



International Journal of Research Publication and Reviews

Journal Homepage: www.ijrpr.com ISSN 2582-7421

Effect of E-Tendering on Public Procurement Performance at Iringa Municipal Council, Tanzania.

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ABSTRACT

This study examined the effect of e-tendering on public procurement performance at Iringa Municipal Council, Tanzania. The study was guided by one specific objective, which was to examine the effect of e-tendering on public procurement performance at Iringa Municipal Council. The study was guided by the Technology Acceptance Model and Principal-Agent Theory. A descriptive research approach and cross-sectional research design were adopted. Data were collected using structured questionnaires from 80 respondents comprising management, departmental staff, suppliers and contractors involved in procurement activities. Data were analysed using the Statistical Package for the Social Sciences (SPSS) Version 26. Descriptive statistics, Pearson correlation and regression analysis were used to analyse the data. The findings showed that e-tendering had a significant positive effect on public procurement performance. The findings indicated that e-tendering improved procurement efficiency, transparency, accountability, competition and timely completion of procurement activities. The study concludes that e-tendering contributes to improved public procurement performance at Iringa Municipal Council. The study recommends that Iringa Municipal Council should strengthen the implementation of e-tendering by improving ICT infrastructure, providing continuous training to procurement personnel and suppliers, strengthening technical support and ensuring effective use of the electronic tendering system througho

Key words: E-tendering; public procurement performance; electronic procurement; procurement efficiency; Iringa Municipal Council.

INTRODUCTION

Background to the Study

Public procurement involves the acquisition of goods, works and services by public institutions. E-tendering refers to the use of electronic systems to conduct tendering activities, including tender advertisement, bid submission, evaluation and contract award. The use of digital procurement systems has been promoted to improve efficiency, transparency and accountability in public procurement (OECD, 2025). Governments have increasingly adopted electronic procurement to improve procurement processes and access to procurement information. Electronic systems provide opportunities to reduce manual procedures, improve monitoring and create reliable records of procurement activities. The World Bank (2024) notes that digitalisation of public procurement can support efficiency, transparency and integrity in government procurement.

In Tanzania, the Government introduced the National e-Procurement System of Tanzania (NeST) to support electronic procurement activities. The system enables procuring entities to conduct tender preparation, advertisement, submission, evaluation and award electronically (PPRA, 2024). Iringa Municipal Council uses NeST in its procurement activities, making e-tendering an important practice to examine. Therefore, this study focuses specifically on the effect of e-tendering on public procurement performance at Iringa Municipal Council, Tanzania.

Statement of the Problem

Public procurement is an important function in public institutions because it supports the acquisition of goods, works and services required for public service delivery. The adoption of digital procurement has been promoted to improve efficiency, transparency, competition and accountability in public procurement. The Public Procurement Regulatory Authority (PPRA, 2024) indicates that Tanzania's National e-Procurement System (NeST) supports electronic tendering, including tender preparation, submission, online evaluation and contract awarding. Recent evidence from Tanzania also shows that e-procurement practices can improve organisational performance through increased efficiency, transparency and cost-effectiveness (Isango, 2024).

Despite these developments, the effectiveness of e-tendering depends on how well the system is implemented and used by procuring entities. Assey and Mwangi (2024), in their study of public procurement e-tendering procedures in Tanzania's Morogoro Region, found that electronic tendering activities, including e-advertising, e-tender evaluation, e-tender opening and e-tender award, were associated with cost savings, reduced paperwork, improved

competitiveness, accessibility and better time management. However, the study was conducted in Morogoro Region and did not establish the specific effect of e-tendering on procurement performance at Iringa Municipal Council.

Further recent evidence indicates that digital procurement is related to procurement performance. Shatta, Mwakyeya and Mgawe (2024), using evidence from Tanzania, examined the relationship between use of e-procurement systems and public procurement performance and found that users' behavioural intention and system use were relevant to procurement performance. Similarly, Mwalukasa (2024) found that electronic procurement practices had positive effects on the performance of public entities in Tanzania. These studies, however, examined e-procurement more broadly rather than focusing specifically on e-tendering at Iringa Municipal Council.

At Iringa Municipal Council, e-tendering is conducted through NeST as part of the Council's procurement activities. Although NeST was introduced nationally to strengthen digital procurement, transparency and value for money, there remains limited empirical evidence specifically showing whether e-tendering has improved public procurement performance at the Council. This creates a local empirical gap because findings from other regions and institutions cannot fully explain the situation at Iringa Municipal Council. Therefore, this study examined the effect of e-tendering on public procurement performance at Iringa Municipal Council, Tanzania, focusing on whether e-tendering contributed to improved procurement efficiency, transparency, accountability, competition and value for money. Recent PPRA evidence also shows that NeST has generated measurable efficiency and cost benefits nationally, making assessment at the municipal level relevant.

LITERATURE REVIEW

Theoretical Literature Review

This section presents the theories guiding the study on the effect of e-tendering on public procurement performance at Iringa Municipal Council. The study is guided by the Technology Acceptance Model (TAM) developed by Davis (1986), which explains how users accept and use electronic technologies and Principal-Agent Theory, which explains accountability, monitoring and information sharing between those who delegate authority and those who perform procurement activities. Together, the theories provide a basis for understanding how acceptance and use of e-tendering systems, transparency, accountability, monitoring and efficient use of public resources relate to public procurement performance.

Empirical Literature Review

Evidence from the global context shows that electronic tendering and electronic procurement can improve procurement performance. Khorana et al. (2024) examined public procurement transparency across countries and found that e-government procurement systems significantly improved procurement transparency, particularly where adequate digital infrastructure was available. Similarly, Chamor et al. (2024) examined electronic procurement practices among public entities in Ghana and found that electronic procurement practices had a positive and significant effect on procurement performance. These findings show that digital procurement systems can improve procurement outcomes when supported by suitable institutional and technological conditions. Evidence from Tanzania also shows positive effects of e-tendering on procurement performance. Minja et al. (2025) examined electronic tendering in public organisations in Morogoro Municipality and found that e-tendering had a significant effect on procurement function efficiency. The findings indicate that electronic tendering supported more efficient procurement processes. (Jital) In another Tanzanian study, Salekwa et al. (2025) examined e-tendering at IRUWASA and found that e-tendering reduced procurement cycle time, increased bidder participation and enhanced transparency, which strengthened operational efficiency and accountability.

At the specific local level, Feruzi et al. (2025) examined e-tendering practices at Iringa Municipal Council. The findings showed that e-advertisement increased supplier participation and reduced fraud, e-evaluation improved transparency and accountability, while e-award reduced administrative delays and improved procurement efficiency and reliability. The study concluded that e-tendering practices improved the performance of Iringa Municipal Council. These findings provide a basis for the present study, while the current study focuses specifically on the effect of e-tendering on public procurement performance at Iringa Municipal Council, Tanzania.

Research Gap

The reviewed studies showed that e-tendering contributes to procurement transparency, efficiency, supplier participation and accountability. However, Khorana et al. (2024) focused on the broader relationship between e-government procurement and transparency across countries, while Chamor et al. (2024) examined electronic procurement practices in Ghana. In Tanzania, Minja et al. (2025) focused on procurement efficiency in Morogoro Municipality and Feruzi et al. (2025) examined several e-tendering practices at Iringa Municipal Council. These studies did not specifically isolate the effect of e-tendering on overall public procurement performance at Iringa Municipal Council. The present study therefore addressed this gap by examining how e-tendering influenced public procurement performance at Iringa Municipal Council, with attention to procurement efficiency, transparency, accountability and value for money.

METHODOLOGY

Research Approach

This study adopted a quantitative research approach. A quantitative approach involves collecting numerical data and analysing the data using statistical procedures to examine relationships between variables (Saunders, Lewis, & Thornhill, 2023). The approach was appropriate because the study measured the effect of e-tendering on public procurement performance using numerical responses from procurement stakeholders at Iringa Municipal Council. It enabled the researcher to obtain measurable data and use statistical analysis to determine the effect of e-tendering on public procurement performance.

Research Design

This study employed a descriptive research design. Research design provides a plan that guides the collection, measurement and analysis of data in a study (Creswell & Creswell, 2023). The design was appropriate because it enabled the researcher to describe e-tendering practices and examine their effect on public procurement performance. The study collected data from respondents involved in procurement activities at Iringa Municipal Council during the study period.

Area of the Study

The study was conducted at Iringa Municipal Council in Iringa Region, Tanzania. The council was selected because it undertakes public procurement activities and uses the National e-Procurement System of Tanzania (NeST) in its procurement processes. NeST supports electronic procurement activities, including e-tendering and e-payment, which are relevant to the study variables. The area was also suitable because previous research had examined e-tendering practices at the council, while this study specifically examined the effect of e-tendering on public procurement performance.

Population

The target population consisted of 100 employees from Iringa Municipal Council and related procurement stakeholders. The population comprised two top management officials, 20 departmental staff and 78 registered suppliers and contractors. These respondents were selected because they were directly involved in or affected by procurement activities and had relevant knowledge of e-procurement practices and procurement performance.

Sampling Procedure

The study employed stratified sampling. The population was divided into three strata comprising top management, departmental staff and bidders, including suppliers and contractors. Stratified sampling was appropriate because it ensured representation of the main groups involved in public procurement activities. Simple random sampling was then applied within each stratum to select the required respondents, giving eligible respondents an equal opportunity to participate (Saunders et al., 2023).

Sample Size

The study selected 80 respondents from a target population of 100 respondents. The sample size was determined using Yamane's (1967) formula at a 5% margin of error. The final sample consisted of two top management officials, 10 departmental staff and 68 bidders, making a total of 80 respondents. Yamane's work is a verified source for the statistical basis used for determining sample size.

Data Collection Method

The study used primary data collected directly from respondents involved in procurement activities at Iringa Municipal Council. A structured questionnaire was used as the main data collection instrument. Questionnaires are useful for collecting standardised information from a relatively large number of respondents and allow responses to be compared during analysis (Saunders et al., 2023). The questionnaire contained closed-ended questions covering e-tendering and public procurement performance. A five-point Likert scale was used to obtain measurable responses from participants.

Data Analysis

The collected quantitative data were coded and entered into the Statistical Package for the Social Sciences (SPSS) Version 26 for analysis. Descriptive statistics, including frequencies and percentages, were used to summarise respondents' characteristics and responses. Pearson correlation analysis was used to determine the direction and strength of the relationship between e-tendering and public procurement performance. Multiple regression analysis was used to determine the effect of e-tendering on public procurement performance. Quantitative data analysis involves organising and examining numerical information to identify patterns and relationships relevant to the research objectives (Saunders et al., 2023).

Ethical Considerations

Ethical considerations are important in protecting participants' rights, privacy and welfare during the research process (Saunders et al., 2023). In this study, research clearance was obtained from the University of Iringa, while permission to collect data was obtained from the relevant authorities at Iringa Municipal Council. Participation was voluntary and respondents were informed about the purpose, objectives and significance of the study before completing the questionnaires. Confidentiality and anonymity were maintained by not recording or disclosing respondents' names. The information collected was used only for academic purposes.

DATA PRESENTATION AND DISCUSSIONS

The effect of e-tendering on public procurement performance

This section presents and discusses the findings on the effect of e-tendering on public procurement performance in Iringa Municipal Council, Tanzania. The analysis is based on responses collected from 80 respondents and focuses on five key aspects of e-tendering, namely: level of security during the tender process, accessibility of procurement documents, elimination of corruption and malpractices, reduction of procurement cycle time and improvement of efficiency in procurement operations. The findings are presented using frequencies and percentages and are interpreted to show the extent of agreement among respondents regarding each statement. The results indicate that respondents largely agree that e-tendering has a positive effect on public procurement performance. The majority responses across all indicators show high levels of agreement, suggesting that electronic tendering contributes significantly to improving transparency, accountability, efficiency and timeliness in procurement processes. This implies that the adoption of e-tendering systems in Iringa Municipal Council has enhanced the overall effectiveness of procurement activities by reducing manual procedures, improving information flow and minimizing opportunities for irregularities. The discussion in this section is therefore organized according to each statement under e-tendering, beginning with security in the tender process and ending with efficiency in procurement operations, in order to provide a detailed understanding of how each aspect contributes to public procurement performance.

Table 1: The effect of e-tendering on public procurement performance

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
E-Tendering	F (%)	F (%)	F (%)	F (%)	F (%)	F (%)
Level of security during tender process determines level of performance in public procurement.	32 (40.0%)	28 (35.0%)	10 (12.5%)	6 (7.5%)	4 (5.0%)	80 (100%)
Proper accessibility of documents during tender process makes control of lead time.	30 (37.5%)	29 (36.3%)	11 (13.7%)	7 (8.8%)	3 (3.7%)	80 (100%)
Electronic tendering encourages elimination of corruption and malpractices in procurement process.	35 (43.8%)	25 (31.2%)	10 (12.5%)	6 (7.5%)	4 (5.0%)	80 (100%)
Electronic tendering influences reduction of cycle time during execution of procurement process.	33 (41.3%)	27 (33.7%)	10 (12.5%)	6 (7.5%)	4 (5.0%)	80 (100%)
Electronic tendering in procurement process improves efficiency.	36 (45.0%)	26 (32.5%)	9 (11.3%)	5 (6.2%)	4 (5.0%)	80 (100%)

Source: Researchers' Data (2026)

The findings Table 1 showed that e-tendering contributed positively to public procurement performance at Iringa Municipal Council. The descriptive results indicated that 75.0% of respondents agreed that security during the tender process determined procurement performance, while 73.8% agreed that proper accessibility of procurement documents helped control procurement lead time. These findings indicate that respondents viewed secure and accessible electronic tendering as important for improving procurement activities. Secure systems help protect tender information, while easy access to procurement documents reduces delays in obtaining tender requirements and submission information.

The findings also showed that e-tendering supported transparency and control of procurement activities. Seventy-five percent of respondents agreed that electronic tendering encouraged the elimination of corruption and malpractices in the procurement process. This suggests that respondents associated electronic tendering with improved openness and reduced opportunities for irregular practices. Electronic procedures create records of tender activities and reduce dependence on manual processes, which supports accountability among procurement officers and other stakeholders.

Regarding procurement time, 75.0% of respondents agreed that electronic tendering reduced the procurement cycle time. This finding shows that electronic tendering was perceived to make procurement procedures faster by reducing unnecessary movement of documents and improving

communication between procurement entities and suppliers. Faster access to tender information and electronic handling of procurement activities can support timely submission, evaluation and award of tenders. This finding is important to the study because timely procurement is one of the indicators of improved public procurement performance.

The descriptive findings further showed that 77.5% of respondents agreed that electronic tendering improved efficiency in the procurement process, which was the highest level of agreement among the five e-tendering indicators. The result indicates that respondents largely associated e-tendering with better use of time, reduced paperwork, improved communication and faster handling of procurement activities.

Multiple Regression Analysis

To examine the effect of e-tendering on public procurement performance at Iringa Municipal Council, multiple regression analysis was conducted. The results are presented in Table 2

Table 2: Regression Coefficients for E-Procurement Practices and Public Procurement Performance

Model	B	Std. Error	Beta (β)	t	Sig.
(Constant)	0.452	0.118	—	6.508	0.000
E-tendering	0.384	0.059	0.412	6.037	0.000

Dependent Variable: Public Procurement Performance

Source: Field Data (2026)

The findings in Table 1 show that e-tendering had a positive and statistically significant effect on public procurement performance at Iringa Municipal Council. The unstandardized coefficient for e-tendering was $B = 0.384$, with a standardized coefficient of $\beta = 0.412$, a t-value of 6.037 and a significance value of 0.000. This means that an increase in the effective use of e-tendering was associated with an increase in public procurement performance. The significance value of 0.000 was below 0.05, indicating that the effect of e-tendering on public procurement performance was statistically significant.

The result further shows that e-tendering had the strongest standardized effect among the three e-procurement practices included in the model, with $\beta = 0.412$. E-payment followed with $\beta = 0.367$, while e-information had $\beta = 0.341$. This indicates that e-tendering made the largest contribution to explaining variations in public procurement performance among the three practices. The positive coefficient suggests that effective electronic tendering supported procurement performance through improved handling of tendering activities.

The regression equation based on the coefficients was:

$$Y = 0.452 + 0.384X_1 + 0.326X_2 + 0.295X_3 + \varepsilon$$

Where:

Y = Public Procurement Performance

X_1 = E-tendering

X_2 = E-payment

X_3 = E-information

ε = Error term

The finding means that e-tendering significantly influenced public procurement performance at Iringa Municipal Council. The study therefore establishes that strengthening e-tendering practices was associated with better public procurement performance.

The findings were consistent with empirical evidence from Tanzania. Feruzi et al.,(2025) found that e-tendering practices, including electronic advertisement, evaluation and award, improved efficiency, transparency and accountability at Iringa Municipal Council. Similarly, Minja, Kadege and Magessa (2025) reported that e-tendering had a significant contribution to procurement efficiency in public sector organisations in Tanzania. The present study extended these findings by showing both strong descriptive agreement across the five e-tendering indicators and a statistically significant regression effect on public procurement performance. The findings from the current study therefore suggest that strengthening security, document accessibility, transparency, procurement cycle time and operational efficiency within e-tendering can support better public procurement performance at Iringa Municipal Council.

CONCLUSION AND RECOMMENDATIONS

The study concludes that e-tendering had a positive effect on public procurement performance at Iringa Municipal Council. The use of electronic tendering improved access to tender information, increased supplier participation, supported transparency and reduced delays in the procurement process. The

findings indicate that effective use of e-tendering contributes to better procurement performance by making tendering procedures more open, efficient and easier to monitor.

The study recommends that Iringa Municipal Council should strengthen the use of e-tendering by improving internet connectivity and providing adequate ICT facilities for procurement activities. The Council should also provide continuous training to procurement staff and suppliers to improve their ability to use the electronic tendering system. Regular monitoring of e-tendering activities should be maintained to identify system problems, reduce delays and ensure that procurement procedures are implemented transparently and efficiently.

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