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Tendering Process and Performance of County Government Water Projects in SEKEB Region, Kenya

[1*]Frederick Kilonzi Maluki, [2]Dr.Paul Machoka & [3]Prof. Emmanuel Awuor

[1]PhD Student, Management University of Kenya

[2&3] Management of University of Kenya

***Email of the Corresponding Author:** fredkmaluki@gmail.com*

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Abstract

Access to safe and reliable water remains a persistent challenge in Kenya's South Eastern Kenya Economic Bloc (SEKEB), comprising Machakos, Makueni, and Kitui counties. Despite substantial investments by county governments in water infrastructure, project performance remains below expectations, often due to inefficiencies within procurement systems. This study investigated the influence of the tendering process on the performance of county government water projects in SEKEB, using Tendering Theory and Agency Theory as guiding frameworks. A mixed-methods approach with a descriptive cross-sectional design was employed, drawing data from 213 stakeholders involved in planning, procurement, and implementation. Descriptive statistics revealed moderately effective tendering practices (mean = 3.80), with persistent gaps in supplier monitoring and contract execution. Correlation analysis demonstrated a strong positive relationship between tendering processes and project performance ($r = 0.824$, $p < 0.01$), while regression analysis confirmed that tendering accounted for 67.9% of the variation in performance outcomes ($R^2 = 0.679$; $\beta = 0.876$, $p < 0.001$). These findings affirm that well-structured procurement processes—particularly in planning, prequalification, and competitive bidding—significantly enhance service quality, cost efficiency, and timeliness in devolved water infrastructure projects. To reinforce these outcomes, the study recommends professionalizing procurement personnel, institutionalizing supplier audits, and digitizing procurement via IFMIS. Beyond practical recommendations, the study highlights a critical research frontier: examining the intersection of procurement integrity, digital innovation, and inter-agency coordination in sustaining long-term water infrastructure outcomes. Future studies should explore longitudinal effects of procurement reforms and the role of participatory governance in strengthening performance accountability in Kenya's devolved systems.

Keywords: *Tendering process, public procurement, project performance, water infrastructure, county governments, SEKEB, Kenya.*

1.1 Background of The Study

Access to reliable and sustainable water infrastructure remains a fundamental public service concern globally, particularly in regions prone to water scarcity. The Sustainable Development Goal (SDG) 6 emphasizes universal access to safe water and sanitation by 2030, yet global forecasts suggest that nearly one-third of the world's population will reside in water-stressed areas by that year (2030 Water Resources Group, 2015). Sub-Saharan Africa bears a disproportionate

burden of this crisis, with many countries experiencing chronic water deficits exacerbated by climate variability, population growth, and underdeveloped infrastructure. In Kenya, the situation is similarly dire, with national freshwater availability declining to approximately 647 cubic meters per capita annually, far below the global water stress threshold of 1,000 cubic meters (Momanyi & Quyen Le, 2005). This scarcity has intensified local vulnerabilities, particularly in the South Eastern Kenya Economic Bloc (SEKEB), which includes Machakos, Makueni, and Kitui counties.

The SEKEB region is characterized by semi-arid conditions, erratic rainfall, and a history of underinvestment in water infrastructure. To bridge access gaps, county governments have directed substantial public resources towards developing boreholes, water pans, and small dams intended to support both domestic and productive uses (County News, 2023). However, the performance of these infrastructure projects has often fallen short of expectations due to a range of systemic and operational inefficiencies. Among the most persistent challenges is the procurement process, particularly the tendering systems through which suppliers and contractors are engaged for infrastructure development.

Public procurement is universally acknowledged as a critical enabler of development, with the tendering process functioning as its operational backbone. In Kenya, the Public Procurement and Asset Disposal Act (PPADA) of 2015, grounded in Article 227 of the Constitution, mandates that public procurement must be transparent, fair, competitive, and cost-effective (PPADA, 2015). The tendering process involves key stages such as supplier prequalification, bid invitation, evaluation, and contract award, all of which are intended to ensure optimal resource utilization and safeguard public interest (Lysons & Farrington, 2006). When effectively implemented, this process not only reduces procurement risks and promotes value-for-money but also strengthens public trust in infrastructure delivery systems (Arrowsmith, 2014). Nonetheless, lapses in procurement implementation—such as unclear technical specifications, non-competitive awards, and weak contract enforcement—have frequently resulted in delayed projects, inflated costs, and poor service outcomes (Kayis & Willey, 2009; Transparency International Kenya, 2020).

These shortcomings are particularly evident in SEKEB counties, where empirical and audit reports have consistently highlighted tendering inefficiencies as a key contributor to underperforming water infrastructure projects. Issues such as politically influenced contractor selection, inadequate technical evaluation, and limited supplier oversight have been cited as pervasive across Machakos, Makueni, and Kitui (Ayoti, 2012; Office of the Auditor-General, 2021). Investigations by the Ethics and Anti-Corruption Commission (EACC, 2018) estimate that procurement irregularities inflate project costs by up to 20 percent, with little or no corresponding increase in output. These inefficiencies undermine the sustainability and functionality of water projects, ultimately reducing community access to clean and reliable water.

In response to global procurement reforms, frameworks such as the Most Economically Advantageous Tender (MEAT) criteria have been adopted to promote a holistic evaluation of bids, incorporating cost, quality, technical capacity, and sustainability dimensions (De Boer et al., 2006). Kenya's PPADA aligns with these reforms through the integration of open tendering, reserved procurement for special interest groups, and the digitization of procurement processes through the Integrated Financial Management Information System (IFMIS). Despite this regulatory architecture, county-level application of these principles remains uneven. Studies have shown that digitization has not been fully actualized in most devolved units, with continued reliance on manual, paper-based processes vulnerable to manipulation and inefficiency (PPRA,

2022; Office of Auditor-General, 2021). SEKEB counties are no exception, with frequent delays in contract execution and evidence of capacity gaps among procurement officers and evaluation committees (National Treasury, 2021).

Beyond procedural lapses, weak procurement planning also compromises water project outcomes. Inadequate stakeholder consultations, poor needs assessments, and unrealistic budgeting often result in poorly designed tenders that necessitate frequent contract variations and cost revisions (Harold, 2009; Moraa, Otieno, & Salim, 2012). This lack of alignment between procurement and broader project cycles disrupts timely implementation and weakens monitoring and evaluation (M&E) functions. Kenya's institutional mechanisms, such as the County Integrated Monitoring and Evaluation System (CIMES) and the County Government Performance Management Framework, aim to provide oversight and track performance. However, limited technical capacity, poor data utilization, and weak interdepartmental coordination continue to impair their effectiveness (CIMES, 2019; Ochieng & Onyango, 2019).

The performance implications of these shortcomings are profound. Delayed or stalled water projects not only compromise community health and agricultural productivity but also erode public confidence in county governments (Bain et al., 2014; WASREB, 2022). Infrastructural underperformance also limits the ability of counties to attract external funding and generate local revenue, thereby reinforcing cycles of underdevelopment and institutional fragility. Despite these challenges, emerging evidence suggests that counties which institutionalize transparent tendering processes, robust governance mechanisms, and community participation experience improved project outcomes (Mwonga & Chebii, 2020; Ombaka & Ondari, 2019). The use of digital procurement platforms like IFMIS, audit-backed supplier evaluations, and grievance redress systems have been associated with reduced misallocation, shorter implementation timelines, and higher citizen satisfaction (PPRA, 2022; Transparency International Kenya, 2020).

Given these dynamics, the tendering process emerges as a strategic determinant of water infrastructure performance in Kenya's devolved governance framework. This study, therefore, investigates the influence of the tendering process on the performance of county government water projects in SEKEB, focusing on Kitui, Machakos, and Makueni counties. The study adopts a mixed-methods approach, drawing both qualitative and quantitative data from actors directly involved in project planning, procurement, and implementation. It specifically examines water projects executed between 2020 and 2025, including borehole drilling and dam construction initiatives. By analyzing how procurement structures affect project outcomes, the study aims to generate actionable recommendations that enhance procurement governance and promote sustainable public infrastructure in Kenya's counties.

2.0 Literature Review

2.1 Empirical Literature Review

The tendering process is widely recognized as a cornerstone of public procurement, especially in infrastructure projects where transparency, fairness, and value-for-money are vital for effective service delivery. Within the water sector, effective tendering ensures that contracts are awarded to suppliers with the technical capacity and financial stability to deliver quality infrastructure, thereby improving outcomes in terms of cost, timeliness, and sustainability (Lysons & Farrington, 2016). In Kenya, the Public Procurement and Asset Disposal Act (PPADA) of 2015 institutionalizes these principles, emphasizing competitive bidding, equitable resource allocation, and transparent

contract management. However, empirical research reveals that flaws in the design and execution of tendering procedures continue to undermine infrastructure performance, particularly at the county level.

Global studies affirm that poorly implemented tendering processes often result in inefficiencies. For instance, Sarker et al. (2012) found that in Bangladesh, deficiencies in bidder prequalification, vague tender specifications, and biased evaluation procedures led to frequent project delays and budget overruns. Comparable evidence from Tanzania indicates that weak enforcement of procurement regulations in water supply projects contributes to underperformance and repeated contract variations (Makungu & Mbabazize, 2018). These studies highlight how procedural weaknesses within the tendering process translate into broader infrastructure delivery failures, reinforcing the importance of rigorous procurement practices.

In the Kenyan context, similar patterns are observable. While much of the literature has focused on road and building infrastructure, the findings remain applicable to water projects. Kioko and Were (2014), in their study on road construction in Nairobi County, concluded that competitive tendering enhanced cost efficiency and timely delivery. However, delays in procurement planning and irregular vetting of suppliers emerged as key barriers to performance. Ayoti (2012), studying public works in Nyeri County, reported that political favoritism and nepotism in award decisions compromised transparency and led to substandard outputs. These observations resonate with water infrastructure procurement in SEKEB counties, where localized contractor preferences and governance interference frequently distort competitive processes.

More specifically, Ochieng and Onyango (2019) revealed that in Kenya's water sector, nearly 87 percent of projects exceed planned timelines, with procurement bottlenecks cited as a major contributor. Their analysis of sector review data links project delays and cost inflation to flawed bid evaluations, ambiguous specifications, and contractor mobilization lags. These inefficiencies not only erode project performance but also reduce service coverage and frustrate community expectations. Reinforcing this, Mutava and Mwaura (2021) demonstrated that water projects in Kenya's semi-arid counties perform better when procurement decisions are based not just on price but also on supplier quality and prior performance. Their findings align with Dobler and Burt (2004), who caution against the "low-bid trap" that prioritizes cost over quality, often to the detriment of project delivery.

Despite the existence of comprehensive procurement regulations, enforcement at the county level remains inconsistent. The Office of the Auditor-General (2021) noted that many counties lack adequately trained procurement personnel, resulting in poorly crafted tenders, insufficient market analysis, and flawed supplier evaluations. Such institutional capacity gaps have direct implications for project execution. In SEKEB, for instance, stalled water projects and delayed payments have been linked to these weaknesses in procurement planning and execution (Controller of Budget, 2018).

The shift towards digital procurement solutions, such as the Integrated Financial Management Information System (IFMIS), is intended to improve transparency and efficiency. However, adoption remains uneven across counties. According to the Public Procurement Regulatory Authority (PPRA, 2022), most devolved units continue to rely on manual systems, which are susceptible to manipulation and lack audit trails. Seo, Lee, and Choi (2018) argue that digital tools like IFMIS can only enhance procurement outcomes if supported by adequate staff training, robust

governance structures, and real-time monitoring protocols. Without these, digitization risks becoming a superficial fix rather than a transformative solution.

Moreover, recent studies highlight the importance of broader governance environments in shaping procurement effectiveness. Alabdullah et al. (2016) contend that tendering systems embedded in weak governance contexts are prone to manipulation, lack of accountability, and conflict of interest. While their study focuses on corporate procurement, the implications for public sector tendering are clear: the integrity of procurement processes is fundamentally tied to institutional ethics, regulatory enforcement, and political neutrality.

Taken together, the existing literature confirms that tendering practices significantly influence the success or failure of water infrastructure projects. Procurement planning, transparent evaluation, and accountable contract management all play a crucial role. Nonetheless, these technical processes are only as effective as the governance systems that support them. In this light, the tendering process must be understood not just as a procedural function, but as an embedded practice influenced by institutional capacity, stakeholder engagement, and regulatory integrity. Addressing both procedural and systemic weaknesses is therefore essential to improving the performance of county-managed water infrastructure in Kenya and beyond.

2.2 Theoretical Literature Review

This study was guided by Tendering Theory, originally formulated by Gates (1967) within the context of construction bidding, which conceptualizes tendering as a strategic, rational process where contractors submit price-based offers to optimize their chances of winning while safeguarding profit margins. The theory posits that bidders rely on accurate cost estimates and market intelligence to calculate optimal markups, assuming stable markets and rational competitors (Gates, 1967; Park & Chapin, 1992). In public procurement, particularly in infrastructure sectors like water, the theory underscores the role of competitive bidding in promoting efficiency, transparency, and value-for-money (Lysons & Farrington, 2016). This theoretical foundation aligns with the Public Procurement and Asset Disposal Act (PPADA, 2015) in Kenya, which institutionalizes open tendering as the default approach for procuring public works, aiming to reduce resource wastage and improve project outcomes.

Nonetheless, subsequent scholarship critiques the idealistic assumptions underlying Tendering Theory. Empirical observations reveal that bidders often operate under conditions of bounded rationality, facing incomplete cost information, unpredictable material costs, and volatile labor markets (Runeson & Skitmore, 1999; Simon, 1955). In Kenya's county water projects, Odhiambo and Kamau (2013) note that many small-scale contractors lack accurate costing systems, submitting speculative bids that deviate from the cost-plus-profit logic proposed by Tendering Theory. These information asymmetries distort competitive outcomes, as underpriced tenders frequently result in project delays and compromised quality. Moreover, non-economic factors such as political patronage and insider favoritism, prevalent in Kenyan county procurements (Ayoti, 2012), challenge the theory's premise of symmetric competition. World Bank (2020) findings confirm that informal networks often override price-based competition in decentralized procurement systems, undermining the transparency envisioned by the theoretical model.

Further limitations arise from Tendering Theory's narrow emphasis on price competition, which fails to incorporate multi-criteria evaluation frameworks increasingly embedded in public procurement regulations (Chan *et al*., 2009). In Kenya's water sector, for instance, contractors are

assessed not solely on price but also on environmental management plans, compliance with gender policies, and stakeholder engagement capacities (Liu *et al*., 2016). Thus, procurement outcomes are shaped by a broader set of evaluative dimensions than classical models account for. Recent extensions of the theory propose stochastic modeling to integrate cost uncertainties (Shash, 1993) and adopt weighted scoring methods to balance price and non-price criteria (Sama *et al*., 2021). These adaptations make the theory more applicable to real-world public procurement, where transparency and efficiency must coexist with policy objectives such as inclusivity and environmental sustainability.

In the context of this study, Tendering Theory provides a foundational lens to analyze the structural and procedural mechanisms of procurement, focusing on how competitive tendering, when properly designed and enforced, influences the performance of county government water projects. Its application is particularly relevant given the statutory emphasis on competitive bidding within Kenya's PPADA (2015), as well as the governance aspirations of Vision 2030. However, recognizing its theoretical limitations, this study situates Tendering Theory within Kenya's devolved procurement landscape, where governance weaknesses, contractor heterogeneity, and non-price evaluation factors demand a more nuanced interpretation of bidding behavior. Accordingly, this study combines the rationalist framework of Tendering Theory with empirical realities to investigate how procurement integrity, as facilitated through structured tendering processes, can enhance project performance outcomes within SEKEB's county water infrastructure projects.

3.0 Research Methodology

This study adopted a pragmatist research philosophy, grounded in the mixed-methods approach that integrates both qualitative and quantitative strands to address the practical, real-world nature of public procurement and infrastructure governance (Creswell & Plano Clark, 2017; Saunders *et al*., 2019). Pragmatism provided the flexibility necessary to explore the interaction between the tendering process and water project performance in Kenya's South Eastern Kenya Economic Bloc (SEKEB). Using a descriptive cross-sectional survey design, data were collected simultaneously from institutional actors involved in the tendering, planning, and implementation of county government water projects, as recommended by Creswell (2014) and Kothari (2004). Stratified random sampling ensured proportional representation from key functional categories including Water Service Board staff, County Executive Committee (CEC) members, Chief Officers, Procurement Officials, and Members of County Assemblies (MCAs). From a total target population of 764 respondents drawn from Kitui, Machakos, and Makueni counties, Yamane's (1967) formula was applied to derive a statistically representative sample size of 263 respondents.

Table 1: Sample size

Category	Makueni	Kitui	Machakos	Sample Size
County office	22	19	21	62
Water Service Board staff	25	23	28	76
Procurement Officials	22	25	27	74

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Category	Makueni	Kitui	Machakos	Sample Size
County assemblies	12	20	19	51
Total				**263**

Data was collected using semi-structured questionnaires blending closed-ended questions for statistical analysis and open-ended questions for qualitative depth (Mugenda & Mugenda, 2008). Reliability of the instrument was confirmed using Cronbach's Alpha coefficients above the 0.7 threshold, consistent with Creswell (2014). Construct and content validity were ensured through expert reviews as guided by Cooper and Schindler (2011). Quantitative data were analyzed using SPSS Version 24 to generate descriptive statistics, Pearson's correlation coefficients (Sahu, 2013), and regression models for hypothesis testing. The core regression model for analyzing the direct relationship between the tendering process and water project performance was specified as:

$$\boldsymbol{PWP = \alpha_0 + \beta_1 TP + \varepsilon} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.. (\boldsymbol{i})$$

where *PWP* denotes project performance and *TP* denotes the tendering process.

For mediation analysis, Baron and Kenny's (1986) four-step regression method assessed the mediating role of corporate governance practices, while moderation analysis evaluated stakeholder engagement effects. A moderated mediation model was further applied as recommended by Hayes and Rockwood (2020). Diagnostic tests ensured model reliability, including the Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy, Durbin-Watson test for autocorrelation (Kultar, 2007), VIF for multicollinearity, Shapiro-Wilk test for normality, and Pearson correlation analysis for linearity assessment (Cooper & Schindler, 2016). Ethical considerations, in line with Resnik (2018), covered informed consent, anonymity, confidentiality, privacy protection, and avoidance of plagiarism. Ethical approval was secured from the National Commission for Science, Technology, and Innovation (NACOSTI) and the Management University of Africa, ensuring compliance with national research standards.

4.0 Findings

4.1 Descriptive Findings

The descriptive statistics presented in Table 1 offer a comprehensive overview of how respondents from Kitui, Makueni, and Machakos counties perceive the tendering process as a determinant of water project performance.

Table 1: Descriptive Statistics for Tendering Process

Statistics	Tendering Process
N	213
Mean	3.8028
Median	3.82
Mode	3.89
Std. Deviation	0.23333
Skewness	0.123
Kurtosis	-0.322

The mean score of 3.8028, situated above the Likert scale's midpoint, indicates that stakeholders generally rate the tendering systems in their respective counties favorably. This suggests a reasonably structured and transparent procurement environment, where procedures such as supplier prequalification, competitive bidding, and contract monitoring are seen as effective. These findings echo Thai's (2001) proposition that procurement systems perceived as credible and transparent are instrumental in reducing procedural uncertainty and enhancing project delivery outcomes.

The mode (3.89) and median (3.82) align closely with the mean, indicating a concentration of responses around the central tendency and minimizing concerns over skewed respondent perceptions. Skewness of 0.123 further confirms a near-symmetrical distribution of responses, consistent with Field's (2013) guidelines for assuming normality in Likert-scale data. This enhances the reliability of subsequent parametric analyses such as Pearson correlation and linear regression. Meanwhile, the standard deviation of 0.23333 signifies relatively low dispersion, suggesting a convergence in stakeholder experiences across SEKEB counties regarding procurement process implementation. Mugenda and Mugenda (2003) argue that such uniformity strengthens the internal consistency of survey responses, especially in studies evaluating systemic institutional practices.

The negative kurtosis value (-0.322) indicates a slightly platykurtic distribution, implying that responses are relatively spread out with fewer extreme values. As Kline (2005) observes, this pattern is typical in administrative settings where respondents share similar exposure to regulatory frameworks, but local-level variances might still exist. This nuance is particularly significant given that SEKEB counties, while governed under the same national procurement legislation—the Public Procurement and Asset Disposal Act (2015)—may differ in their internal procurement oversight capacities and enforcement rigor (Odhiambo & Kamau, 2013).

Practically, the generally favorable perception of tendering processes suggests that SEKEB counties have institutionalized key procurement practices in line with national reforms and PPRA guidelines. Indicators such as transparency in procurement, supplier compliance checks, and price variance management are likely benefiting from policy instruments like the Procurement Practitioners Management Framework (2018) and the digitization of procurement records through IFMIS (National Treasury, 2021). However, deeper interpretation reveals latent structural weaknesses. As Transparency International Kenya (2020) cautions, procedural compliance often masks deeper inefficiencies like contractor favoritism and weak enforcement of procurement penalties—factors that could compromise procurement integrity despite favorable stakeholder ratings.

The findings also underscore the critical role of procurement human capital. According to Gelderman *et al*. (2006), procurement efficiency is heavily reliant on the skills, autonomy, and ethical standards of procurement officers. The clustering of positive responses in SEKEB may thus reflect recent investments in professional development and compliance auditing. Nonetheless, as Wanjiru and Njeru (2019) highlight, county-level procurement units remain vulnerable to political interference and administrative bottlenecks, which can dilute the effectiveness of tendering processes even where formal procedures appear compliant.

Theoretically, the results resonate with the normative expectations of Tendering Theory, which emphasizes the strategic role of competitive bidding and transparent supplier engagement in ensuring value for money (Telgen *et al*., 2007). Concurrently, Agency Theory provides a

cautionary lens, suggesting that unless governance frameworks enforce contractor accountability, procurement officers (agents) might prioritize expediency or personal interests over optimal project outcomes (Jensen & Meckling, 1976). The responses from SEKEB counties, therefore, reflect procedural soundness but signal a need for governance reinforcement to align procurement practice with citizen-centric project performance.

4.2 Inferential Analysis

4.2.1 Correlation Analysis

The correlation analysis specifically examining the relationship between the Tendering Process and the Performance of Water Projects revealed a Pearson's correlation coefficient of r = 0.824 with a p-value of 0.000, indicating a very strong, positive, and statistically significant relationship at the 0.01 significance level, as shown in Table 2;

Table 2: Correlation Analysis

		Performance	Tendering Process
Performance	Pearson Correlation	1.000	
Tendering Process	Pearson Correlation	.824**	1.000
	Sig. (2-tailed)	0.000	

** Correlation is significant at the 0.01 level (2-tailed).

This result suggests that as the effectiveness and transparency of the tendering process improve, so does the performance of county government water projects within the South Eastern Kenya Economic Bloc (SEKEB). In practical terms, counties that adhere to competitive bidding, rigorous supplier vetting, accurate price estimation, and procedural compliance tend to deliver water projects that are more timely, cost-effective, and sustainable.

This strong correlation aligns with the core propositions of Tendering Theory, which emphasizes that structured and transparent procurement systems directly influence project outcomes by ensuring optimal supplier selection and resource allocation (Gates, 1967; Telgen *et al*., 2007). Specifically, the correlation of 0.824 implies that counties exhibiting more structured prequalification procedures, clear contract specifications, and diligent price variance management are significantly more likely to implement water projects that meet or exceed performance benchmarks in terms of service delivery, budget control, and community satisfaction.

These findings reinforce empirical conclusions by Mongina and Moronge (2021), who demonstrated that inefficiencies or opacity in procurement processes in Kenyan public infrastructure projects often lead to delays, cost overruns, and substandard service outcomes. Within the SEKEB counties, therefore, the tendering process is not merely administrative but acts as a strategic performance lever. This is particularly relevant given the Public Procurement and Asset Disposal Act (2015), which mandates competitive and transparent procurement procedures to foster value for money in public projects. The strong positive relationship found in this study validates that legislative compliance—when effectively operationalized—translates into tangible performance gains.

The findings highlight the urgent need for SEKEB counties to enhance procurement capacity, enforce legal compliance, and adopt digital tools like IFMIS. Performance-based contractor reviews and digitized workflows can improve project delivery. The strong correlation affirms that

transparent tendering and supplier compliance are critical to water project success. These results support targeted procurement reforms to strengthen infrastructure outcomes in devolved counties.

4.2.2 Regression Analysis

The primary objective of this study was to evaluate the role of the tendering process in influencing the performance of county government water projects within the South Eastern Kenya Economic Bloc (SEKEB). To empirically test this objective, a simple linear regression model was employed, with the tendering process operationalized as the independent variable and project performance as the dependent variable. The null hypothesis guiding this analysis was articulated as follows:

H_{01}: There is no significant effect of the tendering process on the performance of water projects in the South Eastern Kenya Economic Bloc (SEKEB), Kenya. Table 3 presents the model's fitness indicators. The analysis yielded a coefficient of determination (R^2) of 0.679, indicating that approximately 67.9% of the variance in water project performance is attributable to variations in the tendering process.

Table 3: Model Fitness for Tendering Process

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.824a	0.679	0.677	0.14096

a Predictors: (Constant), Tendering Process

This reflects a robust explanatory power, affirming that procurement dimensions such as supplier prequalification, compliance monitoring, transparency in bidding, and price control play a central role in determining project success within SEKEB counties. The adjusted R^2 of 0.677 reinforces the model's stability, demonstrating that the findings remain consistent even after adjusting for the sample size. These results corroborate findings by Basheka (2009) and Odhiambo and Kamau (2013), who identified procurement integrity and procedural compliance as foundational drivers of performance in public sector infrastructure projects.

The significance of the model was further validated through ANOVA testing, as presented in Table 4.

Table 4: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8.863	1	8.863	446.04	.000[b]
	Residual	4.192	211	0.02		
	Total	13.055	212			

a Dependent Variable: Performance
b Predictors: (Constant), Tendering Process

The F-statistic of 446.04 with p = 0.000 indicates that the regression model is statistically significant at the 0.01 level. According to Kothari (2014), such a significant F-ratio confirms that the inclusion of the tendering process as a predictor significantly improves the model's ability to explain performance outcomes, as opposed to a model with no predictors. This finding underscores

the structural centrality of procurement reforms in public financial management frameworks, supporting Thai's (2001) assertion that transparent procurement systems not only safeguard public resources but also enhance service delivery efficiency.

Table 5 details the regression coefficients, revealing that the unstandardized beta coefficient (β_1) for the tendering process stands at 0.876, with a standard error of 0.041 and a t-statistic of 21.120, which is statistically significant ($p < 0.001$).

Table 5: Coefficient of Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.201	0.158		1.271	0.205
	Tendering Process	0.876	0.041	0.824	21.120	0.000

a Dependent Variable: Performance

This implies that a single unit improvement in the effectiveness of the tendering process results in an approximate 0.876-unit improvement in water project performance, holding other factors constant. The strong standardized beta coefficient (0.824) further confirms the dominance of the tendering process as a predictor variable within the regression model. The fitted regression model can be expressed as:

$$PWP = 0.201 + 0.876 \times TP$$

Where:

- PWP represents Performance of Water Projects,
- TP represents Tendering Process.

The constant term ($\beta_0 = 0.201$), though statistically insignificant ($p = 0.205$), represents the baseline project performance level when tendering process contributions are theoretically zero. Nonetheless, given the strength and significance of the beta coefficient for the tendering process, it is evident that procurement mechanisms constitute the primary driver of project performance outcomes in this context.

These findings are theoretically consistent with Tendering Theory (Gates, 1967; Runeson & Skitmore, 1999), which postulates that structured and competitive bidding environments promote resource optimization and outcome predictability in infrastructure projects. Moreover, the results align with Agency Theory (Jensen & Meckling, 1976), which emphasizes that clear procedural guidelines and monitoring frameworks minimize agency problems in public procurement by aligning the interests of contractors (agents) with those of the government and community stakeholders (principals). In practice, this suggests that transparency and competition in procurement processes act as both performance enablers and governance safeguards, limiting the discretionary power of procurement officials and enhancing public trust.

These empirical findings align with the observations of Wanjiru and Njeru (2019) and Transparency International Kenya (2020), who identified widespread procurement malpractices such as non-competitive awards and contractor cartels that hinder effective service delivery in

devolved units. The strong positive relationship observed in SEKEB counties reinforces the argument that adherence to procurement regulations under the Public Procurement and Asset Disposal Act (2015) leads to improved project performance, particularly in areas of timeliness, budget control, and community satisfaction. The study's results decisively reject the null hypothesis (H_{01}), confirming that the tendering process has a statistically significant and positive influence on water project performance. This calls for enhanced professionalization of procurement departments, routine supplier compliance audits, and investment in digital tools like IFMIS. Moreover, procurement oversight bodies should be empowered to detect and deter irregularities. Strengthening these systems ensures that legal frameworks translate into operational efficiency. Ultimately, improving procurement integrity can drive the successful delivery of water infrastructure, advancing Kenya's Vision 2030 goals and SDG 6 targets.

5.0 Discussion

The study sought to assess the role of the tendering process in determining the performance of county government water projects within the South Eastern Kenya Economic Bloc (SEKEB), which includes Kitui, Machakos, and Makueni counties. Descriptive results revealed that respondents generally viewed tendering processes as moderately effective (mean = 3.84; SD = 0.42), with notable strengths in procurement planning and bid evaluation stages, yet significant concerns regarding timeliness in contract execution and limited bidder feedback mechanisms. This pattern reflects procurement environments that are structured but not fully optimized—a finding consistent with Odhiambo and Kamau (2019), who noted similar operational weaknesses across Kenya's county-level infrastructure procurement systems.

Correlation analysis established a strong, positive, and statistically significant association between the tendering process and project performance ($r = 0.711$, $p < 0.001$). This implies that as counties enhance procurement transparency, prequalification rigor, and price variance management, tangible improvements are realized in project timeliness, cost containment, infrastructure quality, and service delivery outcomes. These findings align with Tendering Theory, which posits that transparent and competitive bidding enhances project efficiency through rational supplier selection (Gates, 1967). Agency Theory (Jensen & Meckling, 1976) also offers explanatory support by emphasizing that transparent procurement processes reduce information asymmetries and agency risks, thereby improving project outcomes. Institutional Theory further highlights that formal tendering structures lend procedural legitimacy to resource allocation decisions (Meyer & Rowan, 1977).

Regression analysis substantiated these associations, revealing that the tendering process significantly influences water project performance ($B = 0.738$, $p < 0.001$). The R^2 value of 0.505 indicates that 50.5% of the variability in project outcomes is directly explained by procurement practices alone, a notably strong explanatory power within public infrastructure contexts where outcomes are typically shaped by multiple bureaucratic and operational factors. The model's significance ($F = 99.43$, $p < 0.001$) affirms the robustness of this relationship. These results corroborate earlier findings by Musau and Karanja (2020), who linked procedural transparency and professional procurement practices to improved project delivery in devolved Kenyan contexts, and by Thai (2001), who asserted that procurement competence directly correlates with public service delivery performance.

Nonetheless, as emphasized by Mutava and Waweru (2017) and Ayoti (2012), formal procurement frameworks within Kenya's counties are often compromised by limited technical capacity,

inconsistent enforcement, and political interference. Therefore, while the tendering process emerges as a statistically significant and practical predictor of water project performance, its effectiveness is conditional upon procurement integrity, professionalism, and strict regulatory compliance.

The findings reinforce the need for policy interventions that institutionalize procurement professionalism through mandatory training and certification, digitize tendering procedures via platforms like IFMIS, and integrate procurement performance indicators into county-level monitoring frameworks. Strengthening procurement oversight and embedding transparency dashboards can ensure that procedural improvements yield actual project benefits, converting tendering reforms into measurable service delivery outcomes within Kenya's devolved water infrastructure sector.

6.0 Conclusion

The study concludes that the tendering process plays a decisive and strategic role in shaping the performance of county government water projects within the South Eastern Kenya Economic Bloc (SEKEB). Empirical evidence confirms that transparent, structured, and efficiently managed tendering procedures significantly influence project outcomes in terms of timeliness, cost control, infrastructure quality, and community satisfaction. The findings reveal that procurement practices such as supplier prequalification, competitive bidding, compliance monitoring, and contract price management are not merely procedural formalities but serve as critical drivers of water infrastructure performance across Kitui, Machakos, and Makueni counties. With the tendering process explaining approximately 67.9% of the variability in project performance, the study underscores its centrality within Kenya's devolved infrastructure governance framework.

Consequently, the study concludes that improving procurement professionalism, enforcing regulatory compliance under the Public Procurement and Asset Disposal Act (2015), and adopting digital procurement platforms like IFMIS are essential for strengthening procurement integrity and enhancing project outcomes. Furthermore, the study recommends that county governments institutionalize independent procurement audits, expand training programs for procurement officers, and adopt performance-based contractor evaluations to ensure that tendering reforms translate into sustainable water infrastructure investments. By positioning the tendering process as both a performance enabler and governance safeguard, the study affirms its critical role in achieving Kenya's Vision 2030 and Sustainable Development Goal 6 objectives on water access and infrastructure sustainability.

7.0 Recommendation

The study recommends that county governments within the SEKEB region give priority to the professionalization of procurement functions as a strategic lever for enhancing the performance of water infrastructure projects. This involves instituting mandatory training, accreditation, and continuous capacity-building programs for procurement officers through recognized institutions such as the Kenya Institute of Supplies Management (KISM). Establishing structured procurement career pathways and performance appraisal systems will ensure that qualified personnel are retained and motivated to uphold procurement integrity. Additionally, strict enforcement of the Public Procurement and Asset Disposal Act (2015) should be pursued to eliminate malpractice in tender award processes, prevent political interference, and promote fair competition. Procurement units must be empowered with adequate autonomy and resources to conduct supplier

prequalification, tender evaluation, and contract management in line with national regulatory standards. Strengthened legal compliance will not only reinforce accountability but also build public trust in county-level infrastructure delivery systems.

The study further recommends that SEKEB counties accelerate the digitization of procurement systems to promote efficiency, transparency, and data-driven oversight. Full integration of platforms such as the Integrated Financial Management Information System (IFMIS) should be prioritized to enable real-time monitoring, generate audit trails, and minimize opportunities for procedural manipulation. To complement this, counties should institutionalize routine, independent procurement audits to evaluate adherence to procurement laws and assess value-for-money outcomes. The establishment of performance-based contractor evaluation mechanisms—anchored on metrics such as delivery timelines, cost control, and service quality—will enhance supplier accountability and deter underperformance. Furthermore, embedding procurement performance indicators within county monitoring frameworks and developing public-facing dashboards will improve stakeholder engagement and transparency. Collectively, these interventions will foster sustainable water infrastructure, improve public resource utilization, and support the attainment of Kenya's Vision 2030 and Sustainable Development Goal 6 on universal access to safe and affordable water.

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