



**ELECTRONIC PROCUREMENT PRACTICES AND PERFORMANCE OF
HEALTHCARE NON-GOVERNMENTAL ORGANIZATIONS IN NAIROBI CITY
COUNTY, KENYA**

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ABSTRACT

The main objective of this study was to assess the effect of electronic procurement practices on performance of healthcare Non-Governmental Organizations in Nairobi city county, Kenya. Specifically, this study sought to examine the effect of electronic ordering on performance of healthcare NGOs in Nairobi city county and to assess the effect of electronic payments on performance of healthcare NGOs in Nairobi city county, Kenya. The study employed the descriptive research design. The study targeted procurement managers working with the Non-Governmental Organizations undertaking healthcare projects in Nairobi County. The total population was therefore 319 healthcare NGOs in Nairobi County. The Yamane formula was adopted to calculate the study sample size. The study utilized simple random sampling in selecting 177 respondents from study population. The study collected primary data using questionnaires. The questionnaire was pilot-tested using 10% of the sample size which is equivalent of 18 respondents. The data obtained during the pilot study was used to test for validity and reliability of the research instrument. Quantitative data collected was analyzed using descriptive statistical techniques which are frequencies, mean, standard deviation. Inferential statistics which include Pearson correlation and the Regression Analysis Model were used to test the relationship between study variables. The significance of the model will be tested at 5% level of significance. Data was analysed using Statistical Package for Social Sciences (SPSS) software version 27. The study results were presented through use of tables and figures. The results revealed that electronic ordering had a significant effect on performance of healthcare non-governmental organizations in Nairobi County, Kenya ($\beta = 0.307$; $P = 0.000 < 0.05$). Finally, electronic payment was found to significantly and positively influence performance of healthcare non-governmental organizations in Nairobi County, Kenya ($\beta = 0.253$; $P = 0.000 < 0.05$). The study concluded that although found to strongly influence effectiveness of procurement processes for enhanced performance, electronic procurement was not effectively embraced in most of the healthcare NGOs surveyed. It is recommended that for the NGOs to gain value for money and adequately meet their mandates, they ought to ensure seamless and efficient flow of their procurement processes, and this can be effectively achieved through integration of electronic procurement. This will enhance traceability of procurement processes, timely execution of procurement functions as well as promote accountability and transparency.

Key Words: Electronic Procurement Practices, Electronic Ordering, Electronic Payments, Healthcare, NGOs

Background of the Study

In the world of challenging and competitive business ecosystem, the use of technological tools and services to drive innovation is no longer a minor matter; Rather, a key and necessary for public and private organizations adoption. It is relevant in today's world for businesses to provide clients with a cost-effective overall solution and good clients satisfaction using innovation and new technology. The advent of Information and Communication Technology (ICT), industries were compelled in switching business operations from the old-style to the philosophy of electronic business, electronic procurement and electronic supply chain to ensure sustainability. The private and public sectors have used Information Technology (IT) over the past decade to enhance and improve purchasing and some business processes (Koorn & Mueller, 2019).

In automating the process of supply chain, electronic procurement offers diverse advantages that almost all competitive company have to consider to ensure efficiency. In the 2000s, the Internet has substantially made feasible and supported a key resource for the automation of the purchase process, with the added benefit of improving the processing capabilities of audiovisual aids. Supply chain (SC) practices by themselves will not deliver efficiency; efficiency can only be obtained by combining various supply chain practices. To imply, Dawe (2018) stated that in order to improve the supply chain's performance, extensive efforts should be made to improve all supply chain functions in an organisation, and by focusing on supply chain practices, moving away from a functional and independent system and toward a more enhanced and integrative system that is passed over to system. The result is that the effectiveness of every supply chain practice should be evaluated in terms of how the process impacts the efficient integration of the whole supply chain (Byiringiro & Nnamdi, 2022). Supply chain integration success may be accomplished by combining various supply chain methods and centralized organisational structures in a well-defined manner.

Electronic procurement is an important way of doing business to lower purchase prices and increase process efficiency. Collection management, e-tendering, e-auction, e-information, supplier management, order integration, catalog management, order status, dispatch notification, electronic bill, electronic payment of goods and management of contract constitute e-procurement value chain (Kilay, Simamora, & Putra, 2022). Efficient performance of the supply chain is vital to companies to stay in business. This efficiency maybe achieved through ensuring that all actions along the supply chain system, from one end customer to supplier, are properly synchronized and coordinated. When functions like procurement are lagged behind, an important determinant of the company's relationship with suppliers becomes very important. Global purchasing has shifted its focus away from day-to-day sourcing and toward long-term, value-added purchasing and supply chain initiatives. The COVID-19 pandemic crisis is the biggest threat to the global economy since the economic crisis in 2009, electronic procurement has obtained much attention especially with the emergence of new technology. Simultaneously, it is responding to the problems and opportunities of electronic procurement by using the Internet to trade for products and services.

Many improvements have been made on the electronic information side: collecting and distributing purchasing information via internet technology from and to internal and external parties, and using internet powered devices to purchase products and services from a variety of known and unknown vendors has improved sales processes. E-Market-Sites: Creates value chains by extending web-based ERP. According to Jessop (2016), buying communities may link to suppliers' supply chains and buyers' financial systems to acquire commodities and services from preferred vendors, add shopping carts, make enquiries and receive permissions, accept orders, and process electronic invoicing. E-procurement solutions have arisen during the previous two decades. Despite the technology industry's exponential expansion, we estimate that organisations will only employ around 25% of their solution capacity, partially

owing to a lack of technical expertise or financial resources, but also because solutions are likely misaligned with expanding purchasing demands. Regardless of the listed limitations, electronic procurement has apparent prospective benefits that may be used to make a business case for financial support, increasing usage, or new alternatives investment

Statement of the Problem

Non-governmental organizations are integral in promoting access to social services among the vulnerable communities. The organizations significantly augment government's efforts to enhance the welfare of the society through social-based programmes. However, despite their immense contribution to the society, the NGOs face high collapse rate, especially when the donors withdraw their financial aid. A report by the NGOs Coordination Board (2019) revealed that over 13% of NGOs in Kenya fail in their second year of operation, while 19% fail once the donors withdraw their funding. Moreover, the Auditor General's report (2021) noted that over 40% of the NGOs hardly account for the donated funds, a matter that puts on the doubt the effectiveness of their leadership. According to the NGOs Coordination Board (2021), out of the 11,807 registered NGOs, only 9,255 are active, and over 60% of the active ones do not adequately meet the requirements of enhancing their operations. The board further reported that more than 71% of NGOs do not have alternative source of income, and mainly rely on donors. This is a matter of concern to the sustainability of these entities, especially when the donors withdraw their support. According to Ndei and Mutuku (2021), most NGOs in Kenya that had their funding cut-short by the donors had recorded inappropriate procurement processes, which led to questionable audit trails. This raises a question on the appropriateness, effectiveness, efficiency and transparency of procurement processes embraced by the NGOs.

Empirical evidence shows that embrace of electronic procurement practices is fundamental in influencing organizational performance. Masudin *et al.* (2021) assessed the effect of electronic procurement on performance of manufacturing entities in Indonesia and established that e-sourcing and e-payments had a strong influence on organizational performance. Kheng and AlHawandeh (2018) investigated the adoption of e-procurement in Singapore and presented stumbling blocks to this initiative from the point of view of Singaporean firms. Mafini *et al.* (2020) while addressing the relationship between e-procurement and performance of SMEs in South Africa revealed that e-ordering and e-informing had a strong impact on SMEs' performance. In Kenya, Chepng'etich, Waiganjo, and Ismail (2020) addressed the role of electronic procurement on performance of county governments in Kenya, and established that strategic electronic procurement significantly influenced organizational performance. While these studies show the clear relationship between e-procurement and organizational performance, they have presented conceptual gaps based on how they have conceptualized e-procurement, contextual gaps based on where they have been carried out and methodological gaps based on the methods they embraced. Moreover, Brass (2022) indicates that the effectiveness of NGOs would strongly be determined by the procurement processes, but recommends the essence of a study to examine how embrace of e-procurement could influence performance of the NGOs. To fill these gaps, therefore, this study sought to examine the relationship between electronic procurement practices and performance of healthcare non-governmental organizations in Nairobi City County, Kenya.

General Objective

The general objective of this study was to assess the effect of electronic procurement practices on performance of healthcare Non-Governmental Organizations (NGOs) in Nairobi City County, Kenya.

Specific Objectives

This study was guided by the following specific objectives;

1. To establish the effect of electronic ordering on performance of healthcare Non-Governmental Organizations in Nairobi city county, Kenya.
2. To assess the effect of electronic payment on performance of healthcare Non-Governmental Organizations in Nairobi city county, Kenya.

LITERATURE REVIEW

Theoretical Literature

Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh, *et al* (2003), developed the Unified Theory of Acceptance and Use of Technology (UTAUT) Theory by putting together eight technology acceptance models which include Theory of Planned Behavior, Socio-Cognitive Theory Diffusion of Innovations, Theory of Reasoned Action, Motivation Model, Technology Acceptance Model and Model of Personal Computer (PC). This theory tries to explain user objectives in terms of technology and their behavior. Baihaqi (2016) adopted this theory in a research he carried out on adoption of information and communication technology (ICT) in value chain firms in Kenya. Chen *et al.* (2016) also adopted this theory in a study on Influence of information sharing system on employee retention in multinational corporations in Nairobi County.

UTAUT identifies four key constructs which include expected effort, facilitating conditions, social influence and expected performance that are key factor of technology acceptance and use behavior. Gender, age, experience, and voluntariness constructs are postulated to enhance the relationship between use and user acceptance (Kamotho, 2014). Study by Oteki (2019) show UTAUT as a useful instrument in elucidation of use and innovations acceptance among various cultures, programing it as a strong theory in comparison to other technology acceptance theories. According to Ingavo and Moronge (2019) the theory provides managers with a framework to measure the likelihoods of success as a result use of technology and to understand drivers of approval of technology thus design mediations against possible resistance.

UTAUT theory is powerful and flexible to enable studying the adoption of any new technology, in addition, to being viable after extension as needed robust and good in prediction for usage behaviors and applicable to evaluate an individual's perception of technology usage (Byringiro & Nnamdi, 2022). This study will use Unified Theory of Acceptance and Use of Technology (UTAUT) to assess the effect of e-ordering on performance of NGOs in Nairobi city county, Kenya.

Conceptual Framework

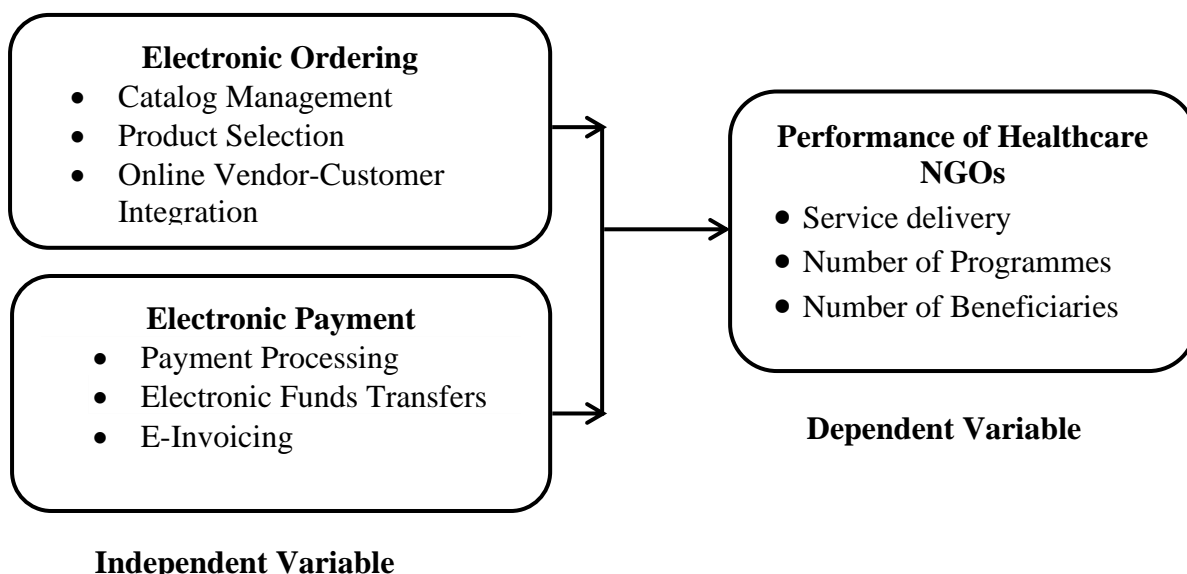


Figure 1: Conceptual Framework

Electronic Ordering

E-ordering, also known as electronic ordering, is a process that allows customers to browse, select, and purchase products or services online through electronic means. It encompasses various stages such as catalog management, product selection, and payment processing. Catalog Management involves creating and maintaining an online catalog of products or services offered by a business. Catalog management includes tasks such as product categorization, uploading product images and descriptions, updating prices and availability, and managing product variants (e.g., sizes, colors). A well-organized and visually appealing catalog enhances the user experience and facilitates easy product discovery (Gathima & Njoroge, 2018).

Once the catalog is set up, customers can browse through the available products and select the ones they want to purchase. User-friendly interfaces with intuitive navigation help customers easily find products of interest (Kioko & Mwangangi, 2017). Features like search filters, sorting options, and product recommendations based on past purchases or browsing history can further streamline the product selection process and improve customer satisfaction. After selecting the desired products, customers proceed to the payment stage. Payment processing involves securely collecting payment information from customers and authorizing transactions (Barasa, Namusonge & Okwaro, 2017). This typically includes various payment methods such as credit/debit cards, digital wallets, bank transfers, and alternative payment solutions like PayPal or Apple Pay. Security measures such as encryption and compliance with payment card industry data security standards (PCI DSS) are essential to protect customers' sensitive information and ensure secure transactions (Kioko & Mwangangi, 2017).

Electronic Payment

The process of buying and selling involves the exchange of goods and services, facilitated by various payment methods. Among these, e-payment systems stand out as crucial mechanisms utilized by individuals and organizations for secure and convenient online transactions, simultaneously driving technological advancements in the global economy (Fenuga & Kolade, 2020). These systems have become pivotal in the success of e-commerce, offering efficiency, fraud reduction, and convenience in payment processing worldwide (Mohagheghnia et al., 2014).

According to Gallardo et al. (2015), e-payment systems encompass a variety of electronic payment methods, including mobile payments, e-money transfers, and internet banking, provided by financial institutions to their clientele. Consequently, the adoption of e-payment technologies is steadily rising across both commercial and public sectors (Dhevika & Latasri, 2019). However, despite the numerous advantages associated with e-payment systems, concerns persist regarding users' ICT proficiency and apprehensions about security breaches, posing challenges for individuals, organizations, and industry experts in the realm of information systems.

The proliferation of e-payment systems over recent decades can be attributed to the widespread adoption of internet-based banking and shopping, facilitated by advancements in technology (Huang & Chen, 2021). This rapid growth has led to a decline in traditional payment methods such as checks and cash, replaced by more secure and transparent electronic transactions. Notably, countries like Kenya and other East African nations are poised for further growth in online payments, as governments have refrained from imposing restrictive regulations on internet-based transactions (Antwi, Hamza & Bavoh, 2015). Presently, Kenyan businesses accepting online payments must adhere only to the guidelines established by credit card companies.

Empirical Review

Electronic Ordering and Organizational Performance

Mnasi, Arthur and Mwaseba (2023) investigated on the influence of e-ordering system on LGAS' public procurement performance: a case of Kasulu district council, Kigoma Tanzania. The study used positivist research paradigm. The target population was Kasulu District Council. The study found that the e-Ordering System has a statistically significant and positive impact on public procurement performance in local government authorities. The study concluded that e-Ordering System is statistically significant relating to public procurement performance positively.

Rumanus *et al.* (2023) conducted a study on assessing e-business and organizational performance in Nigeria today: evidence from jumia ltd, Lagos. The research design adopted for the study was descriptive research design. The target population of the study was 158 employees of the firm under study. The study found that e-business has positive effect on performance of Juima Ltd, Lagos. The study concluded that e-business if properly accorded a maximum attention by Jumia Ltd Lagos would improve the organization marketing and objectives.

Opong (2020) researched on electronic ordering and organizational performance among commercial state corporations. The study adopted a descriptive research design. The target population was all the commercial state corporations in Ghana. The study found that commercial state corporations in Ghana have adopted e-procurement. The study concluded that e-procurement has led to cost reduction, improved transparency and accountability.

Chepkwony and Chepkwony (2017) investigated on the e-ordering and e-informing on supply chain performance in Kenyan state corporations in Nairobi County. The study adopted Explanatory research design. The target population was 244 employees who were directly involved in the procurement practices in the Kenyan State Corporations. The study found that e-ordering and e-informing has a positive and significant effect on supply chain performance. The study concluded that e-ordering and e-informing which are elements of e-procurement dimensions increases supply chain performance.

Munyao and Muronge (2018) conducted a study on the influence of e-ordering practices on the performance of procurement in public institutions in Kenya. The study adopted a census research design. The target population comprised the entire public organizations in Kenya. The study found e-tendering, e-ordering positively and significantly affects procurement performance among public organization in Kenya and e-payment positively but not significantly affect procurement performance among public institutions in Kenya. The study concluded that adoption of e-sourcing, e-ordering leads to a positive and significant improvement in procurement performance among public organizations and e-payment leads to a positive but not significant improvement in procurement performance among public institutions.

Electronic Payment and Organizational Performance

A study by Ahmad and Zhang (2020) on the effect of electronic payments examined the role played by electronic bank transfers and internet-based transactions on organizational performance. Through a crosse-sectional research approach, the authors utilized a questionnaire to collect data from 219 respondents drawn from service-industry in Indonesia. The findings revealed that electronic payments had a strong and significant impact on organizational performance. The results further revealed that electronic bank transfers and internet-based transactions were seamless and more efficient, thus leading to satisfaction of suppliers and continued organizational performance. The findings compare with those by Alshurideh *et al.* (2021) who established that, electronic payments were instrumental in

streamlining payments processes in the procurement process thus steering organizational performance.

Jatto, Nwankwo, and Olaiye (2023) did a study on the role played by electronic payments in electronic procurement in enhancing firm performance. Their study was carried out in Nigeria and focused on public entities in the country. The authors utilized a descriptive research approach and targeted 191 respondents who were surveyed using a questionnaire. The findings revealed that electronic payments were integral in enhancing firm performance as it provided a more traceable payment record, thus closing any loopholes for diversion of public funds. Further, Jatto et al. (2023) indicated that through electronic payments, public entities were able to smoothly make payments without the usual delays and long-waiting periods, thus promoting their relationship with the suppliers. This compares with the findings by Ravikumar (2019) who established that electronic payment was crucial in building a stronger relationship between the supplier and the purchasing entity as it promoted more seamless and faster processing of payments.

Khamis, Mwinyi, Salim, and Hafidh (2022) researched on e-payments systems and their impact on performance of public entities in Zanzibar. Through a correlational design, the authors surveyed 119 respondents drawn from public entities in Zanzibar. The findings revealed that electronic payments were integral in reducing fraud and ensuring efficient payment processes thus enhancing organizational performance. The authors indicated that through continued embrace of electronic payments among the public entities, there was more traceable payment proceedings, thus keeping the suppliers aware of their impending payments while ensuring transparent transactions. According to Khamis *et al.* (2022), electronic payments is also instrumental in enhancing user satisfaction as it promotes faster delivery of services whereby contractors can carry out the contracts on timely manner as a result of efficient and timely payments.

Kioko and Mwangangi (2018) conducted a study on the influence of electronic procurement on performance of parastatals in Kenya. The study focused on among other e-procurement practices, electronic payment and examined how e-payments influenced organizational performance. This research study adopted a descriptive research design approach. The target population was 187 heads of procurement in all parastatals. The study found that e-payments had a positive relationship with performance in parastatals. The study concluded that performance of parastatals can be reduce wastage of funds and strengthen their performance through uphold electronic payments as one of the aspects of electronic procurement.

A study by Ndei and Mutuku (2021) sought to evaluate the role played by electronic procurement through e-payments on organization performance in Kenya's NGOs sector. The study used descriptive research design and explanatory design. The target population comprised 189 respondents drawn from the finance, payment and information technology department. The study found electronic payment as one of the e-procurement practices had a significant impact on organizational performance. The authors indicated that through e-payments, state agencies were more accountable as the payment transfers were traceable thus reducing wastage. Moreover, Ndei and Mutuku (2021) indicated that e-payments enhanced effectiveness and efficiency in payment processes, thus positively enhancing performance of the NGOs.

RESEARCH METHODOLOGY

The study employed the descriptive research design. Van Manen (2016) states that a descriptive research design as a data collection method from which a sample of individuals being investigated using research instruments by use of data collection instrument which has both the closed-ended and open-ended questions, interviews and observations. The study targeted Non-Governmental Organizations (NGOs) in Nairobi County, and specifically the NGOs dealing with healthcare services. These are NGOs registered to offer healthcare services or perform

healthcare-related support-services such as construction of health centres, equipping health centres, supply of drugs and offering healthcare services such as medical camps, healthcare campaigns and other related services (National Council of NGOs, 2019). According to NGOs Coordination Board (2022) there are 319 active healthcare NGOs in Nairobi County. The NGOs are spread across the seventeen (17) sub-counties in Nairobi County. The heads of procurement/supply chain from these NGOs were targeted in this study. These are the main decision makers in the organizations as far as procurement functions are concerned and they have better understanding of any electronic procurement practices embraced in their respective organizations.

The simplified sample size formula by Yamane (1967) was used to arrive at a sample size of 177 respondents. A simple random sampling was used to pick the respondents whereby the NGOs were randomly selected. The study collected primary data using questionnaires. Piloting aided to administer the paper-and-pen questionnaire and to gauge the time limit for the completion of the questionnaire. According to Lancaster, Dodd, and Williamson (2019), the sample size for high precision pilot studies should be between 1% and 10%. The study used 10% of the sample size for the pilot study. This meant that 18 respondents (10% of 177) were surveyed for the pilot study.

The Statistical Package for Social Sciences (SPSS) version 27 software was used to analyze the data. The research used descriptive analysis. Quantitative data were analyzed using descriptive statistics such as frequency, percentages, and means and presented using graphs, pie charts, and frequency distribution tables to depict the data's sets of categories. This study conducted inferential statistics through correlation analysis and regression analysis to establish the statistical relationship between the variables.

RESEARCH FINDINGS AND DISCUSSIONS

A response rate as expounded by Isaac and Michael (2015), tells the success of a research instrument in obtaining a sizeable number of projected respondents successfully taking part in the study. In this study, 177 questionnaires were issued to the sampled respondents, out of which 149 were dully filled and handed-over back for analysis. This meant that the study had obtained a response rate of 84.2%. According to Kothari (2019), a response rate of between 60% and 70% is considered adequate to make conclusions and recommendations in a study. The study's response rate of 84.2% is therefore considered adequate for this study. Table 4.1 outlines the response rate.

Descriptive Analysis of the Findings

This sub-section covers the main findings of study based on the descriptive statistics. The main descriptive statistics covered in the findings included the mean, the standard deviation and the percentages. The findings have been captured systematically based on the study's main variables which were: electronic ordering, and electronic payments and performance of healthcare Non-Governmental Organizations in Nairobi County.

Electronic Ordering in Non-Governmental Organizations

The first objective of the study was to determine the effect of electronic ordering on the performance of healthcare Non-Governmental Organizations in Nairobi County. The respondents were asked to indicate their level of agreement or disagreement with key statements regarding electronic ordering. This was based on a 5-point Likert's scale of 1-5 where; 5= Strongly Agree; 4 = Agree; 3= Neutral; 2= Disagree and 1= Strongly Disagree. The findings are as shown in Table 1.

Table 1: Descriptive Results on Electronic Ordering

Statements	SD	D	N	A	SA	Mean	Std. Dev.
1. Our organization utilizes e-ordering systems for conducting online transactions.	44.3%	21.5%	8.3%	6.8%	19.1%	2.68	1.02
2. E-ordering has streamlined our purchasing processes, resulting in increased efficiency.	29.1%	27.7%	8.5%	11.3%	23.4%	2.72	1.49
3. Our organization has integrated digital ordering platforms where we can place orders directly from our suppliers through online means	34.9%	23.4%	17.0%	9.8%	14.9%	2.56	1.32
4. The organization has embraced online mechanisms to assess orders for quality before they are delivered	40.4%	12.8%	8.5%	14.9%	23.4%	2.45	1.38
5. Our organization encourages suppliers to have online platforms where products can be selected online when placing orders	26.3%	32.1%	18.1%	10.9%	12.6%	2.75	0.95
6. Stakeholders such as employees perceive e-ordering as a more efficient and user-friendly procurement method	35.8%	25.8%	12.1%	21.6%	4.7%	2.84	1.06
7. We have embraced online systems that integrate and connect suppliers with our customers to better meet their needs	24.1%	33.3%	11.4%	21.6%	9.6%	2.63	1.16
8. The current status of electronic ordering in our organization is adequate to contribute to a seamless procurement process	28.1%	36.3%	17.1%	8.6%	10.0%	2.63	1.16

From the findings, it was revealed that majority of the respondents disagreed that their respective organizations utilized e-ordering systems for conducting online transactions (SD = 44.3%; D= 21.5%; Mean = 2.68; Std. Dev. = 1.02); and that e-ordering had streamlined their respective organizations' purchasing processes, resulting in increased efficiency (SD = 29.1%; D = 27.7%; Mean = 2.72; Std. Dev. = 1.49). The respondents further disagreed that their respective organizations has integrated digital ordering platforms where they could place orders directly from the suppliers through online means (Mean = 2.56; Std. Dev. = 1.32). Further, it was established that 53.8% of the respondents disagreed that their respective organizations had embraced online mechanisms to assess orders for quality before they were delivered. The findings are an indication that most of the NGOs had not effectively upheld electronic ordering as an approach to ensuring easier acquisition of goods and services especially from the already evaluated suppliers. According to Rumanus *et al.* (2023), electronic ordering is integral in ensuring that organizations easily re-order from the already known suppliers thus saving the time of sourcing for suppliers. Without proper records on the suppliers, it makes it difficult to collaborate with the suppliers for continuous success of reordering processes (Barasa *et al.*, 2017).

The results further portrayed that majority of the respondents disagreed that their respective organizations encouraged suppliers to have online platforms where products can be selected online when placing orders (Mean = 2.75; Standard Deviation = 0.95). Moreover, 61.6% of the

respondents disagreed that stakeholders in their respective organizations such as employees perceived e-ordering as a more efficient and user-friendly procurement method (Mean = 2.84; Standard Deviation = 1.06). The respondents disagreed with the statement that their respective organizations had embraced online systems that integrated and connected suppliers with the customers to better meet their needs (Strongly Disagree = 24.1%; Disagree = 33.3%; Mean = 2.63; Standard Deviation = 1.16). Further, 64.4% of the respondents disagreed that the current status of electronic ordering in their respective organizations was adequate to contribute to a seamless procurement process. The findings are an indication that electronic ordering was still inadequately embraced in most of the surveyed NGOs, an issue that exposes the organizations into inefficiencies as far as effective reordering process and delivery of recurring orders is concerned. The findings concur with those by Mnasi *et al.* (2023) who established that inefficient reordering processes were orchestrated by failure to incorporate critical online and electronic systems that streamline reordering and ensure seamless deliver of recurring orders.

Electronic Payments in Healthcare Non-Governmental Organizations

The second objective of the study was to assess the effect of electronic payment on performance of healthcare Non-Governmental Organizations in Nairobi County. A Likert's scale was used whereby the respondents were asked to indicate the extent to which they agreed or disagree with specific statements on electronic payment. The scale ranged from 1 to 5 where 5= Strongly Agree; 4 = Agree; 3= Neutral; 2= Disagree and 1= Strongly Disagree. The findings are as summarized in Table 2.

Table 2: Descriptive Results on Electronic Payments

Statements	SD	D	N	A	SA	Mean	Std. Dev.
1. Our organization always transfers payments to suppliers through electronic means	42.8%	16.6%	11.3%	9.2%	20.1%	2.88	1.28
2. The suppliers are encouraged to make any payments through the available electronic payment mechanisms	23.4%	36.8%	14.3%	19.1%	6.4%	2.55	1.23
3. Our organization processes all payments electronically	23.4%	34.9%	12.8%	14.0%	14.9%	2.72	1.43
4. We have integrated electronic cheques as opposed to the physical ones to promote effectiveness in paying our suppliers	27.0%	34.9%	19.1%	10.4%	8.5%	2.18	1.26
5. Real Time Gross Settlement (RTGS) payment has been a preferred as one of acceptable payment mechanisms upheld in our organization	25.5%	36.4%	21.3%	6.2%	10.6%	2.90	1.38
6. The suppliers in our organizations are required to submit their invoices through online platforms	21.1%	31.6%	21.1%	21.1%	5.3%	2.57	1.21
7. The payment records are electronically captured and disseminated for easier traceability	33.8%	26.3%	9.1%	11.3%	19.5%	2.47	1.17

As the results portray, majority of the respondents disagreed with the statement that their respective organizations always transferred payments to suppliers through electronic means (Strongly Disagree = 42.8%; Disagree = 16.6%; Mean = 2.88; Std. Dev. = 1.28); and that the suppliers were encouraged to make any payments through the available electronic payment mechanisms (Strongly Disagree = 23.4%; Disagree = 36.8%; Mean = 2.55; Std. Dev. = 1.23). The respondents further disagreed that their respective organizations processed all payments electronically (Strongly Disagree = 23.4%; Disagree = 34.9%; Mean = 2.72; Std. Dev. = 1.43). The findings are an indication that electronic funds transfer was not effectively embraced in most of the surveyed NGOs. According to Alshurideh et al. (2021), electronic funds transfer is an effective way to migrate to electronic procurement as it minimize the paperwork thus providing more efficient solutions to payment of suppliers.

The results further revealed that most of the organizations surveyed had not effectively integrated electronic cheques as 61.9% of the respondents disagreed with the statement that their respective organizations had integrated e-cheques as opposed to the physical ones to promote effectiveness in paying the suppliers (Mean = 2.18; Std. Dev. = 1.26). Most of the respondents disagreed that Real Time Gross Settlement (RTGS) payment had been upheld as a payment mechanisms upheld in their respective organizations (Mean = 2.90; Std. Dev. = 1.38), and that there the suppliers were required to submit their invoices through online platforms (Strongly Disagree = 21.1%; Disagree = 31.6%; Mean = 2.57; Standard Deviation = 1.21). The respondents also disagreed that payment records were electronically captured and disseminated for easier traceability (Strongly Disagree = 33.8%; Disagree = 26.3%; Mean = 2.47; Standard Deviation = 1.17). The findings are an indication that most of the NGOs surveyed had not effectively embrace electronic payment aspects, despite this being an essential approach in streamlining procurement processes and strengthening accountability of better performance (Ahmad & Zhang, 2020).

Performance of Healthcare Non-Governmental Organizations

The study sought to examine the performance of healthcare Non-Governmental Organizations in Nairobi County, Kenya. The respondents were asked to indicate the extent to which key measures/objectives of performance had been met in their respective organizations. This is whereby a Likert's scale was used where the respondents were to indicate their levels of agreement or disagreement with key statements regarding performance of NGOs in the healthcare sector. The findings are as portrayed on Table 3.

As the findings portray, most of the respondents disagreed that their respective state organizations had seen increased quality of services rendered through seamless service delivery (Strongly Disagree = 26.6%; Disagree = 39.3%; Mean = 2.48; Standard Deviation = 1.26) and that the number organizations were in a position to cater for their bills as they become due (Strongly Disagree = 36.4%; Disagree = 29.1%; Mean = 2.31; Standard Deviation = 1.10). Moreover, the respondents disagreed that their respective organizations had few customer complaints on the quality of services offered (Strongly Disagree = 41.3%; Disagree = 25.5%; Mean = 2.72; Standard Deviation = 1.25). They further disagreed that the organizations met the set long-term and short-term objectives (Mean = 2.76; Std. Dev. = 1.54). According to Khamis *et al.* (2022), streamlining procurement processes especially for Non-Governmental organizations which are not for profit is an instrumental way in steering organizations' ability to meet their short-term and long-term goals as they get value for money and minimize wastage that would otherwise derail their performance.

The findings further revealed that most of the respondents disagreed that tasks within their respective organization were implemented within the set period of time (Mean = 2.57; Std. Dev. = 1.24). The respondents further disagreed that more customers had expressed their increased satisfaction with the services offered by their respective organizations (Strongly Disagree = 27.7%; Disagree = 34.0%; Mean = 2.40; Standard Deviation = 1.23); and that

organizations had recorded a significant increase in the number of programmes for the past three years (SD = 43.4%; D = 19.1%; Mean = 2.17; Std. Dev. = 1.26). The respondents disagreed that the number of beneficiaries with their organizations' programmes had significantly increased for the past three years as evidenced by a mean of 2.89 and standard deviation of 1.04. The findings imply that performance of most of the surveyed healthcare NGOs in Nairobi County as far as effective service delivery, increased scope of programmes and quality of services to the targeted beneficiaries was not adequately achieved.

Table 3: Descriptive Results on Performance of Non-Governmental Organizations

Statements	SD	D	N	A	SA	Mean	Std. Dev.
1. The service delivery in our organization has been more seamless than it was three years ago	26.6%	39.3%	10.7%	14.5%	8.9%	2.48	1.26
2. Our organization is in a position to cater for its bills as they become due	36.4%	29.1%	11.3%	12.6%	10.6%	2.31	1.10
3. There are few customer complaints on the quality of services offered	41.3%	25.5%	17.0%	11.9%	4.3%	2.72	1.25
4. Our organization always meets the set long-term and short-term objectives	29.8%	33.4%	6.4%	11.3%	19.1%	2.76	1.54
5. Tasks within our organization are implemented within the set period of time	34.0%	32.1%	6.2%	17.2%	10.5%	2.57	1.24
6. More customers have expressed their increased satisfaction with the services offered at our corporation	27.7%	34.0%	12.8%	21.3%	4.3%	2.40	1.23
7. Our organization has recorded a significant increase in the number of programmes for the past three years	43.4%	19.1%	13.8%	14.1%	9.6%	2.17	1.26
8. The number or beneficiaries with our organization's programmes has significantly increased for the past three years	19.7%	40.2%	4.7%	13.9%	21.5%	2.89	1.04

Correlation Analysis Results

Correlation analysis was carried out to establish the relationship between the aspects of electronic procurement (electronic ordering and electronic payment) and performance of healthcare Non-Governmental Organizations in Nairobi County, Kenya. The results are as shown in Table 4.

The results in further revealed that there was a positive and significant association between electronic ordering and performance of healthcare NGOs ($r = 0.833$, $p = 0.000$). This implies that electronic ordering could contribute significantly to the performance of healthcare Non-Governmental Organizations in Nairobi County. The correlation results further revealed that a Pearson correlation coefficient (r) of 0.799 was obtained for electronic payment at a significance level of $0.000 < 0.05$. This implies that there is a 79.9% correlation between electronic payments and performance of healthcare Non-Governmental Organizations in Nairobi County. It also implies that the correlation is significant at a P-value less than the standard p-value of 0.05. This correlation coefficient value was above 0.7 indicating a strong positive correlation as a factor of performance. A 2-tailed test at 95% level of confidence had

a probability value of less than 0.05 which implied that there was a significant correlation between electronic payments and performance of healthcare NGOs.

Table 4: Overall Correlation Analysis

		Performance of Healthcare NGOs	Electronic Ordering	Electronic Payments
Performance of Healthcare NGOs	Pearson Correlation	1		
	Sig. (2-tailed)			
Electronic Ordering	N	149		
	Pearson Correlation	.833**	1	
Electronic Payments	Sig. (2-tailed)	.000		
	N	149	149	
Electronic Payments	Pearson Correlation	.799**	.715**	1
	Sig. (2-tailed)	.000	.000	
	N	149	149	149

Regression Analysis Results

Regression analysis was carried out to evaluate the relationship between the independent and dependent variables. This enabled the testing of the research hypotheses of the study.

Electronic Ordering and Performance of Healthcare NGOs

Regression analysis was done to determine the influence of electronic ordering on performance of healthcare NGOs in Nairobi County, Kenya. The results are as shown in Table 5. As the results portray, the R-square for the model was 0.592, which implies that e-ordering is responsible for 59.2% variation in performance of healthcare Non-Governmental Organizations in Nairobi County. The ANOVA results on the other hand revealed that the model was statistically significant as evidenced by an F-statistic of 212.911 at a P-value of $0.000 < 0.05$.

The regression of coefficients revealed that electronic ordering had a positive and significant influence on performance of healthcare Non-Governmental Organizations in Nairobi County ($\beta = 0.843, p = 0.000 < 0.05$). This implies that a unit change in electronic ordering would lead to a significant change in performance by 0.843. With the p-value of $0.000 < 0.05$, it implied that electronic ordering significantly influenced performance of healthcare Non-Governmental Organizations in Nairobi County.

Table 5: Regression Model Results on Electronic Ordering

Model summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.769 ^a	.592	.589	.49300		
ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	51.748	1	51.748	212.911	.000 ^b
Residual	35.728	147	.243		
Total	87.477	148			
Regression Coefficients					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.187	.176		1.063	.290
Electronic Ordering	.843	.058	.769	14.591	.000

Electronic Payment and Performance of Healthcare NGOs

Regression analysis was carried out to determine the influence of electronic payments on performance of healthcare NGOs in Nairobi County, Kenya. The findings are as shown in Table 6. The model fitness results show that the model's R-square was 0.639. This implies that electronic payment is responsible for 63.9% change in performance of the healthcare Non-Governmental Organizations in Nairobi County. The ANOVA results on the other hand indicated that the model was statistically significant as supported by an F-statistic of 259.747 and the reported p value of $0.000 < 0.05$. The results implied that electronic payments is a good predictor of performance of healthcare Non-Governmental Organizations in Nairobi County.

Regression of coefficients results revealed that electronic payments and performance of healthcare NGOs in Nairobi County are positively and significantly related ($\beta = 0.783$, $p = 0.000$). This implies that a unit change in electronic payments would lead to a significant change in performance of NGOs by 0.783. The results concur with those by Ndei and Mutuku (2021) who established that electronic payment had a significant impact on organizational performance as it streamlined the payment processes.

Table 6: Regression Model Results on Electronic Payment

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.799 ^a	.639	.636	.46375		
ANOVA Test					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	55.862	1	55.862	259.747	.000 ^b
Residual	31.614	147	.215		
Total	87.477	148			
Regression Coefficients					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.421	.145		2.898	.004
Electronic payments	.783	.049	.799	16.117	.000

Conclusions of the Study

The study found that electronic ordering significantly influenced performance of healthcare NGOs in Nairobi County. With most of the organizations not effectively using e-ordering systems, there was little evidence that e-ordering had improved efficiency or streamlined purchasing processes. The lack of digital ordering platforms and online quality assessment mechanisms highlights a gap in modern procurement practices, which is concluded to be contributing to poor performance among the healthcare NGOs in Nairobi County, Kenya.

The study concluded that electronic payment had a significant influence on performance of healthcare NGOs in Nairobi County. The findings indicated that electronic payment systems are not effectively utilized among healthcare NGOs in Nairobi County. The limited adoption of electronic funds transfer highlights a reliance on traditional payment methods, which may hinder efficiency and transparency in financial transactions. This underutilization of electronic payment systems suggests a lack of integration with modern procurement processes, potentially leading to inefficiencies and difficulties in payment traceability.

Recommendations of the Study

To enhance the adoption of electronic ordering, it is recommended that the management of healthcare NGOs should invest in developing digital infrastructure and training staff on the benefits and use of e-ordering systems. Encouraging suppliers to establish online platforms can also facilitate a smoother ordering process, saving time and ensuring better supplier collaboration.

The top leadership and procurement managers in healthcare NGOs ought to focus on streamlining the payment processes to ensure accountability and transparency. This can be achieved through implementation of electronic payment systems, whereby the NGOs prioritize the integration of digital payment methods, including electronic funds transfers, online-payment processing and electronic invoicing. By facilitating the transition to electronic payments, the NGOs can achieve efficiency, transparency, and traceability of their payment processes for better performance.

Recommendation of Areas for Further Studies

The current study focused on electronic procurement and its role in performance of healthcare NGOs in Nairobi County. It is recommended that a similar study focuses on other categories of NGOs to establish whether they face similar problems with healthcare NGOs as far as e-procurement is concerned.

The study focused on electronic procurement as a major aspect determining performance of NGOs. It is recommended that a similar study focuses on others aspects affecting performance of NGOs apart from the embrace of electronic procurement.

The study focused on NGOs in Nairobi County. It is recommended that a different studies focuses on other organizations in varied sectors that also face an issue with procurement process to establish how e-procurement can be utilized to enhance their performance.

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