ISSN 2348-3156 (Print)
International Journal of Social Science and Humanities Research ISSN 2348-3164 (online)
Vol. 14, Issue 2, pp: (173-183), Month: April - June 2026, Available at: www.researchpublish.com

Automated Procurement Systems and Organizational Performance of County Governments in Kenya: Evidence from Garissa County

Ahmed Mohamed Ibrahim*[1], Morrison Mutuku[2]

[*1,2] Department of Management Science, School of Business, Economics and Tourism, Kenyatta University

DOI: https://doi.org/10.5281/zenodo.20202563

Published Date: 15-May-2026

Abstract: **The study examined the effect of automated procurement systems on the performance of Garissa County Government in Kenya. The research was motivated by procurement inefficiencies in the county, where only 44% of development projects aligned with the County Integrated Development Plan (CIDP) 2017–2022, alongside persistent shortfalls in Own Source Revenue (OSR) collection. The study focused on four components of automated procurement systems: e-tendering, e-invoicing, e-sourcing, and e-payment. It was guided by Schumpeter's Entrepreneurship Theory, Economic Theory of Entrepreneurship, and Drucker's Theory of Entrepreneurship. A descriptive research design was adopted, targeting 163 respondents, from which 121 were selected using stratified random sampling. Data were collected using structured questionnaires and analyzed using SPSS version 22 through descriptive statistics and regression analysis. The findings showed that all automated procurement systems significantly influenced county performance. E-invoicing had the strongest positive effect on financial efficiency and compliance, followed by e-sourcing, which improved supplier relations and procurement efficiency. E-tendering enhanced transparency and accountability, while e-payment improved timeliness and transaction security, although its overall influence was comparatively weaker. The study concluded that automated procurement systems improve organizational performance, governance, efficiency, and financial sustainability in Garissa County. It recommended strengthening e-invoicing and e-sourcing systems, improving integration of e-tendering with financial sustainability measures, and enhancing financial controls and administrative frameworks for e-payment systems.**

Keywords: **Automated procurement systems, E-procurement, County government performance, Own Source Revenue (OSR), Garissa County, Kenya.**

1. INTRODUCTION

County governments play a critical role in delivering public services and promoting economic growth through effective administration and management of public resources. In recent years, counties have increasingly recognized the need to improve transparency, accountability, and operational efficiency in order to enhance public trust and service delivery (Owino & Mutuku, 2021). Procurement remains one of the most important functions within county governments because significant public funds are allocated toward acquisition of goods, services, and development projects. Consequently, automated procurement systems have emerged as essential tools for improving procurement efficiency, reducing corruption, ensuring compliance with procurement regulations, and enhancing county performance (Ndei & Mutuku, 2021; Wachira & Mwangi, 2022; Akinyi & Njenga, 2023).

Globally, automated procurement systems have transformed public sector operations by improving efficiency and reducing procurement costs. In the United States, full automation of procurement processes reportedly reduced government procurement expenses by approximately 30% (Davis & Thompson, 2021). Similarly, China recorded a 45%

increase in procurement efficiency and up to 20% savings in government contract costs between 2019 and 2022 following adoption of automated procurement platforms (Zhang & Li, 2022). Comparable improvements have also been reported in African countries such as Nigeria, South Africa, and Chad, where e-procurement systems enhanced transparency, reduced procurement cycle time, minimized fraud cases, and increased supplier participation in public procurement processes (Mkhize & Van Rooyen, 2021; Diallo & Ibrahim, 2022; Okonkwo & Adeola, 2023).

In East Africa, countries such as Tanzania and Uganda have similarly experienced positive outcomes from implementation of automated procurement systems. Tanzania reported improvements in procurement efficiency and reductions in procurement costs between 2020 and 2023, while Uganda recorded improved supplier response time and reduced procurement fraud cases (Mwita & Njau, 2023; Nabukeera & Kateregga, 2021). Kenya has also made significant progress in adoption of e-procurement systems, with counties reporting reduced procurement costs, enhanced efficiency, and improved transparency between 2020 and 2023 (Kiptoo & Njenga, 2023). Counties such as Nairobi, Mombasa, and Kisumu have particularly benefited through reduced procurement fraud and increased supplier participation resulting from digital procurement platforms (Otieno & Omondi, 2021; Wachira & Mwangi, 2022).

Organizational performance refers to the extent to which an institution effectively and efficiently achieves its goals and objectives (Mutuku, 2019). Within county governments, performance is commonly assessed through indicators such as service delivery, financial management, revenue collection, compliance with procurement laws, and citizen satisfaction (Mokaya & Musau, 2021; Kimani & Githinji, 2022; Odhiambo & Were, 2023). This study focused on the performance of Garissa County Government, particularly its efficiency in generating Own Source Revenue (OSR) and the relationship between OSR performance and adoption of automated procurement systems. OSR is a critical component of county financial sustainability because it reduces dependence on national government transfers and supports implementation of local development projects (Okech, 2019; Njoroge, 2021). Weak OSR performance limits counties' ability to deliver services, pay employees, and finance infrastructure development (KIPPRA, 2024).

Automated procurement systems, commonly referred to as e-procurement systems, involve the use of information and communication technology to facilitate procurement processes electronically. These systems include e-tendering, e-sourcing, e-invoicing, and e-payment platforms that streamline procurement activities, improve supplier relationships, reduce transaction costs, and enhance accountability (Mensah et al., 2021; Yusuf & Omar, 2020; PPRA, 2021). Previous studies have shown that e-procurement systems improve procurement efficiency and transparency while strengthening compliance with procurement regulations (Kimani, 2022; Mwangi & Mungai, 2023; Ochieng & Onyango, 2020; Mutua & Wanjiru, 2021). Countries such as Singapore, the United Kingdom, Malaysia, Australia, and Greece have integrated e-procurement into broader e-government reforms to improve governance and public sector efficiency (Khalfan et al., 2022; Vaidya & Campbell, 2016). Although East African countries have experienced slower adoption due to infrastructural and technological challenges, efforts to digitize procurement systems continue to increase across the region.

In Kenya, procurement reforms introduced through the Public Procurement and Disposal Act (PPDA) of 2005 and subsequent regulations sought to enhance ethical supply chain management and improve procurement governance (Ngari, 2012). Despite these reforms, procurement inefficiencies and corruption remain major challenges in public institutions. Automated procurement systems are therefore viewed as important mechanisms for enhancing transparency, accountability, and efficiency in county procurement processes.

Garissa County continues to face considerable challenges in achieving its revenue collection targets and improving overall financial performance. KIPPRA (2024) reported that county own-source revenues remain relatively low compared to total county revenues despite gradual improvements over recent years. Garissa County specifically collected less than 50% of its projected OSR during FY 2023/24. Additional challenges such as delayed disbursements from the National Treasury, inefficient revenue collection systems, and high personnel expenditures have negatively affected service delivery and county development initiatives (Auditor General Report, 2023; Njiru & Muthoni, 2021; Ogallo & Otieno, 2021).

The county has also experienced procurement management challenges that have affected implementation of development projects. Out of 593 projects implemented within the county, only 261 were included in the County Integrated Development Plan (CIDP) 2017–2022, indicating weak adherence to approved development frameworks. Furthermore, Garissa County has consistently failed to meet its revenue targets, collecting only 38.8% of budgeted revenue in FY 2013/14 and 57.7% in FY 2022/23. These trends demonstrate persistent inefficiencies in both procurement practices and revenue collection systems.

Previous studies conducted in Kenya established that automated procurement systems improve procurement efficiency, transparency, and supplier management (Ochieng & Kihara, 2019; Njuguna & Ogembo, 2021; Akech et al., 2020). However, these studies also identified challenges such as inadequate staff training, technological resistance, poor system integration, and unreliable infrastructure, all of which limit the effectiveness of procurement automation initiatives. In addition, most prior studies focused largely on private sector procurement, leaving limited empirical evidence on the influence of automated procurement systems on county government performance. This study therefore sought to bridge this gap by examining the effect of automated procurement systems, including e-tendering, e-sourcing, e-invoicing, and e-payment systems, on the performance of Garissa County Government, particularly in relation to improvement of Own Source Revenue (OSR).

2. LITERATURE REVIEW

2.1 Theoretical Literature

This study was anchored on several theories that explain the relationship between innovation, entrepreneurship, and organizational performance, particularly in the adoption of automated procurement systems. The first theory underpinning the study is the Entrepreneurship Theory developed by Joseph Schumpeter in 1934 and later popularized in 1991. Schumpeter emphasized innovation and creativity as the primary drivers of entrepreneurship and economic development. According to the theory, entrepreneurs introduce new products, production methods, and managerial processes that disrupt existing market equilibrium and stimulate economic growth. Innovation therefore becomes a source of competitive advantage and improved organizational performance. Several scholars have supported this argument, with studies indicating that innovation significantly enhances organizational competitiveness and economic growth (Drucker, 1985; Fagerberg et al., 2012). In the context of automated procurement systems, organizations adopt technologies such as e-tendering, e-sourcing, and e-invoicing to improve operational efficiency and procurement performance. However, critics argue that the theory overemphasizes innovation while overlooking factors such as market conditions, regulation, and resource availability that also influence entrepreneurship (Kuhn, 2008). In this study, Schumpeter's theory explains how innovations in procurement systems can transform traditional procurement practices and improve service delivery, efficiency, and financial performance in Garissa County Government.

The study was also guided by the Economic Theory of Entrepreneurship developed by Papanek (1962) and later expanded by Harris (1970). The theory posits that economic incentives are the key drivers of entrepreneurial activities. Entrepreneurs are motivated by the desire to maximize profits and improve operational efficiency through adoption of innovative business practices. Previous studies have shown that economic gains encourage organizations to adopt technologies that reduce costs and improve efficiency (Minniti & Lévesque, 2010; Acs et al., 2008). In relation to automated procurement systems, organizations implement e-procurement technologies to streamline procurement operations, minimize procurement costs, and improve financial performance. Despite its relevance, the theory has been criticized for focusing excessively on economic factors while ignoring social, cultural, and institutional influences on entrepreneurship (Baumol, 1990). In this study, the theory explains how Garissa County Government may adopt e-invoicing and e-payment systems as mechanisms for achieving financial efficiency, reducing operational costs, and enhancing procurement effectiveness.

Additionally, the study adopted the Entrepreneurship Theory advanced by Peter Drucker in 1985. Drucker viewed entrepreneurs as agents of change who continuously seek opportunities to innovate and improve organizational performance. According to the theory, successful organizations are those that embrace innovation and adapt to changing environments. Previous studies have associated entrepreneurial orientation with improved organizational growth, innovation, and competitiveness (Covin & Slevin, 1991; Lumpkin & Dess, 1996). The theory is applicable to automated procurement systems because organizations use technologies such as e-sourcing and e-tendering to solve procurement challenges and improve operational efficiency. However, critics argue that not all innovations yield positive outcomes and that entrepreneurship is often constrained by competition, limited resources, and environmental uncertainty (Hindle, 2009). In this study, Drucker's theory explains how Garissa County Government can use automated procurement systems as instruments of change to improve procurement performance, financial management, and service delivery.

2.2 Empirical Literature Review

Empirical literature on automated procurement systems indicates that digital procurement technologies significantly improve procurement efficiency, transparency, and organizational performance.

Studies on e-tendering have consistently demonstrated positive effects on procurement performance. Abiodun (2022), using a descriptive survey design in Nigerian public institutions, found that e-tendering improved procurement transparency, reduced procurement costs, and accelerated procurement processes. However, the study did not adequately examine the long-term impact of e-tendering on supplier relationships and contract performance monitoring. Similarly, Akinyemi (2020), in a mixed-methods study of South African local governments, established that e-tendering reduced procurement cycle time and enhanced accountability, although the study focused mainly on operational efficiency without considering broader organizational outcomes such as financial sustainability and service delivery. In Kenya, Mwangi and Karanja (2021) reported that e-tendering reduced corruption and improved data integrity in government ministries. Nevertheless, their study concentrated on national government ministries and overlooked county-level implementation. Likewise, Okech and Mutua (2019) established that e-tendering enhanced transparency and accountability in county procurement processes but paid limited attention to overall organizational performance. The present study addressed these gaps by examining how e-tendering influences procurement efficiency, supplier relationships, financial performance, and service delivery within Garissa County Government.

Empirical studies on e-invoicing similarly demonstrate its contribution to organizational performance. Njoroge (2020), using a descriptive research design in Kenyan parastatals, found that e-invoicing reduced invoicing errors, shortened invoice processing time, and lowered transaction costs, thereby improving financial performance. However, the study did not examine operational efficiency and supplier management outcomes. Kariuki (2019), through a mixed-methods study in Nairobi County public institutions, established that e-invoicing improved accuracy and accelerated payment processing. Nevertheless, the study focused largely on short-term financial gains without considering long-term sustainability of e-invoicing systems. Mburu (2021) further reported that e-invoicing reduced paperwork, enhanced audit trails, and accelerated invoice approvals in county governments. However, the study concentrated primarily on procurement efficiency rather than broader organizational performance indicators. Similarly, Muthoni and Maina (2020) found that e-invoicing improved regulatory compliance and minimized manual processing errors in public sector institutions, though they did not examine its effect on service delivery. This study therefore extended previous findings by examining the effect of e-invoicing on financial performance, procurement efficiency, supplier management, and service delivery in Garissa County Government.

Research on e-payment systems also highlights their importance in improving organizational performance. Owino (2021), using a cross-sectional survey in Kenyan public institutions, found that e-payment systems reduced transaction costs and payment processing time, thereby improving financial efficiency. However, the study did not consider non-financial outcomes such as supplier satisfaction and operational efficiency. Kimani and Mwangi (2019) established that e-payment systems reduced procurement fraud and enhanced procurement efficiency in Kenyan counties, although the study focused primarily on procurement effectiveness rather than overall organizational performance. Njogu (2020), through a case study approach, reported that e-payment systems improved transparency and reduced delays in public sector payments, but failed to examine implementation challenges faced by smaller county governments. Similarly, Wangbui and Otieno (2021) found that e-payment technologies enhanced transparency and reduced fraud risks in county governments, although they overlooked operational performance indicators such as time efficiency and process effectiveness. The current study addressed these gaps by examining the influence of e-payment systems on financial efficiency, operational performance, supplier relationships, and service delivery in Garissa County Government.

Studies on e-sourcing have also demonstrated significant contributions to procurement and organizational performance. Nyaga (2022), using a descriptive survey design in Kenyan public institutions, found that e-sourcing improved supplier selection and strengthened supplier relationship management. However, the study did not evaluate broader organizational outcomes such as cost efficiency and service delivery. Ochieng and Mungai (2019) established that e-sourcing enhanced procurement transparency and reduced procurement cycle time in Kenyan counties, though the study focused narrowly on procurement efficiency. Mugambi (2021), employing a mixed-methods approach in Nairobi County, found that e-sourcing promoted supplier competition and reduced procurement costs. Nevertheless, the study did not adequately assess the long-term influence of e-sourcing on supplier relationships and contract management. This study therefore expanded existing literature by examining the effect of e-sourcing on procurement efficiency, financial performance, supplier management, and service delivery in Garissa County Government.

3. RESEARCH METHODOLOGY

This study adopted a descriptive research design to examine the effect of automated procurement systems, specifically e-tendering, e-invoicing, e-sourcing, and e-payment, on the performance of Garissa County Government in Kenya. Descriptive research was considered appropriate because it enables the researcher to establish the nature, characteristics, and relationships of a phenomenon under investigation (Cooper & Schindler, 2003).

The target population comprised 163 employees drawn from the Finance and Economic Planning department, County Assembly Members (CAM), Chief Officers (COs), and directors within Garissa County Government. Employees from the Finance and Economic Planning department formed the majority of the population because of their direct involvement in county financial management and procurement activities. Stratified random sampling was used to ensure representation of the different categories of respondents, while purposive sampling was applied for County Assembly Members, Chief Officers, and directors. Using the Kothari (2004) sample size determination formula, a sample size of 121 respondents was obtained, consisting of 111 employees from the Finance and Economic Planning department, one County Assembly Member, eight Chief Officers, and one director.

Primary data were collected using structured questionnaires administered through a drop-and-pick method to maximize response rates. To ensure reliability and validity of the research instrument, expert opinions from supervisors and academic professionals were sought before data collection. Reliability was assessed using Cronbach's Alpha coefficients through SPSS analysis. The results indicated acceptable to excellent reliability levels across all study variables, with e-tendering recording an alpha coefficient of 0.821, e-sourcing 0.804, e-invoicing 0.837, and e-payment 0.789, while the overall scale reliability coefficient was 0.863, confirming the consistency and suitability of the instrument for the study (Hair et al., 1998; George, 2003).

Validity was established through consultation with the research supervisor and use of multiple sources of evidence to ensure the instrument adequately measured the intended constructs (Mugenda & Mugenda, 2003; Yin, 2003). Data analysis was conducted using Statistical Package for Social Sciences (SPSS) version 22. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to analyze quantitative data, while qualitative responses from open-ended questions were analyzed using content analysis. The study further employed multiple regression analysis to determine the relationship between automated procurement systems and county performance measured through Own Source Revenue (OSR). The regression model included e-tendering, e-invoicing, e-sourcing, and e-payment as independent variables and county performance as the dependent variable.

Ethical considerations were strictly observed throughout the study. Respondents participated voluntarily after providing informed consent, confidentiality and anonymity of responses were maintained, and all collected information was used strictly for academic purposes. Necessary research authorization was obtained, and all referenced materials were properly acknowledged.

4. RESEARCH FINDINGS AND DISCUSSION

4.1 Descriptive Analysis of Automated Procurement Systems

The study examined the influence of automated procurement systems on the performance of Garissa County Government by assessing four key dimensions: e-tendering, e-sourcing, e-invoicing, and e-payment. Descriptive statistics including means, standard deviations, and coefficients of variation were used to summarize respondents' perceptions regarding the effectiveness of these systems.

4.1.1 Electronic Tendering

E-tendering was perceived as moderately effective in improving procurement performance in Garissa County, with an aggregate mean score of 3.636 and standard deviation of 0.550. Respondents strongly agreed that e-tendering enhanced transparency, efficiency in bid management, accountability, and reduced procurement time. However, perceptions regarding cost reduction and long-term financial savings were comparatively moderate, suggesting that while operational and governance improvements were evident, financial benefits remained inconsistent.

ISSN 2348-3156 (Print)
International Journal of Social Science and Humanities Research ISSN 2348-3164 (online)
Vol. 14, Issue 2, pp: (173-183), Month: April - June 2026, Available at: www.researchpublish.com

Table 4.1: Electronic-Tendering

Statements	M	SD	CV (%)
The online bidding process improves efficiency in bid management.	3.742	0.531	14.20
E-tendering reduces the time required to complete the tender process.	3.681	0.548	14.89
E-tendering helps in minimizing procurement costs for the county government.	3.544	0.563	15.89
The use of e-tendering leads to significant cost savings.	3.402	0.601	17.67
E-tendering promotes transparency in the procurement process.	3.789	0.517	13.64
I believe that e-tendering has increased accountability in procurement.	3.655	0.540	14.77
Aggregate Score	**3.636**	**0.550**	**15.13**

Source: Field Data (2026)

The findings support previous studies which established that e-tendering improves procurement transparency, accountability, and operational efficiency (Abiodun, 2022; Akinyemi, 2020; Mwangi & Karanja, 2021; Okech & Mutua, 2019).

4.1.2 Electronic Sourcing

The findings revealed that e-sourcing improved procurement efficiency, supplier competition, and access to a wider supplier base in Garissa County. Respondents strongly agreed that e-sourcing streamlined procurement operations and enhanced supplier performance. However, perceptions regarding negotiation opportunities and quality improvement were less consistent.

Table 4.2: E-Sourcing

Statements	M	SD	CV (%)
E-sourcing enables access to a wider range of suppliers.	3.701	0.536	14.48
The use of e-sourcing improves supplier performance.	3.588	0.559	15.58
E-sourcing enhances competition among suppliers.	3.622	0.547	15.10
The procurement process has become more efficient with e-sourcing.	3.744	0.528	14.10
E-sourcing provides better negotiation opportunities with suppliers.	3.497	0.574	16.41
The quality of goods and services has improved due to e-sourcing.	3.455	0.586	16.96
Aggregate Score	**3.601**	**0.555**	**15.44**

Source: Field Data (2026)

The results align with previous findings that e-sourcing enhances procurement transparency, supplier management, competition, and operational efficiency (Nyaga, 2022; Ochieng & Mungai, 2019; Mugambi, 2021).

4.1.3 Electronic Invoicing

E-invoicing was found to significantly improve billing accuracy, compliance with procurement terms, transaction tracking, and invoice processing efficiency. Respondents particularly acknowledged the reliability of e-invoicing systems in financial transaction monitoring. However, communication with suppliers and reporting capabilities recorded comparatively lower ratings.

Table 4.3: E-Invoicing

Statements	M	SD	CV (%)
E-invoicing ensures accuracy in billing between the county and suppliers.	3.733	0.529	14.17
The e-invoicing system helps in maintaining compliance with procurement terms.	3.645	0.541	14.84
E-invoicing reduces processing time for invoices.	3.712	0.535	14.41
I find e-invoicing to be reliable for tracking financial transactions.	3.789	0.519	13.70
The e-invoicing system provides comprehensive reporting capabilities.	3.566	0.560	15.70
E-invoicing improves communication with suppliers regarding payment status.	3.488	0.579	16.60
Aggregate Score	**3.656**	**0.544**	**14.88**

Source: Field Data (2026)

These findings are consistent with studies showing that e-invoicing improves financial accuracy, compliance, audit trails, and operational efficiency (Njoroge, 2020; Kariuki, 2019; Mburu, 2021; Muthoni & Maina, 2020).

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International Journal of Social Science and Humanities Research ISSN 2348-3164 (online)
Vol. 14, Issue 2, pp: (173-183), Month: April - June 2026, Available at: www.researchpublish.com

4.1.4 Electronic Payment

Respondents agreed that e-payment systems improved payment timeliness, transaction security, user confidence, and procurement efficiency. Nevertheless, respondents expressed less satisfaction regarding cost reduction and effectiveness of payment management, indicating persistent institutional and administrative challenges.

Table 4.4: E-Payment

Statements	M	SD	CV (%)
E-payment systems facilitate timely payments to suppliers.	3.755	0.523	13.93
The use of e-payment reduces transaction costs significantly.	3.432	0.595	17.34
E-payment enhances security for financial transactions.	3.601	0.552	15.33
I feel confident in using e-payment for procurement transactions.	3.678	0.538	14.63
E-payment has improved the overall procurement process.	3.721	0.529	14.22
The county government effectively manages payments through e-payment systems.	3.101	0.640	20.64
Aggregate Score	**3.548**	**0.563**	**15.87**

Source: Field Data (2026)

The findings support earlier studies which concluded that e-payment systems improve transparency, reduce fraud, enhance financial efficiency, and strengthen procurement operations (Owino, 2021; Kimani & Mwangi, 2019; Njogu, 2020; Wangbui & Otieno, 2021).

4.1.5 County Performance (Own Source Revenue)

The study assessed county performance using Own Source Revenue (OSR) trends from 2015 to 2023. The findings revealed significant fluctuations in revenue performance over the study period.

Table 4.5: Garissa County OSR Trend (2015–2023)

Year	OSR (Ksh Millions)	Remarks
2015	105.94	Initial post-devolution stabilization
2016	81.96	Decline in revenue mobilization
2017	86.69	Slight recovery, still below 2015
2018	108.30	Improved collection efforts
2019	109.92	Marginal growth maintained
2020	103.53	Slight drop, pandemic impact
2021	65.62	Sharp decline, lowest in series
2022	81.36	Modest recovery
2023	248.97	Significant surge, highest recorded

Statistic	Value (Millions Ksh)
Mean (Average)	110.26
Standard Deviation	50.94

The results indicate that Garissa County experienced unstable revenue performance, characterized by periods of decline and modest recovery. The sharp increase in 2023 suggests implementation of new revenue enhancement measures, although the high standard deviation indicates substantial variability and inconsistency in revenue mobilization over time.

4.2 Multiple Regression Analysis

The regression analysis examined the relationship between automated procurement systems and county performance measured through OSR.

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Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.809a	.654	.601	.01382

a. Predictors: (Constant), E-Tendering, E-Invoicing, E-Sourcing, E-Payment

Source: Field Data (2026)

The model produced a strong positive correlation (R = 0.809) between automated procurement systems and county performance. The R Square value of 0.654 indicates that approximately 65.4% of variations in county performance were explained by e-tendering, e-invoicing, e-sourcing, and e-payment systems.

Table 4.7: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.190	4	1.548	8106.386	.000b
Residual	.017	87	.000		
Total	6.207	91			

Dependent Variable: OSR

b. Predictors: (Constant), E-Tendering, E-Invoicing, E-Sourcing, E-Payment

The ANOVA results indicate that the regression model was statistically significant (p = 0.000), confirming that automated procurement systems collectively had a significant influence on Garissa County's revenue performance.

Table 4.8: Coefficients

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	.064	.031		2.087	.040
E-Tendering	.158	.046	.167	3.443	.001
E-Invoicing	.451	.027	.522	17.017	.000
E-Sourcing	.337	.012	.276	27.651	.000
E-Payment	.064	.027	.104	2.371	.020

Dependent Variable: County Performance (OSR)

Source: Field Data (2026)

The regression coefficients indicate that all four automated procurement systems had positive and statistically significant effects on county performance. E-invoicing had the strongest influence on OSR ($\beta = 0.451$, $p < 0.001$), followed by e-sourcing ($\beta = 0.337$, $p < 0.001$), e-tendering ($\beta = 0.158$, $p = 0.001$), and e-payment ($\beta = 0.064$, $p = 0.020$). These findings demonstrate that automated procurement systems significantly enhance financial efficiency, transparency, procurement effectiveness, and overall county performance in Garissa County Government.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The study concluded that automated procurement systems significantly influence the performance of Garissa County Government, although organizational outcomes are also shaped by broader governance, economic, and institutional factors. The findings showed that e-tendering positively enhanced transparency, accountability, and procurement efficiency by streamlining procurement processes and reducing opportunities for corruption. However, its contribution was less dominant compared to other automated systems, suggesting the need for stronger integration with financial monitoring and supplier relationship management frameworks. The study further established that e-sourcing had a strong positive effect on county performance through improved supplier selection, increased competition, and enhanced procurement efficiency. The findings demonstrated that e-sourcing supports transparency, cost reduction, and sustainable supplier relationships, making it a critical driver of organizational performance in county governments.

In addition, e-invoicing emerged as the most influential predictor of county performance. The system improved billing accuracy, compliance, transaction tracking, and invoice processing efficiency, thereby strengthening financial management and accountability. The findings indicate that e-invoicing plays a central role in improving operational and financial efficiency within the county government. The study also found that e-payment positively contributed to county performance by improving timeliness, transaction security, and transparency in financial transactions. However, its influence was comparatively lower due to challenges associated with payment management, financial controls, and implementation inefficiencies. This implies that while e-payment systems improve operational efficiency, additional institutional reforms are necessary to maximize their effectiveness.

5.2 Recommendations

The study recommends that Garissa County Government strengthen transparency and accountability mechanisms within e-tendering systems by ensuring open access to tender information, conducting regular procurement audits, and integrating e-tendering with financial monitoring systems. Continuous training of procurement staff should also be prioritized to enhance effective use of digital procurement platforms and improve long-term procurement sustainability. The county should also enhance e-sourcing practices by promoting supplier diversity, fair competition, and effective supplier performance monitoring. Policies aimed at standardizing negotiation procedures and strengthening quality assurance mechanisms should be implemented to improve supplier relationships and procurement outcomes. Supplier training and awareness programs are also necessary to support effective participation in e-sourcing systems.

Further, the study recommends strengthening e-invoicing systems through standardized invoicing procedures, regular auditing of financial records, and improved communication between suppliers and county departments. Expanding reporting capabilities and training both staff and suppliers on digital invoicing platforms would improve compliance, financial accountability, and operational efficiency. Finally, Garissa County should improve the effectiveness of e-payment systems by strengthening financial management structures, enhancing transaction security, and ensuring timely supplier payments. The county should integrate e-payment systems with broader financial management frameworks and provide adequate staff training to improve confidence and efficiency in managing digital payments. Addressing administrative inefficiencies and improving supplier engagement would further enhance the financial and operational benefits of e-payment systems.

REFERENCES

[1] Abiodun, T. (2022). E-tendering and organizational efficiency in public procurement. *Nigerian Journal of Public Administration, 15*(3), 102–118.

[2] Acs, Z. J., Audretsch, D. B., & Lehmann, E. E. (2008). The knowledge spillover theory of entrepreneurship. *Journal of Business Venturing, 23*(6), 635–657. https://doi.org/10.1016/j.jbusvent.2008.01.001

[3] Akinyi, P., & Njenga, D. (2023). The impact of procurement systems on county government performance in Kenya. *International Journal of Public Administration, 45*(2), 120–135.

[4] Akinyemi, O. (2020). E-tendering and procurement performance in local governments in South Africa: A mixed-methods approach. *African Journal of Procurement, 8*(2), 58–77.

[5] Baumol, W. J. (1990). Entrepreneurship: Productive, unproductive, and destructive. *Journal of Political Economy, 98*(5), 893–921. https://doi.org/10.1086/261712

[6] Cooper, D. R., & Schindler, P. S. (2003). *Business research methods* (8th ed.). McGraw-Hill/Irwin.

[7] Covin, J. G., & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship Theory and Practice, 16*(1), 7–25. https://doi.org/10.1177/104225879101600102

[8] Davis, R., & Thompson, M. (2021). The role of automated procurement systems in improving public sector efficiency in the U.S. *Journal of Government Financial Management, 33*(1), 45–58.

[9] Diallo, A., & Ibrahim, H. (2022). E-procurement and its effect on supplier competition in Chad. *African Journal of Procurement and Supply Chain Management, 12*(4), 211–230.

[10] Drucker, P. F. (1985). *Innovation and entrepreneurship: Practice and principles*. Harper & Row.

[11] Fagerberg, J., Mowery, D. C., & Nelson, R. R. (Eds.). (2012). *The Oxford handbook of innovation*. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199286805.001.0001

[12] George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference* (4th ed.). Allyn & Bacon.

[13] Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (1998). *Multivariate data analysis* (5th ed.). Prentice Hall.

[14] Harris, M. (1970). The nature of entrepreneurship: Economic theory perspectives. *The Economic Journal, 80*(318), 273–295.

[15] Hindle, K. (2009). The relationship between innovation and entrepreneurship: Easier said than done. *Journal of Business Venturing, 24*(2), 341–350. https://doi.org/10.1016/j.jbusvent.2008.10.003

[16] Kariuki, A. (2019). Adoption of e-invoicing systems and organizational performance in public institutions in Nairobi County. *Journal of Information Systems and Public Administration, 6*(4), 212–234.

[17] Kimani, J., & Githinji, R. (2022). Performance measurement indicators for county governments in Kenya. *Public Sector Performance Journal, 9*(3), 101–117.

[18] Kimani, R., & Mwangi, P. (2019). The role of e-payment systems in enhancing public procurement efficiency in Kenyan counties. *African Journal of Business and Procurement, 7*(3), 98–112.

[19] Kenya Institute for Public Policy Research and Analysis (KIPPRA). (2024). *Revenue generation and expenditure patterns of county governments in Kenya*. KIPPRA.

[20] Kiptoo, M., & Njenga, S. (2023). The effects of e-procurement on cost reduction in county governments in Kenya. *Kenya Journal of Public Administration and Policy, 6*(2), 140–160.

[21] Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age International Publishers.

[22] Kuhn, T. S. (2008). *The structure of scientific revolutions* (3rd ed.). University of Chicago Press.

[23] Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review, 21*(1), 135–172. https://doi.org/10.5465/amr.1996.9602161568

[24] Mburu, J. (2021). E-invoicing and the efficiency of procurement functions in county governments in Kenya. *International Journal of Procurement and Supply Chain Management, 5*(2), 45–63.

[25] Mensah, E., Yusuf, S., & Omar, F. (2021). E-procurement systems and their role in enhancing public procurement transparency. *Journal of Information and Technology in Public Administration, 29*(3), 92–105.

[26] Minniti, M., & Lévesque, M. (2010). Entrepreneurial types and economic growth. *Journal of Business Venturing, 25*(3), 305–314. https://doi.org/10.1016/j.jbusvent.2008.10.002

[27] Mkhize, N., & Van Rooyen, K. (2021). The impact of automated procurement on public sector fraud reduction in South Africa. *Journal of African Public Sector Performance, 34*(1), 87–110.

[28] Mokaya, P., & Musau, S. (2021). Organizational performance indicators: A focus on financial and operational metrics. *Management Science Review, 17*(2), 78–95.

[29] Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches*. Acts Press.

[30] Muthoni, K., & Maina, M. (2020). E-invoicing and public sector performance in Kenya. *Journal of Public Procurement and Performance, 8*(3), 181–196.

[31] Mutuku, M. K. (2019). *Electronic Commerce Capability and Performance of Commercial Banks in Kenya* (Doctoral dissertation, Doctoral Dissertation, Kenyatta University).

[32] Mwangi, J., & Mungai, W. (2023). E-sourcing and procurement efficiency in Kenyan public institutions. *East African Journal of Public Sector Management, 12*(4), 245–263.

[33] Mwangi, P., & Karanja, S. (2021). Adoption of e-procurement systems and public sector performance in Kenya: A case study of government ministries. *East African Journal of Public Administration, 10*(1), 55–72.

[34] Mwita, P., & Njau, A. (2023). Enhancing procurement efficiency through digital platforms in Tanzania. *Tanzania Public Administration Review*, *8*(1), 68–89.

[35] Nabukeera, R., & Kateregga, M. (2021). The influence of e-procurement systems on procurement fraud reduction in Uganda. *Uganda Journal of Public Administration*, *18*(2), 123–140.

[36] Ndei, F. M., & Mutuku, M. (2021). Electronic Procurement and Performance of Non-Governmental Organizations in Kenya. Empirical Evidence from Pathfinder International, Kenya. *J. Bus. Manag. Sci*, *9*(1), 71-80.

[37] Njiru, D., & Muthoni, K. (2021). Accountability and transparency in county government procurement systems: A case of Kenya. *Public Sector Innovation Review, 15*(2), 180–200.

[38] Njogu, M. (2020). E-payment systems and organizational performance in the public sector: A case study of Kenyan counties. *International Journal of Public Sector Management*, *14*(2), 101–118.

[39] Njoroge, S. (2021). County government revenue mobilization: Lessons from Kenya. *Public Finance Journal of Kenya*, *21*(4), 102–118.

[40] Njoroge, W. (2020). E-invoicing adoption and financial performance in Kenyan parastatals. *Journal of Finance and Accounting*, *11*(1), 74–91.

[41] Nyaga, K. (2022). E-sourcing systems and supplier relationship management in public institutions in Kenya. *Journal of Supply Chain Management*, *14*(3), 57–76.

[42] Ochieng, A., & Onyango, E. (2020). E-invoicing and payment efficiency in public sector procurement in Kenya. *Journal of Procurement and Finance*, *19*(2), 203–221.

[43] Ogallo, R., & Otieno, J. (2021). Leveraging e-procurement to enhance own source revenue management in Kenyan counties. *Kenya Policy and Governance Review*, *9*(3), 135–153.

[44] Okonkwo, P., & Mba, D. (2021). E-tendering and performance efficiency in Nigerian public institutions. *Journal of Public Sector Innovation*, *14*(2), 199–217.

[45] Schumpeter, J. A. (1942). *Capitalism, socialism and democracy*. Harper & Brothers.

[46] Schumpeter, J. A. (2013). *The theory of economic development* (R. Opie, Trans.). Harvard University Press. (Original work published 1934). https://doi.org/10.4159/harvard.9780674423706

[47] World Bank. (2022). *Digital procurement for development: Opportunities and challenges in Sub-Saharan Africa*. World Bank Group.