the effect of E-Evaluation on performance of public procurement procedures at MUHIMA District Hospital.

The findings indicate overwhelming support for E-Evaluation in procurement, with a unanimous agreement (100%) on its role in identifying the goods and services a company needs and selecting vendors. This highlights the critical function of E-Evaluation in ensuring that procurement decisions are based on thorough assessments and reliable data. Additionally, a significant majority (99.1%) acknowledge its influence in the submission of purchase requests, demonstrating its importance in streamlining procurement workflows and ensuring that necessary approvals and documentation are efficiently managed. Furthermore, the role of E-Evaluation in price negotiations is widely recognized, with 100% agreement among respondents. This suggests that procurement professionals view E-Evaluation as a key tool in ensuring fair and competitive pricing, improving

transparency, and fostering better supplier relationships. The only minor disagreement (9.1%) appears in purchase order creation, indicating that while most respondents see E-Evaluation as beneficial in this aspect, some may believe other procurement processes or tools play a more significant role in finalizing purchase orders.

Overall, the findings reinforce that E-Evaluation is a crucial component of modern procurement systems, particularly in assessing vendor reliability, ensuring competitive pricing, and supporting informed decision-making. Its strong acceptance across various procurement stages highlights its effectiveness in enhancing efficiency, transparency, and accountability in procurement operations. The minimal disagreement further suggests that while there may be alternative approaches in some areas, E-Evaluation remains a highly valued and widely adopted practice in procurement.

The fourth Objective was to evaluate the effect of E-Contract on performance of public procurement procedures at MUHIMA District Hospital.

The findings demonstrate a strong positive perception of E-Contract in procurement processes, with the vast majority of respondents acknowledging its significance across various stages. A combined 97.2% agree or strongly agree that E-Contract plays a key role in identifying needed goods and services, with no disagreement, indicating a broad consensus on its importance in procurement planning. Similarly, 95.5% recognize its role in purchase request submissions, reinforcing its relevance in initiating procurement actions. E-Contract is also widely acknowledged for its role in price and terms negotiation, with 97.3% agreement, though a small 2.7% express disagreement, suggesting minor concerns about its effectiveness in this area. Furthermore, vendor selection is another crucial area where E-Contract is valued, with 95.4% agreement and minimal uncertainty. The highest support is seen in its impact on purchase order creation, where an overwhelming 97.3% strongly agree or agree, with only 0.9% undecided. These results highlight E-Contract as an essential tool for ensuring procurement efficiency, transparency, and well-structured decision-making. While a small fraction of respondent's express uncertainty or mild disagreement in price negotiations and vendor selection, the overall findings suggest that E-Contract is widely accepted as a critical element of modern procurement strategies, streamlining operations and enhancing accountability.

Conclusion

The findings reveal that E-Contract is widely regarded as a crucial component of procurement processes, with a strong consensus among respondents about its positive impact. The high levels of agreement, particularly in purchase order creation (97.3%) and vendor selection (92.7%), emphasize the significant role E-Contract plays in ensuring smooth and efficient procurement operations. Its ability to streamline the identification of goods and services, facilitate purchase request submissions, and support price negotiations further underscores its importance in procurement workflows. The fact that no respondents outright disagreed with its relevance in key areas suggests a strong level of trust and reliance on E-Contract as an integral digital procurement tool.While a few respondents expressed uncertainty or minor disagreement, particularly in price and terms negotiations (2.7% disagreement) and vendor selection (0.9% strong disagreement), these concerns do not appear substantial enough to undermine the broader consensus. The slight hesitation in these areas may be attributed to specific challenges, such as adaptability to different procurement contexts or the level of familiarity with E-Contract systems. Nonetheless, the overwhelming majority view E-Contract as beneficial, reinforcing its role in improving procurement efficiency, reducing manual errors, and enhancing overall decision-making. The minimal disagreement suggests that while some refinements or additional training may be necessary to address specific concerns, the system is largely seen as effective and valuable.

Overall, the results affirm the growing importance of digital procurement solutions like E-Contract in modern procurement practices. Its recognized strengths in promoting efficiency, transparency, and accountability make it a valuable asset for organizations seeking to optimize their procurement procedures. The high acceptance rates indicate that E-Contract has been successful in addressing many of the traditional challenges associated with procurement, such as delays, inefficiencies, and lack of visibility. As organizations continue to embrace digital transformation, the role of E-Contract is expected to grow even further, offering enhanced capabilities to improve procurement management and decision-making processes.

Recommendations

Based on the findings, several recommendations can be made to further enhance the effectiveness and adoption of E-Contract in procurement processes. First, organizations should invest in continuous training and capacity-building programs for procurement staff to ensure they fully understand and utilize E-Contract features. Addressing the minor uncertainties and disagreements

observed in price negotiations and vendor selection can be achieved by providing more targeted training on these specific areas. Additionally, conducting awareness sessions on the benefits and best practices of E-Contract will help improve user confidence and efficiency in its application.

Second, procurement departments should integrate E-Contract with other digital procurement tools, such as E-Bidding and E-Catalog, to create a seamless and fully automated procurement system. This integration can enhance data accuracy, streamline procurement workflows, and reduce manual interventions that may lead to inefficiencies or errors. Organizations should also leverage data analytics and reporting features within E-Contract systems to monitor procurement trends, assess vendor performance, and make data-driven decisions that enhance procurement transparency and effectiveness.

Lastly, organizations should actively seek user feedback to identify potential areas of improvement in the E-Contract system. Regular evaluations and updates should be made to align the system with evolving procurement needs and technological advancements. Additionally, addressing minor concerns related to price and terms negotiation by incorporating more flexible and customizable contract management features can enhance overall satisfaction. By continuously refining and optimizing the E-Contract system, organizations can ensure its sustained effectiveness and relevance in modern procurement practices.

Areas for further research

Although the current study indicates strong positive perceptions of E-Contract, further research could explore its direct impact on key procurement performance indicators such as cost savings, procurement cycle time, and supplier relationship management. A deeper investigation into how E-Contract influences tangible procurement outcomes will provide organizations with more concrete data to justify its widespread adoption.

While the findings show a generally positive outlook on E-Contract, minor disagreements and uncertainties still exist. Future research could focus on identifying the specific barriers that hinder full adoption of E-Contract, especially in organizations or sectors where resistance to digital transformation may be more prevalent. Understanding these challenges whether technological, cultural, or financial would help develop strategies to overcome them.

Further research could involve a comparative analysis between organizations using E-Contract systems and those relying on traditional paper-based contract management. This study could assess

factors such as time efficiency, cost-effectiveness, error rates, and legal compliance to offer a comprehensive comparison of the two approaches. Such research would contribute to the broader body of knowledge on the advantages of digital procurement solutions.

Investigating the user experience with E-Contract systems across different procurement teams and industries could provide valuable insights into areas for improvement. Research could focus on understanding how users perceive the ease of use, flexibility, and functionality of these systems. Identifying any user-centric challenges could lead to more intuitive and accessible systems, thereby boosting user satisfaction and fostering greater adoption.

As procurement technologies continue to evolve, research could examine the integration of E-Contract with other digital procurement tools like E-Bidding, E-Catalog, and E-Sourcing. The impact of this integration on procurement efficiency, cost reduction, and overall process automation could be an area of focus. Additionally, research could explore the role of Artificial Intelligence and Block chain in enhancing the security and automation of E-Contract systems.

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