International Journal of Economics, Business and Accounting Research (IJEBAR)
Peer Reviewed – International Journal
Vol.10, Issue-1, 2026 (IJEBAR)
E-ISSN: 2614-1280 P-ISSN 2622-4771
https://jurnal.stie-aas.ac.id/index.php/IJEBAR

ELECTRONIC CONTRACT MANAGEMENT AND ITS INFLUENCE ON PERFORMANCE OF STATE CORPORATIONS IN KENYA

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Abstract: State-owned enterprises play a crucial role in carrying out government functions and mandates, thus facilitating economic growth and development. This study examines the extent to which state-owned enterprises have implemented electronic contract management and whether it has contributed to their performance. A descriptive correlational research design was adopted. The study targeted supply chain managers from 248 state-owned enterprises in Kenya. A sample of 153 respondents was obtained and selected through a stratified random sampling technique. A questionnaire was used to collect research data, which was analyzed using descriptive and inferential statistics. The results revealed that electronic contract management significantly impacts the performance of state-owned enterprises in Kenya. It was concluded that most companies have not effectively implemented electronic contract management and this is affecting their performance. Therefore, it is recommended that state-owned enterprises, through their management, integrate electronic systems in managing contracts as a way to improve effectiveness and efficiency in contract execution.

Keywords: *Electronic Procurement, electronic Contract Management, Organizational Performance, state Corporations*

Submitted: 2026-02-27; Revised: 2026-03-06; Accepted: 2026-03-07

1. Introduction

Procurement in the modern business landscape plays a fundamental role in steering success of organizations be it for profit or not for profit organizations. According to Romão and Ventur (2023), procurement especially in public sector is critical in driving effective service delivery as it incorporates the wide portion of government spending that is meant to provide public services to citizens. The authors noted the essence of strengthening effectiveness and efficiency of public procurement, through embrace of technological systems that promote efficient flow of processes in public procurement. As elaborated by Charnor and Quartey (2024), integrating technological systems in procurement process through embrace of electronic procurement is essential in ensuring not only effective flow of procurement functions, but also ensuring prudent and accountable use of resources. As a process, procurement has several phases which include the sourcing and requisition phase, solicitation, evaluation and negotiation phase, contracting and contract/order management phase, and approval, disputes, and record keeping phase. Embracing electronic procurement means that technological systems are employed in each of these phases. This paper, however, focused on contract management phase of

procurement process, where integration of technological systems in this phase (electronic contract management) was addressed.

Electronic contract management (ECM) involves the use of digital tools and processes to create, store, manage, and execute contracts. This approach enhances efficiency, reduces costs, and improves compliance and visibility in contract management (Kim & Kim, 2019). As one of the key phases in public procurement, contract management comes after the supplier has been sourced and contract awarded to the qualifying supplier (Njoki, Ismail, & Osoro, 2021). This phase involves closely monitoring the process of implementing the contract and carrying out essential steps during the implementation process including inspecting the progress of the contract, receiving suppliers' invoices as per the contract, and reporting on the progress of the contract (Guo, Liu, Shi, Gao, Luo, & Chen, 2021). Electronic contract management, therefore, entails undertaking all these functions through computer-assisted systems to ensure their effectiveness and efficiency.

The other aspect of electronic contract management is the electronic inspection. Inspection is generally the process of assessing the goods supplied or services rendered to ensure they are in line with the specifications as provided in the tendering documents (Weiguo, Lihua, Jieying, Peng, Qinglei & Yifei, 2023). Inspection is therefore carried out during the contract implementation process and it seeks to ensure quality, quantity, timeliness, and cost-effectiveness. Electronic inspection, therefore involves using digital tools to perform and record inspections related to contract execution, such as quality checks, compliance audits, and progress monitoring (Yigzaw, 2020). Through electronic inspection, organisations are able to provide real-time data as far as inspection results are concerned as well as promoting consistency through uniform inspection processes and standards. E-inspection as described by Sharma (2021) automatically generates and stores inspection records thus ensuring proper documentation of what has been supplied vis a vis what was specified. It also reduces the time and effort required for manual inspections, thus promoting efficiency in the procurement process. State agencies and other organizations that have integrated e-inspection do so through mechanisms such as integration of sensors and other Internet of Things (IoT) devises meant for continuous monitoring and automated data collection, as well as mobile inspection tools installed in smartphones or tablets to conduct inspections and record findings (Capocasale & Perboli, 2022).

Electronic reporting is the other aspects of e-contract management. Reporting is an essential practice in the implementation of contracts as it involves collection analysis and distribution of key reports and data regarding the performance of the contract (Songa & Akumuntu, 2024). This is meant to inform other stakeholders such as the senior management, development partners and the general public of the results attained during contract implementation. Electronic reporting, therefore, involves the digital creation, distribution, and analysis of reports related to contract performance, compliance, and other metrics. This is meant to strengthen accuracy of the reports by reducing errors in report generation and data entry, as well as promoting timeliness through provision of up-to-date information for decision-making (Guo et al., 2021). Electronically generated reports also are more accessible to stakeholders through digital platforms, and allows for tailored reports to meet specific needs and criteria (Kim & Kim, 2019).

The Government of Kenya loses significant amount of public funds through inappropriate public procurement practices and processes, that are exposed to inefficiencies. This is despite over 40% of the country's GDP being spent on public procurement. One of the major solutions for reduction of wastage of public funds is embracing e-procurement, including electronic

contract management. However, available evidence has shown mixed results on the ability of e-procurement to enhance efficiency and promote firm performance. While some studies show that e-procurement would have positive impact on performance, others show that it posses a threat for information insecurity and interference by few experts. In addition, most of the available literature has addressed electronic procurement in a general perspective, without singling out individual aspects of e-procurement such as electronic contract management. Public entities like the state corporations in Kenya phase the threat of poorly implemented contracts, owing to the fact that many suppliers have no guarantee of continued engagement as the policy encourages open-tendering for most of government procurements. It therefore remains imperative to keenly and effectively manage the contract implementation process to ensure value for money. While embracing electronic contract management would see more transparency and efficiency in managing contracts, there is limited evidence of whether this has been embraced among state corporations in Kenya. It is on this merit that the study sought to examine the embrace of electronic contract management in state corporations in Kenya, and its role in steering performance of the corporations.

Research Hypotheses

1. H_O: Electronic contract management has no significant relationship with performance of state corporations in Kenya
2. H_1: Electronic contract management has a significant relationship with performance of state corporations in Kenya

2. Literature Review

2.1. Electronic Contract Management and Performance of State Corporations

A study by Guo (2022) addressed the effects of electronic contract management on effectiveness of public procurement. The study revealed that Electronic Contract Management (ECM) plays a pivotal role in enhancing organizational performance by streamlining contract-related processes and ensuring greater efficiency, accuracy, and compliance. According to Guo (2022), electronic contract management entails digitizing contract creation, execution, and storage, thus eliminating the inefficiencies and risks associated with manual handling, such as errors, delays, and loss of documents. A different study by Omar, Jayaraman, Debe, Salah, Yaqoob, and Omar (2021) sought to evaluate the effectiveness of electronic contract management in public sector. The study revealed that electronic contract management was essential in steering effectiveness of public procurement. According to Omar *et al.* (2021), electronic contract management through e-invoicing accelerates payment cycles, reduces processing costs, and improves cash flow management, contributing to better financial and procurement processes in public sector.

Shatta, Mabina, and Myamba (2024) while analyzing electronic procurement in Tanzania's public sector focused on electronic contract management as one of the aspects of e-procurement. The findings revealed that electronic contract management played an integral role in steering effectiveness of public procurement. According to Shatta et al. (2024), electronic inspection through digital inspection tools enables real-time monitoring and consistent quality checks, ensuring contract compliance and early detection of issues, thereby reducing risks and enhancing service delivery. A similar study by Perera, Nanayakkara, and Weerasuriya (2021) revealed that e-contract management through e-reporting enhanced comprehensive reporting which provided real-time insights and analytics, facilitating informed decision-making and strategic planning. This integrated approach ensures that all aspects of

contract management, from negotiation to execution and monitoring, are seamless and transparent. Enhanced collaboration and communication across departments and with external stakeholders further drive organizational cohesion and productivity. By leveraging ECM, organizations can achieve greater operational efficiency, mitigate risks, ensure regulatory compliance, and ultimately enhance overall performance and competitiveness in the market.

Chen et al. (2021) carried out a study on the impact of E-Government and electronic contract management on public sector efficiency in China. The study examines the adoption of electronic contract management (ECM) systems within various government agencies. The authors found that ECM significantly improves procurement efficiency, reduces processing time, and minimizes errors. The study highlights a 30% increase in contract approval speed and a 25% reduction in administrative costs due to ECM implementation.

Mikušová, Nemec, and Jakuš (2024) did a study on enhancing public sector transparency through electronic contract management. The research focused on transparency and accountability in public procurement. Smith and Brown demonstrate that ECM systems enhance transparency by providing real-time access to contract information and audit trails. The study reports a 40% increase in stakeholder trust and a notable decline in corruption incidents, attributed to the improved monitoring capabilities of ECM systems.

In a similar study, Brunjes et al. (2023) addressed the effect of electronic contract management on performance in public healthcare. Their study addressed the impact of ECM on public healthcare institutions. The authors found that ECM enhances contract management efficiency, leading to better resource allocation and service delivery. The study noted that there was significant improvement in procurement efficiency and reduction in contract disputes within the healthcare sector.

Changalima, Mchopa and Ismail (2023) assessed the impact of ECM on public sector contract performance. The authors assessed ECM's impact on contract performance in the public sector. Müller et al. found that ECM systems lead to better contract management outcomes, including timely project completions and cost savings. The study highlights a 28% improvement in project completion rates and a 17% reduction in contract-related costs. In a similar study, Khalfan et al. (2022) analysed the effect of electronic contract management on public sector efficiency in developing countries. Focusing on developing countries, this research illustrated how ECM adoption can drive efficiency in public sector operations. The authors reported that ECM systems enhance contract management processes, resulting in significant reduction in procurement cycle time and increase in contract execution accuracy. The study also notes improvements in accountability and reduced corruption.

Conceptual Framework

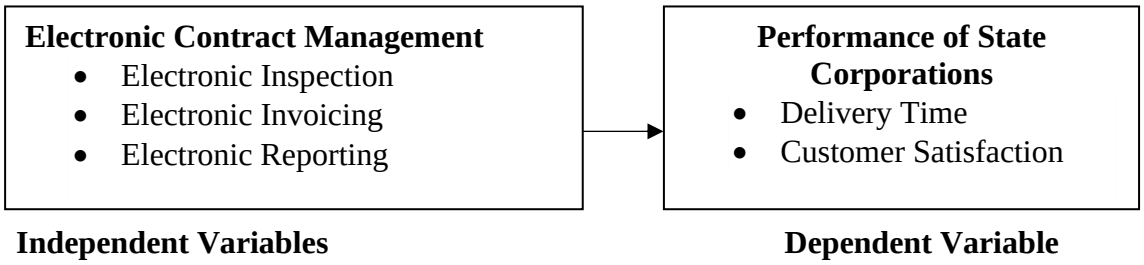

Figure 1. *Conceptual Framework*

3. Research Method

Research Design

The study adopted a descriptive correlational research design. The design entailed combination of both descriptive and correlational designs where descriptive approach enabled collection of qualitative and quantitative data as well as preliminary analysis of the results using descriptive statistics, while correlational design enabled analysis of quantitative results through inferential statistics to establish the relationship between electronic contract management and performance of state corporations.

Target Population and Sampling

The target population comprised of supply chain managers in the 248 state corporations in Kenya. Yamane's (1967) formula was used to determine the appropriate sample size for the study.

$$n = \frac{N}{1+N*e^2}$$

Where:

n is the sample size
N is the target population (248)
e is the error margin (0.05)

$$n = \frac{248}{1+248*0.05^2}$$

n = 153

The study used stratified random sampling to select the 153 respondents from the 248 state corporations. The state corporations were stratified into five categories based on their specific mandates, and a proportionate sample selected from each category.

Data Collection and Analysis

The study employed primary data as the main source of data, and it was collected using a questionnaire. The questionnaire was structured with both open-ended and closed-ended questions. It was administered physically through drop-and-pick method. The collected data was analyzed using descriptive and inferential statistics through Statistical Package for Social Sciences (SPSS). Descriptive statistics were used for the first and second objective, while inferential statistics through regression model were used for the third objective.

4. Research and Discussions

Response Rate of the Study

The study obtained a response rate of 97.4% where 149 respondents filled the questionnaire and handed it over for analysis. This was considered adequate for analysis and drawing conclusions and recommendations.

Electronic Contract Management in State Corporations

The study aimed at establishing the extent to which state corporations in Kenya had embraced electronic contract management in their procurement processes. The results as shown in Table 1 revealed that majority of the respondents disagreed with the statement that their respective state corporations inspected the ongoing contracts electronically through online systems (Mean = 2.88; Standard Deviation = 1.28); and that the suppliers were encouraged to integrate systems that enable them update the contracts' progress electronically (Mean = 2.55;

Standard Deviation = 1.23). From the overall mean score of 2.547, it is evident that most of the state corporations surveyed had not integrated electronic contract management, meaning that most of the corporations were managing their contracts manually. This implies that most of the corporations do not reap from the benefits of embrace electronic contract management. According to Alshurideh et al. (2021), electronic contract management through e-inspection of contracts is an effective way to migrate to electronic procurement as it minimize the paperwork thus providing more efficient monitoring of contracts' implementation. Further, Jatto et al. (2023) portrayed electronic inspection to be effective in ensuring traceability of contract processes, while reducing unnecessary delays and costs associated with manual inspection methods. According to Kilay et al. (2022), real-time tracking of contracts through e-contract invoicing is essential in ensuring timely payments of suppliers thus enhancing the effectiveness of procurement process. As noted by Ravikumar (2019), with ineffective embrace of real-time invoicing systems, the corporations risk losing audit trails, and this would imply poor performance as far as the corporations' procurement processes are concerned.

Table 1. Descriptive Results on Electronic Contract Management

Statements	Mean	Std. Dev.
1. Our corporation inspects the ongoing contracts electronically through online systems	2.88	1.28
2. Our suppliers are required to integrate systems that enable them update the contracts' progress electronically	2.55	1.23
3. The data collected during inspection of contracts is transmitted and stored electronically	2.72	1.43
4. Electronic invoicing is encouraged in our corporation	2.18	1.26
5. Most of suppliers in our organization submits their invoices electronically	2.90	1.38
6. There are systems put in place to ensure payments of contracts are paid electronically	2.57	1.21
7. Our corporation has embraced electronic systems to support monitor the progress of contracts electronically	2.47	1.17
8. Reporting on the progress of contracts in our corporation is done electronically	2.42	1.26
9. Our suppliers are required to report the progress of the contract electronically	2.42	1.26
10. The reports on contracts' progress are documented and shared electronically	2.36	0.95
Overall Mean Score	**2.547**	

Performance of State Corporations

The study sought to unveil the status of state corporations in Kenya in terms of performance through service delivery and customer satisfaction. The findings as shown in Table 2 revealed that most of the respondents disagreed that their respective state corporations had seen increased quality of services rendered over the past five years (Mean = 2.48; Standard Deviation = 1.26) and that the number of services offered to the public had increased over the

past five years (Mean = 2.31; Standard Deviation = 1.10). Moreover, the respondents disagreed that their respective state corporations now took lesser time to offer services to the public than it was five years ago (Mean = 2.72; Standard Deviation = 1.25). Reducing waiting time is one approach through which organizations can enhance satisfaction and at the end of the day, attract more customers thus attaining the ultimate results of enhanced profitability. The findings are a clear indication that the immediate outputs of electronic procurement in terms of enhancing accountability, promoting effectiveness and stimulating customer satisfaction had not been achieved in most of the state corporations surveyed. According to Mukunga and Ngugi (2018), the slow embrace of electronic procurement can be blamed for increased misappropriations in the state corporations, which deprives the public of quality services as it is expected. In line with Moghaddasi and Heidariteknologi (2019) ease of use, speed, accuracy, reliability, and accountability as six components of modern IT have a positive and significant impact on customer satisfaction.

Table 2. Performance of State Corporations

Statements	Mean	Std. Dev.
1. Our state corporation has seen increased quality of services rendered over the past five years	2.48	1.26
2. We have been able to increase the number of services offered to the public over the past five years	2.31	1.10
3. The corporation now takes lesser time to offer services to the public than it was five years ago	2.72	1.25
4. The waiting time of our services among our customers has significantly reduced over the past five years	2.76	1.54
5. More customers have expressed their increased satisfaction with the services offered at our corporation	2.57	1.24
6. There have been audit trails for the expenditures of our state corporation for the past five years	2.40	1.23
7. There has been a significant reduction in the number of public funds misappropriation cases our agency for the past five years	2.17	1.26
8. The overall effectiveness of our state corporation in meeting its mandates has been enhanced over the last five years	2.89	1.04
Overall Mean Score	2.537	

Relationship between Electronic Contract Management and Performance of State Corporations

The third objective was to establish the relationship between electronic contract management and performance of state corporations in Kenya. The regression model results as shown in Table 3 revealed that a Pearson correlation coefficient (r) of 0.799 was obtained implying that there is a 79.9% correlation between electronic contract management and performance of state corporations in Kenya. The coefficient of determination (R-square) of 0.639 was obtained, implying that 63.9% variation in performance of the state corporations in Kenya would be explained by electronic contract management. The ANOVA results revealed that the model was statistically significant as supported by an F-statistic of 259.747 and the reported p-value of 0.000. The regression of coefficients revealed that electronic contract

management had a significant and positive influence on performance of state corporations in Kenya (β =0.783, p=0.000). This implies that electronic contract management can significantly predict performance of state corporations in Kenya.

Table 4. Regression Model Results on Electronic Contract Management

Model Summary		ANOVA Test		Regression Coefficients		
R	**R Square**	**F**	**Sig.**	**Beta**	**t**	**Sig.**
.799	.639	259.747	.000[b]	.783	16.117	.000

a. Dependent Variable
b. Predictors: Electronic contract management

5. Conclusion

The study concluded that electronic contract management, which is a critical component of effective e-procurement, has not been adequately adopted in the surveyed state corporations in Kenya. The lack of integration of electronic systems for invoicing, reporting, and inspection suggests potential inefficiencies in the procurement process, potentially leading to delays, increased costs, and reduced transparency. These findings align with existing literature that highlights the importance of electronic contract management in ensuring seamless contract implementation and improving organizational performance in procurement.

Recommendations

The management of state corporations ought to embrace electronic contract management as one of practices of electronic procurement. This would be instrumental in ensuring that the payments can be traced thus promoting accountability and audit trails. The senior managers in the state corporations should be at the forefront of ensuring that payments to suppliers are done electronically through means such as mobile payments, Real-time Gross Settlements, and electronic funds transfers. Such payments would be more efficient, effective and traceable for accountability purposes.

The national government through relevant ministries also has the mandate to ensure that the state corporations are adhering to the set procurement laws and policies. The ministries should support the state corporations to integrate electronic procurement as a way of strengthening their procurement processes. The support should be in form of sensitizations, funding and monitoring to ensure the procurement processes are carried out electronically.

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