Review Article

AN INVESTIGATION OF EFFECTS OF ELECTRONIC PROCUREMENT SYSTEMS ON ORGANIZATIONAL PERFORMANCE OF FREIGHT FIRMS IN MOMBASA COUNTY, KENYA

ABSTRACT

The application of electronic procurement systems immensely influences the performance of businesses especially in the freight sector. However, with existing challenges such as the vertical segmentation of the industry that allows big players to enjoy a market share of clients, smaller firms suffer as they remain to serve the few clients they can manage. Therefore, the purpose of this study was to investigate the effect of the electronic procurement system on the organizational performance of freight firms in Mombasa County. Specific objectives of the research were to investigate the effect of electronic marketplace, electronic tendering, electronic sourcing, and electronic material management on the organizational performance of freight firms in Mombasa County. The study further employed a descriptive design and stratified sampling procedure that selected samples to represent the population. The study sampled 254 employees including general managers and departmental heads from 80 freight firms in Mombasa County. Electronic mail questionnaires were the appropriate method of data collection methods and procedures. In addition, descriptive statistics of frequencies, means, standard deviation and variance were used as the data analysis techniques and procedures. Inferential statistics of Pearson correlation and linear regression was also used as the analysis methods, with the statistical package for social sciences (SPSS) as the analytical tool. Findings revealed that correlation analysis of electronic procurement systems positively and significantly affected the organizational performance of freight firms in Mombasa County with regression analysis showing a weak positive and significance p-value of 0.02. Moreover, the electronic marketplace had a standardized coefficient of 0.183 with a higher t-value of 3.165 and a p-value of 0.002 that was statistically significant. In addition, there was a weak positive and significant correlation between the electronic marketplace system and organizational performance ($r = 205$, $p = 0.002$). Electronic tendering showed a weak positive and significant correlation against returns on assets ($r = 0.157$, $p = 0.020$). Electronic sourcing had a statistically insignificant and negative effect on the transparency with there was a weak positive and insignificant correlation between electronic sourcing and organizational performance ($r = 0.22$, $p = 0.743$). The study therefore recommended more emphasis by policymakers in the standardization and streamlining of electronic processes across distinct departments since they are inter-linked with the procurement systems in most of these freight firms.

Keywords: Electronic procurement systems, freight firms and organizational performance

1.0 INTRODUCTION

Electronic procurement system is definitely among the crucial technologies contributing to the improvement of firms' performance. According to (Asumba 2010, pg. 3), electronic procurement is a computer-internet based system conditioned to complete discrete or cluster procurement processes that include “search, sourcing, negotiation, ordering, receipt, and post-purchase review.” Globally, electronic procurement positively impacted the performance of firms when implemented on a large-scale operation. In Indonesia, the manufacturing sector has been embracing electronic procurement thus recording

significant effects toward organizational performance (Masudin, et al., 2021). The study findings provide comprehensive basis of technology acceptance and use in large scale operation. However, the adoption rate of electronic procurement technologies is still relatively low or unknown as noted by various studies but majority of researchers agree that there has not been a full realization on the impact of electronic procurement technologies (Quesada, et al., 2010).

In India, electronic procurement system of e-market place reveals that amalgamating e-commerce and the transport industry leads to a significant benefit firm through improved organizational performance (Shetty, et al., 2020). Also, implementing the strategies and integrating organizations and systems improved their effectiveness as a performance measure thus aligning with this study's objective of improving organizational performance of freight firms. Adopting electronic procurement in the improvement of efficiency to the vendor transactions of the cement companies thus revolutionizing their management process system (Cherian, et al., 2020).

In Africa, Oppong (2020) fixated in establishing the adoption of e-procurement on the organizational performance of government commercial corporations in Ghana. The results provide a subtle to the positive effect of adopting electronic procurement with performance measures of cost reduction, improved transparency and accountability as required by this study's objective. Similarly, in Ghana, Desmond (2022) study noted positivity and significance effect in e-procurement towards the supply chain performance of health service departments that can be adopted by different hospitals. This result is intuitive to construe the extent to which electronic performance impacts operational performance of firms. However, electronic procurement has been harnessed to ensure the automation of procurement processes such as the tendering and contract awarding were seamless.

In Kenya, there have been significant studies that have tried to determine, analyze and establishing the effects of electronic procurement on organizational performance of different sectors. Songok (2018) was certain that implementing electronic procurement management practices would largely impact on the cost and reliability which are part of performance measures of institutions. On the other hand, Chebet and Kihara (2022) study in Nairobi County findings show that electronic procurement had positivity in influencing the procurement performance of manufacturing companies. The influence of the electronic procurement towards performance leads to the need of its implementation to connect suppliers and employees of the firms. Still in the public sector, Njeru and Muthini (2023) discovered the positive influence of electronic practices towards the performance through the electronic supplier sourcing and tendering.

In Mombasa County, established freight firms have exercised dominance over their counterparts, creating issues in client satisfaction and needing more operational performance objectives (Baraza, 2021). Electronic procurement systems such as e-tendering, e-sourcing, e-marketplace and e-material management are perceived to be costly to operate, thus leading to operational inefficiencies and increased cycle time (Ruzindana & Kalaskar, 2016). Also, suitable procedures for issuing supplier contracts lead to unprecedented corruption, which weakens the operational performance of firms with increased cycle time, poor quality products, and deteriorating relationships with clients (Kiusya, 2018). In addition, some freight firms still use manual systems that result in inefficiencies, creating poor operational performance metrics (Waithaka & Kimani, 2021). Moreover, electronic procurement system challenges are associated with cargo delays at the port due to technical issues hampering the seamless procurement process (Mwangeka, 2020).

Numerous research has been occasion and studied on electronic procurement systems. For instance, Njeru and Muthini (2023) established the influence of electronic procurement practices on performance counties in Kenya and revealed a significant influence between the two constructs. However, the study could have done better on the contextual gap as it focused on the public sector and Meru County. Similarly, Oppong (2020) focused on stated corporations, which is the public sector, creating a methodological gap to fill in this study. Also, Nani and Ali (2020) investigated the determinants of an effective electronic procurement system, which resulted in the improvement of accountability, transparency, and efficiency. However, the study suffered an empirical gap. Kiusya (2018), on the other hand, focused on electronic procurement practices in manufacturing firms, leading to a methodological and conceptual gap. Filling the methodological gap will be essential for the study. This research sought to investigate the electronic procurement systems that influence the organizational performance of freight firms in Mombasa County by answering the question: How does the electronic procurement system affect the organizational performance of freight firms in Mombasa County?

1.1 Statement of the Problem

Businesses thrive in an enabling environment with information technology as the driving force, especially with the implementation of an electronic procurement system to boost organizational performance. According to Kiusya (2018), firms adopting electronic procurement systems have had immense operational performance including reduced business costs, and access to wider markets. However, existing challenges such as the vertical segmentation of the industry that allows big players to enjoy a market share of clients, smaller firms suffer as they remain to serve the few clients they can manage (Baraza, 2021). In addition, increased taxation by the government and poor road networks affects operational performance of freight firms. Oppong (2020) on the other hand, believes that most firms still need to be more skeptical about applying electronic procurement systems in their procurement process as it's still a new technology. Nonetheless, freight companies have identified electronic procurement as a transactional enhancing technology that improves the efficiency of operations.

In Mombasa County, established freight firms have exercised dominance over their counterparts, creating issues in client satisfaction and needing more operational performance objectives (Baraza, 2021). Electronic procurement systems such as e-tendering, e-sourcing, e-marketplace and e-material management are perceived to be costly to operate, thus leading to operational inefficiencies and increased cycle time (Ruzindana & Kalaskar, 2016). Also, suitable procedures for issuing supplier contracts lead to unprecedented corruption, which weakens the operational performance of firms with increased cycle time, poor quality products, and deteriorating relationships with clients (Kiusya, 2018). In addition, some freight firms still use manual systems that result in inefficiencies, creating poor operational performance metrics (Waithaka & Kimani, 2021). Moreover, electronic procurement system challenges are associated with cargo delays at the port due to technical issues hampering the seamless procurement process (Mwangeka, 2020).

Numerous research has been occasion and studied on electronic procurement systems. For instance, Njeru and Muthini (2023) established the influence of electronic procurement practices on performance counties in Kenya and revealed a significant influence between the two constructs. However, the study could have done better on the contextual gap as it focused on the public sector and Meru County. Similarly, Oppong (2020) focused on stated corporations, which is the public sector, creating a methodological gap to fill in this study. Also, Nani and Ali (2020) investigated the determinants of an effective electronic procurement system, which resulted in the improvement of accountability, transparency, and efficiency. However, the study suffered an empirical gap. Kiusya (2018), on the other hand, focused on electronic procurement practices in manufacturing firms, leading to a methodological

and conceptual gap. Filling the methodological gap will be essential for the study. This research seeks to investigate the electronic procurement systems that influence the organizational performance of freight firms in Mombasa County by answering the question: How does the electronic procurement system affect the organizational performance of freight firms in Mombasa County, Kenya?

1.2 Objectives of the Study

i. To investigate the effect of the electronic marketplace on cost-effectiveness of freight firms in Mombasa County, Kenya.

ii. To evaluate the effect of electronic tendering on efficiency among freight firms in Mombasa County, Kenya.

iii. To assess the effect of electronic sourcing on the transparency of freight firms in Mombasa County, Kenya.

1.3 Research Questions

i. To what extent does electronic marketplace affect the cost-effectiveness of freight firms in Mombasa County, Kenya?

ii. What is the effect of electronic tendering on the efficiency of freight firms in Mombasa County, Kenya?

iii. How much does electronic sourcing affect transparency among freight companies in Mombasa County, Kenya?

2.0 THEORETICAL LITERATURE REVIEW

This study was anchored by two theories that is the technology acceptance model (TAM) and diffusion of innovation (DOI) theories.

2.1 Technology Acceptance Model (TAM)

The establishment of the technology acceptance model (TAM) was coined by Davis (1989). This model existed to examine the various factors interrelated to the acceptance of advanced technology in functional organizations. According to Kiusya (2018), TAM has been useful in explaining the utilization of technology that has mostly impacted the user expectations on the technology. These expectations widen as a result of the positive or negative attitude portrayed by users in specific adopted technologies. As such, the general determinants for adopting this technology and the behavior of users across the spectrum of technologies and populations are well explained and analyzed (Audu, 2018).

The basis of the TAM model are the perceived usefulness (PU) and perceived ease of use (PEU). According to Chebet and Kihara (2022), TAM identifies perceived usefulness and ease of use as the critical determinants of an actual system's use. However, Davis (1989) definitive nature of perceived usefulness poised that a prospective user's subjective probability to enhance job performance depends on their use of a specific application. Therefore, perceived ease of use can be identified from the user's perspective of free and effortless performance of tools or systems of operations.

The relevance of technology acceptance model (TAM) is exemplified in the success of implementing information and communication technology depending largely on the positive or negative behavior of advanced technology (Chatterjee, et al., 2012). Consequently, TAM offers a better explanation on perceived usefulness and perceived case of use of fundamental determinants of technology systems use and predicting attitudes toward use of the systems (Romanus et al., 2023). Therefore, the factors influencing the implementation of electronic procurement systems of freight firms in Mombasa County including e-market place, e-tendering, e-sourcing, and e-materials management amplifies organizational performance.

With respect to the TAM theory, it is easier for firms to predict innovation acceptance and usage in operations when implemented in the electronic procurement system. Also, TAM posits that adopting essential elements of electronic procurement can be critical in the expansion of operational performance of firms. Significantly, the theory is categorical in explaining the benefits of using the electronic procurement systems which are perceived to be ease of use which are mostly adopted by the management of firms to improve operational performance. As such, the technology acceptance model has shown its relevance to be chosen as it investigates the effects of the electronic procurement system on the operation performance of freight firms in Kenya despite the few limitations highlighted by critics of the theory.

2.2 Diffusion of Innovation Theory (DOI)

Rogers (1995) pioneered the development of the diffusion of innovation theory (DOI) suggesting that innovations are perceptions, processes or tools thought or seen to be new by an adoption unit or a user. DOI theory suggests that when the adopter is an organization, the internal structures and the organizational transparency influence the adoption rate. Also, as conceptualized by Everett and Rogers (1962), the DOI theory clarifies that diffusion is the operation that makes an innovation disseminated throughout time between people in a social system. Nonetheless, the theory categorizes innovation adopters into five classes including; innovators, early adopters, early majority, late majority and laggards.

The DOI theory posits a factual analytical and conceptual framework description of adopting innovation from the conceptualization to the implementation phase. However, Rogers (1995) explained the adoption rate of innovation being an intuitive pace for the integration of these innovations into the social system. Perhaps the pace is influenced by the perceived features of the innovation including derived benefits, suitability, flexibility, complexity, and tech capability. On the other hand, the user's adoption of new technology depends on the available time. As such, innovation diffusion theory provides for the actions of the end users when using technologies. However, these actions depend on organizations' positions when disseminating innovation that allows them to acquire a competitive advantage and safeguard user accounts and confidential information.

DOI focuses on the implementation of the new technologies that underpins its relevance to the electronic procurement systems. With DOI theory, organizations find it easier to integrate technologies such as the electronic procurement system as they are backed by an effective framework of investigation (Rogers, 2003).

The significance of the theory manifests from how it describes new technologies and other advances that are spread across companies, especially electronic procurement in freight firms. Profoundly, the argument in this study is that organizations strive to improve their operational performance through the adoption of new technologies, in this case electronic procurement systems that enhance the sharing of information, speed of transactions, and supplier coordination (Kiusya, 2018). Therefore, theory is relevant in this study through its capability to integrate new technologies that firms adopt such as the electronic procurement system.

3.0 RESEARCH METHODOLOGY

This study employed a descriptive research design. The target population was 310 employees from 80 freight firms in Mombasa County and a sample of 254 employees were selected using stratified sampling. Data collection was conducted using electronic mail questionnaires. To guarantee validity and reliability, pre-testing of instruments was done through Pilot testing study on twenty two (22) respondents who did not constitute the sample. Data analysis dependently used descriptive statistics of mean, standard deviation, and frequencies with help of Statistical Package for Social Sciences version 20 (SPSS v20)

software used to assess the quantitative data collected on the variables. Results were presented in various tables to give it a visual impression of the results. The researcher utilized linear regression model to determine the correlation between the independent and the dependent variable. The researcher made meaning and interpret, and subsequently drew conclusions from the analyzed data

4.0 RESULTS AND DISCUSSION

This part highlights and presents the analysis of data collected as well as interpretation of the findings regarding the effect of electronic procurement systems on organizational performance of freight firms

4.1 The effect of the electronic marketplace on cost-effectiveness of freight firms in Mombasa County, Kenya.

The primary objective of the study was investigating the effect of the electronic marketplace on cost-effectiveness of freight firms in Mombasa County. Table 1 presents findings from the investigation of electronic marketplace systems.

Table 1. Electronic Marketplace Systems and cost-effectiveness of freight firms

	N	SD	D	N	A	SA	Mean	Std. Deviation
The firm has an electronic system for transfer or exchange services.	220	0%	0%	0%	37%	63%	4.6273	.48463
The firm ensures institutional frameworks are maintained electronically.	220	0%	0%	4%	33%	63%	4.5955	.56129
The firm has a web system that matches buyers and sellers.	220	0%	0%	4%	29%	67%	4.6273	.56308
Sellers and buyers meet and exchange products electronically.	220	0%	0%	5%	45%	49%	4.4364	.59721
The firm's online businesses are enhanced through e-marketplace.	220	0%	0%	3%	45%	53%	4.5000	.55311
Average	**220**						**4.5573**	**.27926**

Source: Research Finding (2024)

Results from Table 1 indicate freight firms in Mombasa County have electronic systems for transfer or exchange of services (Mean = 4.6273, SD = .48463). The firms also have a web system that matches buyers and sellers (Mean = 4.6273, SD = .56308). Relatively, these freight firms ensure institutional frameworks are maintained electronically (Mean = 4.5955, SD = .56129). Moreover, the firm's online businesses are enhanced through e-marketplace (Mean = 4.5000, SD = .55311). However, sellers and buyers meet and exchange products electronically but at a lower capacity (Mean = 4.4364, SD = .59721).

The average mean of 4.5573 illustrates that the implementation of electronic marketplace systems was moderately satisfactory. This is a crucial step in improvement of electronic procurement systems adoption by the freight firms in Mombasa County for cost-effectiveness. Profoundly, a lower standard deviation of 0.27926 was attributable to the high implementation of electronic marketplace systems by freight firms.

4.2 The effect of electronic tendering on efficiency among freight firms in Mombasa County, Kenya.

The next objective focused on evaluating the effect of electronic tendering on efficiency among freight firms in Mombasa County. Table 2 presents findings from the electronic tendering implementation.

Table 2. Electronic tendering system and efficiency of freight firms

	N	SD	D	N	A	SA	Mean	Std. Deviation
The firm requests information electronically.	220	0%	0%	1%	31%	68%	4.6636	.50164
The firm meets supplier requests electronically.	220	0%	0%	6%	45%	49%	4.4227	.61073
Tender invitations are conducted electronically in the firm.	220	0%	0%	0%	41%	59%	4.5955	.49192
Tenders are electronically submitted by bidders.	220	0%	0%	4%	31%	65%	4.6045	.56776
The firm prepares and invites tenders online.	220	0%	1%	12%	35%	52%	4.3682	.74997
Average	**220**						**4.5309**	**.30929**

Source: Research Finding (2024)

Table 2 outcomes reveal that freight firms in Mombasa County request information electronically (Mean = 4.6636, SD = .50164). On the other hand, these firms allow the electronic submission of tenders from bidders (Mean = 4.6045, SD = .56776). Also, freight firms' tender invitations are conducted electronically (Mean = 4.5955, SD = .49192). In addition, the firms meet supplier requests electronically (Mean = 4.4227, SD = .61073). However, the Mombasa County based freight firms prepare and invite tenders online (Mean = 4.3682, SD = .74997) being at lower implementation capacity.

Generally, with an average mean of 4.5309 as compared to the electronic marketplace and electronic sourcing, electronic tendering has the lowest implementation in meeting the efficiency of freight firms. Relatively, a standard deviation of 0.30929 indicates a higher variability in meeting firm's efficiency suggesting a lower implementation of electronic tendering by freight firms in Mombasa County.

4.3 The effect of electronic sourcing on the transparency of freight firms in Mombasa County, Kenya.

The study was intensive on the third goal of assessing the effect of electronic sourcing on the transparency of freight firms in Mombasa County, Kenya. However, the outcomes are illustrated in Table 3.

Table 3. Electronic sourcing system and transparency of freight firms

	N	SD	D	N	A	SA	Mean	Std. Deviation
The firm provides an electronic auction for its products.	220	0%	0%	1%	44%	55%	4.5364	.52651
The firm's contracts are electronically modified.	220	0%	0%	1%	55%	43%	4.4182	.52136
The firm tracks products and services on an online system.	220	0%	0%	0%	41%	59%	4.5864	.49361
The firm has adopted an electronic sourcing software.	220	0%	0%	0%	41%	59%	4.5909	.49279

The firm has a database of pre-qualified suppliers with online access to essential information.	220	0%	0%	3%	41%	56%	4.5318	.55219
Average	**220**						**4.5327**	**.24814**

Source: Research Finding (2024)

Table 3 findings reveal that freight firms in Mombasa County have adopted electronic sourcing software (Mean = 4.5909, SD = .49279). Also, firms tracked products and services on an online system (Mean = 4.5864, SD = .49361). In addition, freight firms provided an electronic auction for their products (Mean = 4.5364, SD = .52651). Profoundly, the firms had databases of pre-qualified suppliers with online access of essential information (Mean = 4.5318, SD = .55219) while the firms contracts were electronically modified at a very lower implementation capacity (Mean = 4.4182, SD = .52136).

Comparably, electronic sourcing systems had an average mean 4.5327 which is considered moderate for implementation towards electronic marketplace and electronic tendering. Consequently, a higher standard deviation of 0.24814 indicates a variability that inhibits the realization of transparency among freight firms in Mombasa County. This in turn affects the implementation of electronic sourcing due to a moderate adoption by the firms.

4.4 The effect of the electronic procurement system on the organizational performance of freight firms in Mombasa County

A linear regression model that regulated the relationships between the variables of electronic marketplace, electronic tendering and electronic sourcing is illustrated and results presented in Table 4.

Table 4. Electronic procurement system and the organizational performance of freight firms

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.452	.389		8.866	.000		
	Electronic marketplace	.183	.058	.212	3.165	.002	.961	1.040
	Electronic tendering	.131	.053	.168	2.449	.015	.918	1.090
	Electronic sourcing	-.065	.068	-.067	-.964	.336	.884	1.131
a. Dependent Variable: Organizational Performance								

Source: Research Finding (2024)

From Table 4, the model would appear as follows:

$Y = 3.452 + 0.183X_1 + 0.131X_2 + -0.065X_3$

Where:

X_1= Electronic marketplace

X_2= Electronic tendering

X_3= Electronic sourcing

Y= Organizational performance

The model shows that organizational performance measured by transparency, cost-effectiveness, efficiency, and speed would decrease by 3.452, given that all the other factors are held constant at zero (electronic marketplace, electronic tendering and electronic sourcing). In addition, result in Table 4 indicates that a unit increase in electronic marketplace would lead to positive increase in organizational performance by 0.183 with a t-value of 3.165 and a statistically significant increase at 0.002. This positive coefficient suggests an increase in the embracing of electronic marketplace by freight firms based in Mombasa County.

The findings on the electronic marketplace coefficients relates with Shetty et al. (2020) where an increase in the adoption of e-commerce enhanced institutional frameworks, facilitated exchange services, and matched buyers and sellers thus improving the cost-effectiveness of freight firms. Also, Jung and Wook (2011) found that each type of electronic marketplace and buyer-supplier relationship advantages significantly correlated with financial performance of the companies. However, critics such as da Silva Ramos (2021) argued that sellers being one of the marketplace components had a lower operational performance having a negative and directly affected customer satisfaction.

On the other hand, Table 4 indicates that a unit increase in electronic tendering leads to a positive increase in organizational performance by 0.131 having a higher t-value of 2.449 and statistical significance at 0.015. This results means that any increase in the adoption of electronic tendering by freight firms in Mombasa County would increase the organizational performance. Findings from this study relate to Munyao and Moronge (2018) outcome where electronic tendering through the systems of e-information request and e-mailing had a significant impact on the procurement performance with operational performance of transparency and accountability.

However, a unit increase in electronic sourcing would decrease in organizational performance by negative 0.065 with a t-value of negative 0.067 and statistically insignificant p-value of 0.336. The findings of this coefficient was conflicted by Cherian et al. (2020) revealing significant factors that included respondents finding comfort using e-procurement with adequate training on electronic technology. In addition, the literature review of study revealed that e-sourcing is essential especially when requesting goods and services electronically as buyers and sellers are integrated. Kimutai and Ismael (2016) contrary found that cost reduction in organizations was crucial in customer service provided by the electronic sourcing system services such as e-tracking and e-contracting especially in the Kenya Generating Company Limited.

The collinearity diagnostics has two values of tolerance and variance inflation factor. Tolerance indicates the variability of the specified independent variable; if not explained by the independent variable in the model, less than 0.10 means multicollinearity must be conducted. However, the VIF shows that values above 10 indicate multicollinearity. Therefore, the table indicates that tolerance values of electronic marketplace, electronic tendering and electronic sourcing were 0.961, 0.918, and 0.884, respectively, supported by the VIF values of 1.040, 1.090, and 1.131 meaning they are within the multicollinearity assumption.

5.0 SUMMARY

The study aimed at investigating the effect of electronic procurement systems on the organizational performance of freight firms in Mombasa County. However, specific objectives that include: to investigate the effect of electronic marketplace on cost-effectiveness of freight firms in Mombasa County, to evaluate the effect of electronic tendering on efficiency among freight firms in Mombasa County and to assess the effect of electronic sourcing on the transparency of freight firms in Mombasa County, Kenya.
Therefore, the specific objectives in the following sections show a summary of the various findings.

Results revealed that electronic procurement systems had a coefficient of 3.452 on organizational performance. Due to an increase in the electronic procurement system with an enhanced organizational performance per unit, a favorable association between e-marketplace and its effect on organizational performance on freight firms in Mombasa County was realized. However, the electronic marketplace had a standardized coefficient of 0.183 with a higher t-value of 3.165 and a p-value of 0.002 that was statistically significant. In addition, there was a weak positive and significant correlation between the electronic marketplace system and organizational performance ($r = 205$, $p = 0.002$).

In addition, the study findings on electronic marketplace correlated with Migdadi et al. (2016). The findings suggested that organizational factors such as availability of training, technical expertise and knowledge application and acquisition influenced electronic market place implementation thus affecting performance. Also, Romanus et al. (2023) noted that the electronic marketplace had a positive effect on the performance of Jumia Limited, Lagos Nigeria as it improved organizational marketing.

Based on the results of regression analysis, electronic tendering significantly affects the efficiency of freight firms in Mombasa County. A coefficient of 0.131 was calculated for the electronic tendering. This result demonstrated a favorable correlation between organizational performance and electronic tendering. In addition, a statistically significant effect was found for the probability linked to the t-test of 2.449 and a lower p-value of 0.015. Meanwhile, electronic tendering showed a weak positive and significant correlation against returns on assets ($r = 0.157$, $p = 0.020$). These results meant that electronic tendering was significant on the efficiency as the organizational performance measure of freight firms based in Mombasa County.

Utilizing an inferential statistics method of regression, the researchers found that electronic sourcing substantially decreased organizational performance of freight firms based in Mombasa County. Meanwhile, electronic sourcing scored -0.065 by focusing on coefficient, thus showing that it negatively affected organizational performance. Consequently, a p-value of 0.336 was assigned to the association between electronic sourcing and organizational performance, which was presented by an unacceptable probability of negative 0.067.
In addition, electronic sourcing had a statistically insignificant and negative effect on the transparency measure being one of the organizational performance of freight companies based in Mombasa County. Considering the expectations of companies towards improved organizational performance, there was a weak positive and insignificant correlation between electronic sourcing and organizational performance ($r = 0.22$, $p = 0.743$). Profoundly, the study findings compared to Tanooki and Alexander (2021) that revealed a positive and significant effect on organizational performance of at the Judiciary, Kenya creates a gap for future research on influencing factors to the results.

6. 0 CONCLUSION

Outcomes of the study showed that electronic procurement positively and significantly affected the organizational performance of freight firms based in Mombasa County. However, while the freight firms have made strides in the implementation of electronic procurement systems, few systems such as modification of contracts electronically, preparation and tender invitations online, there has been a tremendous success in adoption of other systems. Therefore, this means that freight firms' performance can improve with adoption of these procurement systems.

Electronic marketplace has been found to be integral in the reduction of costs and improvement of effectiveness. Providing an enabling online marketplace where sellers and buyers meet and exchange will immensely contribute to improvement of organizational performance. Also, freight firms' continuous

engagement online businesses enhance improved performance. Finally, electronic maintenance of institutional frameworks improves the organizational performance of freight firms.

Grounded on the study findings, it is concluded that electronic tendering positively and significantly affects organizational performance of freight firms based in Mombasa County. With the capability of these firms to electronically allow bidders to submit tenders, request information, and conduct tender invitations online, the implementation objective of the systems has been achieved. Despite having the lowest mean of the three systems, electronic tendering has proven crucial in determining the efficiency of freight firms in Mombasa County.

Finally, despite the negative and insignificant effect of electronic sourcing on organizational performance of freight firms based in Mombasa County as found by the study, this system's software has been critical in showing transparency in the companies. Also, the procurement system's relatively higher mean than e-tendering is attributable to the capability of freight firms to track products and services online. Nevertheless, the substantial impact on other measures of organizational performance of freight firms by electronic sourcing systems cannot be ignored. Therefore, the outcomes of the study demonstrates that e-marketplace and e-tendering positively and significantly affected the organizational performance of freight firms in Mombasa County with only e-sourcing showing a negative and insignificant effect.

7.0 Recommendations

Based on the study findings electronic procurement systems positively impacted the organizational performance of freight firms in Mombasa County. Therefore, these freight firms should prioritize the development and implementation of electronic marketplace, electronic tendering and electronic sourcing systems for improved performance. This can be done through training, capacity building, adopting electronic procurement software and research and development of new technologies for enhanced performance.

Study findings revealed that freight firms need to focus on the electronic marketplace to improve the development of online markets where buyers and sellers meet. Also, adoption of electronic marketplace systems by other firms that do not have will improve their performance. Among the issues to improve is allowing buyers and sellers to access the marketplace at their convenience. In addition, procurement professionals need to be equipped with new skills on how to handle these new technologies through training and benchmarks in other companies or even well-advanced nations.

Priority should be given to the improvement of the electronic sourcing system since findings show its negative and insignificant effects on performance. Meanwhile, freight firms from Mombasa County should meet supplier requests electronically as part of implementing e-sourcing. Also, these firms should prepare and invite tenders online. This therefore, requires the support of financial institutions including government waivers and incentives to promote the adoption of these electronic procurement systems. Moreover, efforts should be made by policymakers to standardize and streamline electronic processes across different departments since they are inter-linked with the procurement systems in most of these freight firms. This will contribute to speedy, efficiency, cost-effectiveness, and transparency.

Disclaimer (Artificial intelligence)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

REFERENCES

Audu, J. (2018). Technology adoption in Democratic Republic of Congo (DRC): An empirical study investigating factors that influence online shopping adoption. *Doctoral dissertation*, Universite d'Ottawa/University of Ottawa.

Asumba, G. (2010). B2B progress in Italian organization, A multiple case study. Human Resources Procurement Journal, 21(3), pp. 275- 292.

Baraza, S. A. (2021). The Effect of Human Resource Outsourcing on Performance of Logistics Companies in Mombasa County, Kenya. *Uonbi.ac.ke*. http://erepository.uonbi.ac.ke/handle/11295/160242

Chebet, J., & Kihara, A. (2022). Influence of E-Procurement on Procurement Performance in Manufacturing Firms in Nairobi County. *International Journal of Social Sciences Management and Entrepreneurship (IJSSME)*, *6*(1).

Cherian, T. M., Munuswamy, S., & Jasim, K. M. (2020). E-procurement practices to improve the efficiency of vendor transactions in Indian cement companies. *International Journal of Procurement Management*, *13*(4), 443-461.

Da Silva Ramos, A. F. (2021). Analysis and Assessment of Sellers' Operational Performance in an E-Marketplace.

Davis. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science, 35 (8):* , 982–1003.

Desmond, B. P. (2022). *The Effects of E-Procurement Practices on Supply Chain Performance: The Moderating Role of Supplier Integration* (Doctoral et al. University of Science and Technology, Kumasi).

Jung Oh, S., & Wook Kim, S. (2011). The effect of B2B e-marketplace type on buyer-supplier relational advantages of e-marketplace and firm performance. *Asian Journal on Quality*, *12*(2), 189-203.

Kimutai, B., & Ismael, N. S. (2016). Role of strategic e-sourcing practices on supply chain performance in state corporations in Kenya: A case of Kenya Electricity Generating Company Ltd. *International Academic Journal of Procurement and Supply Chain Management*, *2*(2), 113-133.

Kiusya, M. M. (2018). Effect Of E-Procurement Practices on the Operational Performance of Manufacturing Firms in Mombasa County, Kenya. *Uonbi.ac.ke*. http://hdl.handle.net/11295/105776

Masudin,et al. (2021). The effect of traceability system and managerial initiative on indonesian food cold chain performance: A Covid-19 pandemic perspective. Global Journal of Flexible Systems Management, 22(4), 331-356.

Migdadi, et al. (2016). An empirical assessment of the antecedents of electronic-business implementation and the resulting organizational performance. *Internet research*, *26*(3), 661-688.

Munyao, J. M., & Moronge, M. (2018). Influence of e-procurement practices on the performance of procurement in public universities in Kenya. *Strategic Journal of Business & Change Management, 5*(2), 1623-1628.

Mwangeka, R. M. (2020). Supply Chain Visibility and Operational Performance of Logistics Firms in Mombasa County, Kenya. *Uonbi.ac.ke*. http://erepository.uonbi.ac.ke/handle/11295/154540

Nani, D. A., & Ali, S. (2020). Determinants of Effective E-Procurement System: Empirical Evidence from Indonesian Local Governments. *Jurnal Dinamika Akuntansi Dan Bisnis*, *7*(1), 33-50.

Njeru, P., & Muthini, J. N. (2023). Influence of E-Procurement Practices on Performance of County Government in Kenya: A Case of Meru County Government. *International Research Journal of Business and Strategic Management*, *5*(2).

Oppong, W. A. (2020). Electronic Procurement and Organizational Performance Among Commercial State Corporations. *Journal DOI*, *10*, 22501991.

Quesada, et al. (2010). Impact of e-procurement on procurement practice and performance. Benchmarking Int. J.2010, 17,516-538.

Rogers, E. (2003). *Diffusion of Innovations. Fifth edition.* New York. Free Press:.

Rogers, E. M. (1995). Diffusion of Innovations: modifications of a model for telecommunications. *Die diffusion von innovationen in der telekommunikation*, 25-38.

Romanus, et al. (2023). Assessing E-business and Organizational Performance in Nigeria Today: Evidence from Jumia Ltd, Lagos. *Britain International of Humanities and Social Sciences (BIoHS) Journal*, *5*(2), 81-92.

Ruzindana, I. & Kalaskar, P.B. (2016). The Adoption of e-Procurement and its impact on the Procurement Performance of Selected Telecommunication Companies in Rwanda. European Journal of Business and Management. 8 (15),15-20.

Shetty, et al. (2020). Assessment of E-Marketplace in Increasing the Cost Efficiency of the Road Transport Industry. *PalArch's Journal of Archaeology of Egypt/Egyptology*, *17*(9), 3799–3840.

Songok, J. (2018). E-procurement Implementation and Performance of Public Universities in Kenya. *Uonbi.ac.ke*. http://hdl.handle.net/11295/105884

Waithaka, R. K., & Kimani, J. G. (2021). Effect of e-procurement practices on supply chain performance. *Global Journal of Purchasing and Procurement Management*, *1*(1), 32-42.