



INFLUENCE OF E-TENDERING ON PERFORMANCE OF PUBLIC UNIVERSITIES IN KENYA: A CASE OF RONGO UNIVERSITY

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Abstract

This study examined the influence of e-tendering on the performance of public universities in Kenya, focusing on Rongo University. E-tendering is a critical component of digital procurement transformation expected to drive transparency, competition, and efficiency in public sector procurement. Despite policy efforts such as the Public Procurement and Asset Disposal Act (2015), implementation in public universities remains inconsistent. This study employed Expectancy Theory as the guiding framework, emphasizing performance motivation driven by anticipated outcomes. A descriptive research design was adopted, targeting 66 procurement-related personnel at Rongo University through a census approach. Data collection was conducted using structured questionnaires validated through expert review and tested for reliability using Cronbach's Alpha ($\alpha = 0.849$). Analysis was conducted using SPSS version 25,

employing both descriptive and inferential statistics. The findings revealed that e-tendering significantly and positively influences institutional performance indicators such as service delivery, operational efficiency, and reduced complaints. The study concludes that performance in public universities is enhanced when e-tendering systems are well-integrated, secure, and compliant with procurement legislation. Recommendations include system upgrades, capacity building, and regulatory adherence to improve procurement outcomes.

Keywords: E-tendering, E-procurement, Public Procurement and Asset Disposal Act (2015), Performance, Kenya

INTRODUCTION

Public procurement reforms in Kenya have prioritized digitization to reduce corruption, improve efficiency, and increase transparency. E-procurement, and particularly e-tendering, has emerged as a cornerstone of these reforms. According to Barasa et al. (2017), the implementation of e-procurement significantly contributes to organizational performance through competitiveness, accessibility, and cost-effectiveness. The Public Procurement and Asset Disposal Act (PPADA), 2015 was enacted to institutionalize these reforms and mandate digital procurement practices across public institutions (Republic of Kenya, 2015).

Despite these policy directives, adoption of e-tendering in public universities remains suboptimal (Public Financial Management Reform Secretariat, 2023). Challenges include resistance to change, inadequate training, and technological limitations. As emphasized by Chegugu & Yusuf (2017), failure to implement these reforms has led to increased operational costs and inefficiencies in public institutions. Rongo University, like many others, faces such constraints, prompting the need for empirical assessment of e-tendering's influence on performance. This study seeks to fill the gap by evaluating how e-tendering contributes to performance outcomes such as service delivery quality, adherence to procurement policies, and complaint reduction.

This study was guided by Expectancy Theory Vroom, (1964), which posits that individuals are motivated to perform when they believe their efforts will yield desirable outcomes. In the context of e-tendering, procurement staff will effectively adopt and use digital systems when they perceive that such efforts enhance institutional performance. As noted by Toncar et al. (2010), while motivation is central, it is often moderated by external influences such as organizational policy and technological readiness.

The theory's components expectancy, instrumentality, and valence relate directly to the adoption of e-tendering. Expectancy refers to the belief that effort in using the system will lead

to successful execution; instrumentality links system use to performance outcomes; and valence reflects the value placed on those outcomes (Vroom, 1964). This framework underpins the relationship investigated in this study: that e-tendering, if expected to yield valuable procurement efficiencies, will be used more effectively and lead to improved institutional performance.

EMPIRICAL LITERATURE

Nyokabi *et al.*, (2023) conducted a study on Electronic Tendering and Organizational Performance of Parastatals in Nakuru County and established a positive relationship between e-tendering and organizational performance. 91 employees were sampled and the results of this research established that government-owned corporations should improve their system integration processes to ensure compatibility and seamless information accessibility. Further, the research findings revealed a statistically significant relationship ($p = 0.000$) between the utilization of e-tendering as a supplier management tool and organizational performance. Specifically, e-tendering demonstrated a positive and marginally significant increase ($B = 0.133$) in organizational performance. However, the study established a weak significance level of p-value (0.057) between e-tendering and organizational performance. The p-value of 0.057 falls in the gray area of statistical significance, making it unclear whether "electronic tendering" plays a meaningful role in explaining the variation in the dependent variable. This ambiguity calls for further investigation to ascertain the true importance of "electronic tendering" in the regression model.

Hilmi *et al.*, (2019) administered a study in Iraq on the readiness for e-tendering in the construction sector designing a computer programmer and the study established a positive relationship between e-tendering and organizational performance. The study collected data from 50 respondents who are a very small sample size and this poses a risk of weak findings that can barely be used for generalizability. Further the used questionnaires to collect data from its respondents but did not define the research design that the study was based on.

Abdullahi *et al.*, (2020) carried out a study on the development of e-tendering evaluation system for Nigerian public sector and revealed that implementing automation in the tender evaluation process has the potential to enhance the efficiency of the tendering procedure. Existing research primarily concentrates on e-Tendering system development, automation, and its impact on the tendering process, but there is a noticeable gap concerning the evaluation phase in public sector tendering. Hence, empirical evidence is needed to assess how automating tender evaluation influences decision-making, transparency, fairness, and overall efficiency in public sector tendering. Finally, the benefits and challenges of integrating group

decision-making into e-tendering systems remain understudied, leaving policymakers, practitioners, and researchers with insufficient insights for process improvement in public sector tendering, not only in Nigeria but in similar contexts worldwide.

Gichuhi & Waruguru, (2020) conducted a study to assess the influence of e-tendering process on procurement performance in geothermal development company in Nakuru, Kenya. The research findings indicate a statistically significant positive relationship between the adoption of e-tendering and improved procurement performance within the context of a geothermal development company. Consequently, the study concluded that e-tendering significantly influences procurement performance. According to the results of the regression analysis, it was determined that e-tendering did not make a statistically significant contribution to the variance in procurement performance within the geothermal development company, as evidenced by a p-value of 0.051. Hence, indicating that there is a relatively weak level of evidence against the null hypothesis. In practical terms, this suggests that the observed association or effect is not very convincing from a statistical standpoint.

Gathima & Njoroge, (2018) carried out a study in Kenya on effects of e-tendering on organization performance in public sector: a case of Nairobi City County Government. The study revealed a positive and statistically significant relationship ($p = 0.041 < 0.05$) between e-tendering practices and performance, with a correlation coefficient of 0.307. Given that the study's sample size consisted of 75 respondents out of a targeted population of 750, it represents just 10% of the total population. Consequently, the findings may have limited generalizability to the entire population.

The reviewed studies highlight the benefits and limitations of e-tendering in public procurement. Nyokabi et al. (2023) found a weak but positive correlation between e-tendering and performance in parastatals, indicating the need for further empirical investigation. Gathima & Njoroge (2018) reported a significant relationship ($p = 0.041$) between e-tendering and organizational performance in Nairobi City County, while Gichuhi & Waruguru (2020) observed a marginal significance level ($p = 0.051$), questioning the strength of the relationship.

METHODOLOGY

Research Design and Sampling

The study used a descriptive research design to assess the influence of e-tendering on university performance. A census approach was used to include all 66 procurement-related employees at Rongo University. A census survey was suitable for this study because it is applied when all the units of observation in a study are considered and they are of a small sample size (Kothari, 2004).

Data collection

Data collection was done using self-designed structured questionnaire. The questionnaires were administered to all 66 procurement personnel at Rongo University. Prior to data collection, approval was obtained from the University's Directorate of Postgraduate Studies, leading to the issuance of a NACOSTI research permit and a letter of authorization from Rongo University. The instrument's validity was reviewed by procurement experts while reliability was tested using Cronbach's Alpha, achieving $\alpha = 0.849$.

Data Analysis and Presentation

The collected data were analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics including frequencies, percentages, means, and standard deviations were employed to summarize demographic information and key variables. Pearson correlation and simple linear regression analyses were used to test relationships and the significance of the hypothesized model. Findings were presented using tables, enabling ease of interpretation. The study recorded an overall response rate of 89.39%, which is considered highly reliable according to Ary et al. (1996) and Fowler Jr (1993), who affirm that a 75% response rate or higher is significant for social science research.

FINDINGS

The linear regression model tested the hypothesis that e-tendering significantly influences performance. Results are summarized in the following tables:

Table 1: Model Significance for the Relationship between E-tendering and Performance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.888	1	2.888	14.052	.000 ^b
	Residual	11.714	57	.206		
	Total	14.602	58			

a. Dependent Variable: Performance
b. Predictors: (Constant), E-tendering

The outcomes presented in Table 1 indicate that the model is statistically significant at the 0.05 alpha level, with an F-statistic of 14.052. This implies that the null hypothesis is rejected in favor of the alternative hypothesis, indicating a meaningful connection between the independent variable (e-tendering) and performance within the studied population. Hence, the

chosen model is considered suitable for investigating the research hypothesis. Subsequently, a summary of the research hypothesis model results was presented to assess how e-tendering may potentially influence performance. This summary is depicted in Table 2.

Table 2: Summary Model for the Percentage Change in Performance Explained by E-tendering

Model Summary									
Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Change Statistics				
					R ² Change	F Change	df1	df2	Sig. F Change
1	.445 ^a	.198	.184	.45333	.198	14.052	1	57	.000

a. Predictors: (Constant), E-Tendering

The findings presented in Table 2 reveal that e-tendering accounted for 19.8% of the variance in performance ($R^2 = 0.198$, $F = 14.052$, $p = 0.000$). This implies that e-tendering explains 19.8% of the observed variability in the performance of public universities in Kenya. In the context of this study, the F-Statistic (F) holds a value of 14.052. The F-statistic is an essential tool for evaluating the overall significance of the regression model (Lipson, 2020). This observation suggests that a larger F-value, as evidenced by the substantial F-statistic value, indicates that the predictor variable (e-tendering) plays a considerable role in explaining the variations observed in the dependent variable (performance). Essentially, the prominence of the F-value emphasizes the increasing likelihood that the link between e-tendering and performance carries substantial positive statistical significance. Furthermore, Table 3 portrays results concerning the effect of e-tendering on performance.

Table 3: Estimated Regression Coefficients for the Effect of E-tendering on Performance

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.011	.502		4.007	.000
	E-tendering	.502	.134	.445	3.749	.000

a. Dependent Variable: Performance

The coefficient outcomes in Table 3 demonstrate that e-tendering is statistically significant and positively correlated with performance ($\beta = 0.445$, $p = 0.000$). According to the findings, a one-standard deviation increase in e-tendering would result in a positive

0.445 unit change in performance, assuming no other variables are involved. This implies that the null hypothesis is rejected in favor of the alternative hypothesis, indicating a meaningful connection between the independent variable (e-tendering) and performance. Therefore, the adoption of e-tendering in public universities in Kenya is associated with improved performance.

The findings of this study align with previous research conducted (Abdullahi et al., 2020; Gathima & Njoroge, 2018; Gichuhi & Waruguru, 2020; Hilmi et al., 2019; Nyokabi et al., 2023) whom investigated the relationship between e-tendering and performance. Consistently across these studies, it was observed that e-tendering is statistically significant and positively correlated with performance.

However, it is worth noting that prior research approaches have been criticized. Nyokabi et al., (2023) study on Electronic Tendering and Organizational Performance of Parastatals in Nakuru County, specifically, e-tendering demonstrated a positive and marginally significant increase ($B = 0.133$) in organizational performance. However the as compared with the current research enquiry, the study established a weak significance level of p-value (0.057) between e-tendering and organizational performance. (Hilmi et al., 2019) conducted in Iraq's construction sector, this study established a positive relationship between e-tendering and performance. However, the small sample size (50 respondents) and undefined research design limit the generalizability and robustness of the findings. Abdullahi et al. (2020) conducted a study on Nigeria's public sector and highlighted the potential of automation in enhancing tender evaluation efficiency. The research pointed out gaps in empirical evidence regarding the impact of automating tender evaluation on performance, suggesting a need for further investigation which established the e-tendering positively and significantly affects performance. Besides that, a study conducted by Gichuhi and Waruguru, (2020) focused on a Geothermal Development Company in Nakuru, Kenya, this study found a statistically significant but weak association ($p = 0.051$) between e-tendering and procurement performance, whereas the present research demonstrates a more positive and significant connection between variables. Similarly, Gathima & Njoroge, (2018) investigated e-tendering in Nairobi City County Government and reported a weak statistically significant positive relationship ($p = 0.041$) between e-tendering practices and performance as compared to the present research, which demonstrated a more positive and significant connection between variables.

The adoption of e-tendering in public universities in Kenya is associated with improved performance, as evidenced by the statistically significant and positive correlation found in this study. These findings reject the null hypothesis in favor of the alternative hypothesis to postulate that e-tendering contributes to enhanced performance. Hence, public universities

should continue to invest in and expand their e-tendering systems to leverage the performance benefits. The research outcomes enhance the current body of knowledge, offering potential contributions to the refinement of the expectancy theory, disruptive innovation theory, and productivity theory that anchored the study. By establishing a notable and positive correlation between e-tendering and performance, the study emphasizes the importance of positive up take of technological changes, strategic resource allocation and increased efficiency within the context of public universities in Kenya.

CONCLUSION & RECOMMENDATIONS

The research's objective was focused on evaluating the effect of e-tendering on performance of Public Universities in Kenya. This study confirms a statistically significant positive relationship between e-tendering and performance of public universities. As a digital procurement practice, e-tendering enhances transparency, reduces errors, and improves service delivery. However, effective implementation requires strategic alignment with regulatory policies and adequate ICT infrastructure.

Based on the findings, it is strongly recommended that public universities prioritize and emphasize the use of e-tendering due to its significant positive influence on performance. To maintain and elevate high performance levels, the management of public universities should allocate more resources and effort towards adopting and consistently implementing e-tendering. This approach will enable public universities to enhance their performance and achieve better results in their operational processes.

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