

The Electronic Government Procurement System in Uganda; Challenges and Benefits

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DOI: <https://dx.doi.org/10.47772/IJRISS.2024.806199>

Received: 05 June 2024; Accepted: 21 June 2024; Published: 19 July 2024

ABSTRACT

The Public Procurement and Disposal of Public Assets Authority of Uganda (PPDA), the primary regulatory body in charge of managing public procurement and the disposal of public assets in the nation, developed the Electronic Government Procurement (e-GP) system, to address issues with the paper-based procurement system. Numerous obstacles prevent Uganda's public e-procurement or e-GP system installation from becoming effective. This study aimed to investigate the advantages and implementation difficulties of the e-GP system. It used a qualitative research approach, utilizing a desk study review methodology that involved reviewing relevant empirical literature. Data collection was focused consistently on the aim of the research, and the keywords used were specific to the goal of the study. The study identified challenges in three technological, organizational and contextual categories. These challenges include; Inadequate IT & networking infrastructure, Acceptance and usage issues, IT security issues, resistance to change, lack of training and skilled personnel and legal framework as some of the obstacles to the effective implementation of the e-GP system. The system when effectively implemented also has several benefits enhancing, transparency, mitigating the risks of corruption, reducing financial and technological risks, increasing competitiveness, minimizing business effort, offering quality bidding, promptness, cost savings, and lowering the cost of purchasing goods or services at premium pricing. The study recommends investing in infrastructure; developing comprehensive training programs for government staff on e-GP systems, procurement processes, and cybersecurity; Certification and continuous professional development for procurement professionals and Change management strategies to address resistance in order to best maximize its benefits.

Keywords: Electronic Government Procurement, Challenges, Benefits

INTRODUCTION

As part of global public procurement reforms, public e-procurement, also known as e-GP, is an inter-organizational system (IOS) designed to facilitate government-to-business and government-to-government electronic communication, information exchange, and transaction support (Vaidya & Campbel, 2016). Because it strengthens transparency, accountability, and integrity in procurement functions, e-procurement is a powerful tool that many countries have embraced to reduce corruption in public procurement (Neupane et al, 2014). As a result, most countries have recognized public participation in the government tendering

process by enhancing access to opportunities available in the government authorities, such as procurement activity (Ogot et al, 2009). The procurement function's shift towards a more strategic role in supporting supply chain and business goals has been one of the driving forces behind this development. Major changes in the status and functioning of organizational procurement have also been sparked by the introduction of the Internet as a platform for business systems. Governmental and organizational processes have been altered by information technologies. Most organizational spending is on purchases, as stated by Nelson et al. (2012).

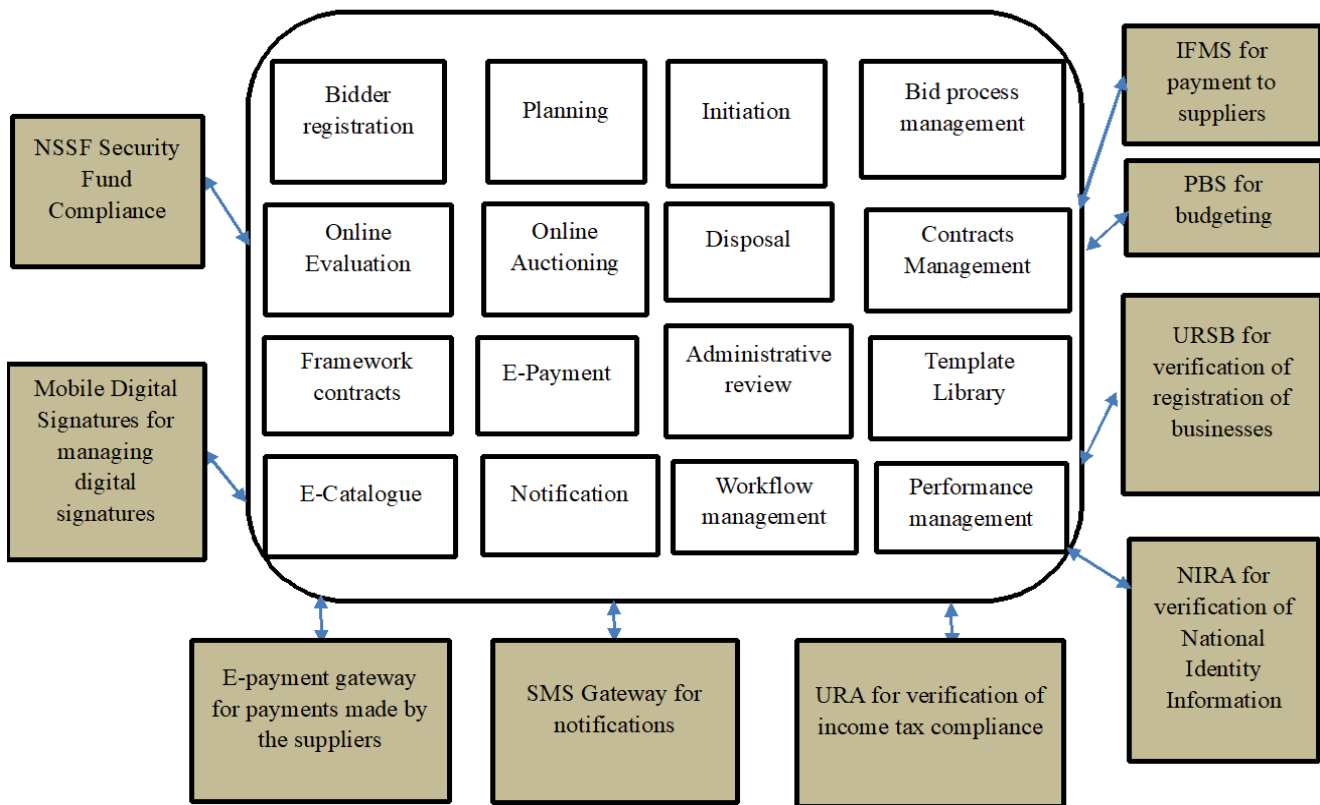
Vaidya & Campbell (2016) state that nations that have effectively adopted this procurement reform and are undoubtedly benefiting from it include the United States, the United Kingdom, Singapore, Korea, and Georgia. To yet, many nations—particularly those in Sub-Saharan Africa—have not fully realized the potential of public e-procurement because they are still having difficulty putting these systems into place. The leaders of these nations may become disinterested and demoralized if these issues are not resolved, and the process may be delayed if there are too many issues to deal with. In order to reduce corruption and have a major economic impact, Sub-Saharan African nations, who often have low scores on the corruption perception index, have shown excitement and interest in implementing e-procurement. (Somasundaram, 2008)

1.1 Electronic Government Procurement (e-GP) in Uganda

In Uganda, managing public spending is largely dependent on public sector procurement. Good governance, efficient service delivery, and sustainable development are all dependent on this. Up to 60% of all government spending in Uganda is allocated to procurement in the public sector. In Uganda's public bodies, manual procurement procedures are still the most commonly utilized. The transaction costs associated with sourcing and paying for goods and services are significantly influenced by these manual systems, so a dynamic shift to an e-procurement system is required in order to improve and expedite the delivery of services to citizens (Komakech, 2019). For instance, the Ministry of Education and Sports was the subject of an Auditor General's report (2010/2011) which revealed that 47% of procurements were delayed because of delays in award decision-making, manual approval of procurement requisitions, and bid evaluation.

The e-GP system was created by the Public Procurement and Disposal of Public Assets Authority (PPDA) in response to the drawbacks of traditional paper-based procurement methods. The PPDA Authority is the main regulatory body overseeing public procurement and the national asset disposal procedure. The e-GP system aims to promote sustainable economic growth together with transparency, accountability, and competitiveness. Additionally, it is anticipated that a reduced level of direct interaction between bidders and government officials will lessen the likelihood of misconduct in public procurement processes. The Public Procurement and Disposal of Public Assets (PPDA) Act of 2003 mandates e-procurement. Article 224(3) and Article 225(3) require that notifications of evaluated bidders and contract awards be displayed on the notice boards and websites of Public Procuring and Disposing Entities (PDEs). Moreover, PPDA regulation 39 (2) mandates that all PDEs publish notices on their websites and notice boards about contracts awarded, bid notices, shortlists, and notices of the best-evaluated bidders, among other things. The e-GP system seamlessly integrates with existing e-government IT systems, such as the Integrated Financial Management System (IFMS), for tasks like auto-generating local purchase orders, goods received notes, invoicing, and supplier payments (Oluka & Ssennoga, 2008). Additionally, the e-GP system integrates with other national systems, including the Uganda Registration Services Bureau (URSB) for business registration and company validation, as well as the Uganda Revenue Authority (URA) for TIN and Tax Clearance certificate validation, among others. The system is implemented following the National Information Security Framework of Uganda. It is designed to work seamlessly with both existing and future systems, in compliance with the Interoperability Framework issued by NITA-U. To ensure interoperability with other legacy systems, an e-Government Interoperability Framework (e-GIF) was adopted.

e-GP System



To this end, this paper aims to provide an examination of the challenges and benefits to public e-procurement implementation using a desk study qualitative systematic literature review approach as informed by (Okoli, 2015). The research question, “What are the challenges and benefits to the electronic government procurement system?” will thus be addressed.

THEORETICAL REVIEW

2.1 Technology Acceptance Model (TAM)

Hamad (2014) noted that the elements influencing the acceptance or rejection of IT adoption are identified using the Technology Acceptance Model (TAM), which Fred Davis and Richard Bagozzi created. The Theory of Reasoned Action (TRA) was modified to model technology acceptance in the initial iteration of TAM. The model considers the influence of external influences on attitudes, internal beliefs, and intentions in an attempt to understand why people adopt technology. This text talks about two important ideas: “perceived usefulness” (PU), which is about how much someone thinks using a certain system will help them do their job better, and “perceived ease of use” (PEOU), which is about how easy someone thinks it will be to use a particular system. These things decide if a person wants to use the technology, which then leads to them actually using the system (Gasco et al, 2018).

In their 2007 study, Croom & Brandon-Jones proposed a model that can be closely associated with electronic procurement. This model offers a framework for understanding how individuals within an organization accept and use e-procurement systems. In the context of e-procurement, PU refers to the belief that using an e-procurement system will enhance procurement processes, leading to cost savings, efficiency, and improved supplier relationships. When users perceive the e-procurement system as useful, they are more likely to embrace and utilize it. On the other hand, PEOU relates to how user-friendly and easy to navigate the e-procurement system is perceived to be. A system that is easy to use is likely to be accepted

and adopted more quickly by users.

Research has demonstrated that two key factors play a significant role in the successful adoption of e-procurement within government institutions. For instance, a study carried out in Zambia revealed a positive correlation between perceived ease of use and intention to use, indicating that personnel were inclined to embrace e-procurement due to the system's user-friendliness and utility (Bwalya & Mutula, 2016). Furthermore, the quality aspects of e-procurement systems, such as processing, usability, and professionalism, have been identified as influential in determining individual employee acceptance levels, thereby affirming the fundamental relationships outlined in the Technology Acceptance Model (TAM) within an e-procurement framework.

2.2 Empirical Review

In Zakari et al's (2013) study on "E-Procurement and Performance of Service Organizations in Uganda," the researchers aimed to establish the relationship between e-procurement and the performance of selected service organizations in Uganda. They used a survey design with 202 employees and found a significant relationship between e-procurement and the performance of the organizations. In a paper by Basheka et al (2012) titled "Adopting New Approaches for Public Procurement Efficiency: Critical Success Factors (CSFs) for the Implementation of e-procurement in Uganda's public sector," the authors examined the critical success factors (CSFs) for the implementation of e-procurement technologies in Uganda's public sector context. The findings of this study confirmed that in Uganda's context, the major CSFs for e-procurement include careful involvement of suppliers, systematic risk management approaches, systematic redesign of organizational processes, use of experienced consultants, and careful selection of software providers. In their 2016 paper, "Can Electronic Procurement Improve Infrastructure Provision? Evidence from Public Works in India and Indonesia," Lewis et al examine the impact of electronic procurement (e-procurement) on procurement outcomes. They gather data from India and Indonesia and analyze the effects of e-procurement adoption in both countries. The study finds that e-procurement does not lead to reduced prices but does result in quality improvements. In India, e-procurement improves road quality, while in Indonesia, it reduces delays. Additionally, regions with e-procurement are more likely to attract higher-quality contractors from outside the region. Neupane et al. (2012) examined the role of public e-procurement technology in reducing corruption in government procurement. They investigated several cases from developing countries and emerging economies, focusing on the potential of public e-procurement to enhance transparency and accountability. The results suggest that the anti-corruption features of public e-procurement, such as automation and audit trail capabilities, have the potential to increase transparency and accountability in government procurement processes.

METHODOLOGY

A qualitative research approach was employed, utilizing a desk study review methodology that involved reviewing relevant empirical literature. A Desktop search of relevant articles was systematically done based on Google Scholar. Data collection was focused consistently on the aim of the research, and the keywords used were specific to the goal of the study.

CHALLENGES FACING THE IMPLEMENTATION OF THE ELECTRONIC GOVERNMENT PROCUREMENT

The study found that the lack of technological infrastructure is a major obstacle to implementing e-procurement in government ministries. Many organizations struggle with technological deficiencies because their management is hesitant to switch from paper-based transactions to digital platforms. Adebayo & Evans

(2015) stressed the importance of technological infrastructure in e-procurement adoption, stating that without it, integrating public procurement entities would not be possible. Varying levels of technological infrastructure among government departments and suppliers affect the adoption of e-procurement. Issues related to information systems development and adoption are at the heart of the e-procurement challenge (Basheka, 2012). In Uganda, e-procurement efforts are hindered by inadequate internet connectivity and network infrastructure. Unequal access to high-speed internet in various regions challenges communication and data exchange. Additionally, many government agencies still use outdated hardware, software, and legacy systems that do not support modern e-procurement processes, leading to inefficiencies.

In a comprehensive analysis of active e-marketplaces and procurement service providers, McCue & Roman (2012) discovered that apprehensions regarding the security and privacy of data exchanged within electronic environments constituted significant barriers to the adoption of electronic procurement. Somasundaram (2008) delved into the perceptions of e-procurement risks among buyers, identifying three key dimensions: transaction risks, security risks, and privacy risks. The absence of robust security measures to safeguard data emerged as a significant impediment to the successful implementation of e-procurement, as recognized by both buyer and seller entities. The proliferation of cybercrimes in internet transactions has presented considerable challenges as a consequence of technological advancements. The rapid expansion of the internet has exposed businesses to a host of critical issues, including data breaches, internet fraud, cyber vandalism, as well as virus and malware attacks.

According to Costa et al. (2018), the utilization of digital signatures, a prerequisite for e-procurement, presents considerable complexity and cost. In addition to technological challenges, adopting digital or electronic signatures may counter the values, beliefs, and customs of stakeholders associated with handwritten signatures. Each Certification Authority (CA) establishes its own approach to implementing this technology, typically adhering to local or national regulations. Consequently, the lack of interconnection among various CAs implies that a supplier holding a certificate from one CA may not be trusted by another CA. The acquisition of necessary software or hardware from a CA is often protracted and may necessitate the physical presence of a supplier at the CA premises for approval. These challenges pose significant obstacles to the use of certificates and electronic signatures in e-procurement systems, potentially excluding suppliers from participating in business opportunities, (Ojha & Pandey, 2014). In Uganda, electronic signatures must adhere to specific criteria to be considered reliable, such as being uniquely linked to the signatory, capable of identifying the signatory, created under the sole control of the signatory, and linked to other electronic data in a manner that enables the detection of any alterations. However, meeting these criteria presents a challenge, as it requires a certain level of technical competence and incurs costs.

Patrucco and colleagues (2017) have identified that the resistance of users to changes in business processes poses a significant obstacle to the successful implementation of e-procurement systems. In many institutional settings, proposed changes are met with considerable reluctance from employees, primarily stemming from the uncertainties surrounding the proposed alterations. Literature on change management underscores the lack of widespread acceptance of proposed changes as a critical factor contributing to this resistance among employees. The implementation of e-procurement is further complicated by multiple underlying causes of resistance to change, particularly evident in the reluctance of Small and Medium Enterprises (SMEs) to adopt e-procurement due to their need for fair access to government business (Vaidya & Campbell, 2016). Additionally, conflicts may arise between reforms driven by e-government projects and those prescribed in public policies, further exacerbating resistance to change. Organizational power dynamics and politics also play a role in overshadowing the potential benefits of e-procurement, as evidenced by the reluctance of many procurement managers to utilize e-procurement systems despite recognizing the economic rationale for cost savings and reduced direct procurement expenses associated with the new e-procurement platform (Williams-Elegbe, 2014).

Insufficient training of staff in e-procurement leads to low e-procurement usage (Costa et al, 2018).

Additionally, the lack of skilled ICT personnel on-site to handle technical e-procurement issues, service-level agreements, and operationalization of the private-public partnership model of e-procurement implementation are significant obstacles to e-procurement implementation. Despite efforts by governments in many countries to transition their procurement activities to e-procurement platforms, there is still a lack of understanding of the actual adoption of e-procurement experiences in the public sector (Gasco et al, 2018). To fully benefit from e-procurement adoption, procurement staff must be proficient in using software applications that provide management skills to oversee their activities. This technology is based on databases, which are easily accessible in real time. According to Barsemoi et al. (2014), many procurement entities lack competent human resources critical to managing procurement processes. The absence of the right caliber of employees to enforce quality standards, monitor e-procurement processes, determine specifications, define requirements, and supervise roles ultimately leads to budget shortages for the government.

The legal framework forms the foundation of any business transaction, whether in the public sector or private businesses. It outlines the obligations and responsibilities of the parties involved in the business transaction, with the aim of achieving each other's desired goals. According to Henriksen & Mahnke (2005), the laws governing B2B commerce, especially in the context of e-procurement, are still underdeveloped. For example, questions regarding the legality and enforceability of e-mail contracts, the use of electronic signatures, and the application of copyright laws to electronically copied documents remain unresolved. The Public Procurement Authority in Uganda does not adequately address the aspects of e-procurement transactions. Consequently, weaknesses in this framework may hinder the adoption and growth of e-procurement initiatives (Wirtz et al., 2009). Understanding the challenges and limitations of e-procurement adoption in the public sector is crucial due to the complexities of government policies and bureaucracy. Without this understanding, the government may not be able to reap the benefits of e-procurement. This understanding could also be beneficial for future planning and adoption of e-procurement.

4.1 Benefits of Implementing the Electronic Government Procurement

For the government, implementing an e-procurement system has several advantages. It has been mentioned as a means for governments to reduce administrative expenses and improve their online procurement efficiency. E-procurement has the potential to provide several advantages, including reduced costs, reduced corruption, reorganized processes, and enhanced contract fulfilment (Chang and K.H., 2010). The government can save much money by using e-procurement because it can process purchase orders more efficiently and at a lower cost. It can also reduce inventory expenses and order fulfilment times. Eei et al. (2012) found four categories of cost savings while employing an e-procurement system. These consist of the opportunity cost of capital, lead-time order cost, order cost, and administrative cost. Using e-procurement reduces financial and technological risks, increases competitiveness, minimizes business effort, offers quality bidding, promptness, cost savings, and lowers the cost of purchasing goods or services at premium pricing. Additionally, given the high level of information transparency that comes from electronic bidding, public sector bidding is among the ideal environments in which to implement e-procurement of goods and services (Fernandes & Vieira, 2015)

Public e-procurement can serve as an effective tool for mitigating the risk of corruption and fraud in the public procurement process, according to the OECD (2016). It enhances transparency and integrity in public service activities such as tendering, sourcing, ordering, and auctioning. E-procurement is recognized globally as a crucial tool to prevent corruption, fraud, and abuse of power (Sohail & Cavill, 2018). Pictet and Bollinger (2008) observed that public e-procurement is effective in combating corruption and fraud by reducing face-to-face interactions, where most requests for bribes occur. Electronic government eliminates opportunities for arbitrary actions and reduces cartels, collusions, and rigging to bidders, especially in

situations where public procurement is politically influenced, such as in Nepal, Bangladesh, Iraq, Sudan, and Myanmar. In many corrupt countries, public tenders are awarded without fair competition (Jamyang Dema (2015)

RECOMMENDATION

The research recommends investment in infrastructure, particularly emphasizing robust IT infrastructure such as reliable internet connectivity, data centers, and secure networks. It also proposes collaboration with the private sector to expand infrastructure coverage. Understanding the varying levels of infrastructure in public procurement entities and suppliers would aid in quantifying the necessary investment in software and hardware for e-procurement adoption. Furthermore, the study recommends comprehensive training programs for government staff on e-GP systems, procurement processes, and cybersecurity. It also encourages certification, continuous professional development for procurement professionals, and the implementation of retention strategies for skilled e-GP personnel. Change management strategies to address resistance and engage stakeholders early in the process are also suggested. Additionally, conducting awareness campaigns to educate users about the benefits of e-GP and dispelling misconceptions is recommended. Finally, the IT team should ensure that data transmitted and stored within the e-GP system is encrypted and regularly conduct vulnerability assessments to address any identified issues. Implementing the above would pave the way for the government to maximize the benefits that come with electronic procurement.

CONCLUSION

The e-GP system was developed by the Public Procurement and Disposal of Public Assets Authority (PPDA) to address issues associated with traditional paper-based procurement. It aims to enhance competition, transparency, accountability, and sustainable economic development. The study utilized the Technology Acceptance Model (TAM) to explore challenges and opportunities in implementing the e-GP system. A qualitative literature review focused on e-government, information systems, and public administration domains identified challenges in three categories: technological, organizational, and contextual. These challenges encompass inadequate IT and networking infrastructure, acceptance and usage issues, IT security concerns, resistance to change, insufficient training and skilled personnel, and legal framework. Successful e-GP implementation requires a comprehensive approach involving technology, capacity building, stakeholder engagement, and legal reforms. Despite the challenges that may face the effective implementation of electronic Government Procurement, the system equally has a number of benefits like; mitigating the risk of corruption, reducing inventory expenses, reducing costs, and transparency among others if well implemented. Uganda can gain insights from case studies in neighboring countries like Kenya and Rwanda, as well as from middle and highly developed countries such as Mauritius, Singapore, Japan, and Canada. Collaboration with regional bodies like the East African Community can also provide valuable perspectives.

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