

Electronic Procurement and Performance of Non-Governmental Organizations in Kenya. Empirical Evidence from Pathfinder International, Kenya

Florence Muthoni Ndei*, Morrisson Mutuku

Department of Management Science, Kenyatta University, Nairobi, Kenya

*Corresponding author: flossymuthoni@gmail.com

Received April 20, 2021; Revised May 25, 2021; Accepted June 01, 2021

Abstract This study explored how electronic procurement and performance of organizations is related. Electronic Procurement is very vital in achievement of organizations objectives. Electronic procurement involves more than online transactions. E-procurement delivers a very manageable and orderly method to provide a clear path in communicating with vendors during transactions. Despite their crucial role in improving people's lives and alleviating poverty, most non-governmental organizations have been recording poor performance. The general objective of the study was to establish the relationship of electronic procurement and performance of organizations in non-governmental organizations in Kenya. The specific objectives for the study were to establish how e-sourcing, e-ordering, e-invoicing and e-payment relates to performance of an organization. This study was guided by four theories namely, Disruptive Innovation Theory, Diffusion of Innovation Theory, Technology Acceptance Model Theory and Theory of Planned Behavior. The study adopted descriptive research design. The target population for the study was 135 participants. Census survey was employed whereby the entire population of 135 procurement staff were required to participate. Both open ended and close ended questionnaires were used to collect primary data. The study collected data through drop and pick method. Validity of the questionnaire were tested using content validity whereas reliability was tested using Cronbach's Alpha. Quantitative data was analyzed using both descriptive and inferential statistics using SPSS Version 24 while qualitative data was analyzed using content analysis. Descriptive statistics was presented in frequency distributions tables and percentages. Inferential statistics such as correlation and regression were applied to assess the relationship between the independent and dependent variables. All ethical considerations were observed especially confidentiality, anonymity, consent and avoidance of biasness. The study revealed that there was a strong significant correlation between e-sourcing and performance, a medium significant correlation between e-ordering and performance, a strong significant correlation between e-invoicing and performance and a strong significant correlation between e-payment and performance. The study concluded that electronic procurement and performance of organizations was indeed related and it was recommended that all procurement systems be made mandatory and that the procurement teams be well trained on all systems used to ensure efficiency is achieved through use of e-procurement. The researcher suggested that further studies be conducted.

Keywords: e-procurement, e-sourcing, e-ordering, e-invoicing, e-payment, performance

Cite This Article: Florence Muthoni Ndei, and Morrisson Mutuku, "Electronic Procurement and Performance of Non-Governmental Organizations in Kenya. Empirical Evidence from Pathfinder International, Kenya." *Journal of Business and Management Sciences*, vol. 9, no. 2 (2021): 71-80. doi: 10.12691/jbms-9-2-3.

1. Introduction

NGOs are private organizations whose intention is not to make profit for all parties and stakeholders [1]. Research has found out that performance in NGOs helps in providing the basis for the organization to effectively and efficiently assess how well the organization is progressing towards its planned goals, identification of strengths and weaknesses and how to help the organization decide on its future initiatives together with the planned goals [2]. NGOs are important because they

perform a huge function in expansion of nations at local, global and international level. NGOs provide food, education, medication, employment among others. They are organizations which are created by people so that they can help other people [3].

In US, Bureau of Democracy, Human Rights and Labor has been found to help and sustain the establishment of NGOs. US has given NGOs the freedom to hire freely, given power and permission to collaborate with NGOs throughout the world. This have improved the level of efficiency and effectiveness of NGOs [4]. In Africa, NGOs are of great importance because they provide health care and education. NGOs have become key players in

responding to emergency related cases which mostly involve poverty and correlated suffering. In SA there have been more than 100,000 registered NGOs. Performance and existence of NGOs in Africa has been found to be of great purpose because they fight poverty, improve lives and accelerate the level & quality of education [5].

Locally, NGOs coordinating board report (2016) pointed out that up to 90% of NGOs fully depend and operate on donor funds. Performance of NGOs in Kenya has gone down due to uncertainties and decline of donor's extension. This has threatened staff retention since it proves difficult to retain staff when there is no funding [6]. Effectiveness and efficiency in organizations has been discovered to improve performance of NGOs [7]. E-procurement accelerates the procurement process of an organization when the right IT tools are used. E-procurement helps save a lot of money since it is an effective method of transacting and increasing workflow in the long run [8]. Organizations experiment procurement challenges. These include lack of full implementation of e-procurement processes, failure to maintain high ethical standards in the procurement process, bureaucracy, biasness, lack of transparency, delays in the processes, risk mitigation, poor criteria in recruiting, retaining and training staff and managing stakeholders [9].

Organizational performance in NGOs has been identified to be the central and essential characteristic that must always be absorbed in detail. It is the recurrent procedure that is usually attended by organizations so as to be able to guarantee that goals are being achieved and that the organizations are still running and succeeding [10]. Performance of Pathfinder International was measured through operations efficiency, staff retention and employee satisfaction. The current study intended to measure performance in non-financial terms since NGOs are not for profit organizations and they do not generate cash activities. Performance at Pathfinder has been affected by the workload that the stakeholders deal with. This is due to the high number of patients. It has therefore become very difficult to fully provide the services needed. Studies have discussed several indicators that relate to organizational performance. These indicators include operational efficiency, staff retention and employee satisfaction. These three indicators were identified and studied on by the researcher of this study.

[11] viewed performance of NGOs in terms of operations efficiency because this is the primary goal. Organizations measure operational efficiency depending on how well they achieve their mission, purposes and goals through improving the lives of a targeted group and measure depending on how well they deploy their resources through use of minimal resources to achieve the utmost goal [12]. Importance of performance in NGOs involves objectives that include setting of goals, preparation, acknowledgement, training, appreciating and accepting efforts [13]. Productivity and achievement of goals has been pointed out as the key measures of organizational performance. Productivity is measured by calculating how much benefits the employees bring to the organization when there is satisfaction. Achievement of goals has been measured according to how much accomplishment and success an organization has experienced in terms of goal fulfilment, this is related to level of staff retention [14].

E-procurement has been recognized to be one of the best procurement practices. It is the use of technologies and systems through online platform to conduct the procurement process [15]. E-procurement is using IT to manage the procurement processes at the whole organization with the major aim being to improve procedure of procurement [16]. Pathfinder has fully implemented e-procurement to enhance effective procurement for all is needed to achieve operations efficiency. Through using e-sourcing, e-ordering, e-invoicing and e-payment, Pathfinder has managed to run its procurement activities efficiently by saving time, money, reducing errors, enhancing security, improving supplier relationship management and customer management, increasing convenience and credibility. This awareness was brought by the researcher of this study.

A perfectly organized out-sourcing procedure should be able to rank first company's requirement, know it's market, choose the most efficient vendor, negotiate for the overall value, establish the best relationship with client and supplier, come up with strategies that cut costs and improve extended performance of the procurement activities and undertakings so as to achieve efficiency and improve overall organizational performance [17]. One of the greatest benefits of e-sourcing is efficiency and effectiveness which leads to use of minimal resources and achievement of the targeted objectives which in turn improves organizational performance [18]. E-sourcing creates supplier and customer relationship. E-ordering encourages transparency in the procurement process. Through the ordering systems, customers get the ability to acquire order details in real time for all documents done in the past and for documents currently in process [19]. E-ordering operates with online transfers of documents throughout the e-procurement process which usually begins at issuance of purchase orders from buyers ending when they receive their ordered goods from the suppliers. E-ordering helps in enhancing transparency, error reduction, saving costs and time, improving efficiency and effectiveness, improving order and customer management and enhancing productivity as compared to written orders [20].

It has been ascertained that e-procurement concept has been felt in all sectors of the economic development [21]. Doing away with the manual systems and by going paperless has enhanced productivity, improved order management process and has greatly improved the organizations performance by improving its effectiveness and efficiency [22]. This has led to reduced costs and improved customer - supplier relationship [23].

E-invoicing helps the organization to run efficiently and hence improves performance [24]. It is the spreading, receipting and processing of digital transactional documents between vendors and purchasers. E-invoicing leads to effective archiving, leading to easier retrieval of documents, shortening of the payment cycles hence saving time, improvement on account reconciliation, enhancement of compliance due to security, error free transactions, wastage reduction [25]. E-invoicing is cheaper, faster and is more environmentally friendly than use of manual systems and digital invoicing. E-invoicing leads to efficiency since it is a unique and reliable means of storing and retrieving organizations documents [26].

The system comes with progressive security system. This way the customers details are safe, trust is built and enhanced. It leads to easier way of searching for a specific invoice. [27] revealed that e-invoicing leads to a lot of time saving. This is so because through e-invoicing many processes which include entering data manually, checking for accuracy and interchanging software are cut out of the invoicing process.

Electronic payment is a type of monetary assurance from the purchaser to the vendor that is provided using electronic communication systems. These include mobile payment, internet payments, e-cards, PC Banking and e-cash [21]. The researcher studied the credibility, security and convenience involved in e-payment. Studies has found that e-payment enables organizational performance to be more ideal because services and works are performed more conveniently, faster, safely, accurately, transparently and in a credible manner impacting efficiency [28]. E-payment leads to credible, convenient and secure transactions due to risk reduction and increased security in the whole process. [29] revealed that use of online payments was a more credible means of transaction as compared to transacting with cash on hand. [30] identified e-payment to be a very convenient means of payment as compared to the traditional payment methods such as cash and cheque. This is because payment is made instantly leading to saving time.

[31] found that both the customers and sellers throughout the world consider use of reliable merchants than sending and accepting cash directly from the site. This acts as a safety and security measure. It offers both stakeholders protection from any kind of fraud. E-payment system has grown massively because of broad expansion of the online banking and buying. Most online payment and payment preparation systems have been established in order to speed up, improve and provide safer online operations while also aiming at minimizing the proportion of cash and manual operations [32].

NGOs have been experiencing procurement challenges which affect their performance. This is because of lack of full implementation of e-procurement processes, failure to maintain high ethical standards in the procurement process, bureaucracy, nepotism biasness, lack of transparency, delays in the processes, risk mitigation, poor criteria in recruiting, retaining and training staff, managing stakeholders [9]. Procurement in NGOs in Kenya has experienced numerous difficulties. These include corruption, nepotism and mismanagement which hinder improved sustained performance and service distribution. E-procurement is one of the reforms that can provide management of expenses.

NGOs that has fully embraced e-procurement systems has been able to excel in their activities in terms of accountability and transparency [33]. 66.9% of firms in Kenya agreed that there was adequate technology which included e-ordering, e-invoicing and e-payment which fully supported performance by boosting procurement procedures in the organization. 33.1% did not agree and mentioned they thought use of technology was not being used to the maximum. This was related to unreliable internet and systems failure [34].

Traditional procurement processes used in the past were time consuming, faced many errors and involved huge

paperwork leading to wastage. E-procurement has proved to improve the way systems work by making work more efficient. Use of e-procurement saves time, improves efficiency, accuracy, productivity and flexibility. E-procurement simplifies the way things are done and encourages transparency in integration of supplier relationship in the whole procurement process and hence improves the organizational performance [35]. However, there has been no study carried out on performance of NGOs in relation to e-procurement in the Coastal Region despite there being many recognized NGOs in Coast Kenya. The researcher planned to fill this gap by establishing the relationship of electronic procurement and performance of NGOs a case of Pathfinder International in the Coast Region.

2. Literature Review

2.1. Theoretical Review

This study was anchored on Diffusion of Innovation Theory (DIT) and Technology Acceptance Model (TAM). **Diffusion of Innovation Theory** is used to explain how, why and at what rate a concept advances its drive and spreads over a specific community improving organizational performance DIT was initiated by Rogers in the 1960's. DIT has broadly shown how people have embraced and adopted to e-ordering and e-invoicing by dropping the manual systems [36]. This model has assisted the organizations to better understand how purchasers implement and engage with new technologies over time and it also tends to explain how an idea can pass through several stages of adoption by different players [22].

The move from rural to urban population within a society, the extent of industrialization, level of development, education cultural limitation has greatly affected this theory. Due to this, the adoption of a behavior becomes hard because some programs in the society do not accept them [37]. However, this theory shows how innovation as a process is aimed to improve economic development [38]. It seems to gauge an invention through use of five characteristics. These are innovation attributes, relative advantage, compatibility, complexity, observability and trialability [39].

Technology Acceptance Model theory was developed by [40]. Three features are used i.e perceived usefulness (PU), perceived ease of use (PEOU) and attitude towards use. When people using a product observe that the technology they are using is working and that it is friendly to use, these people become interested in using it. PU and PEOU have significant influence on the attitude of the user which could be favorable or unfavorable towards the system depending on the perception of the user [41].

After a user's perception it is important for awareness to be created. PU being the first belief, explains persons intention to use technology and degree by which an individual acknowledges that a specific system will improve performance and the second belief of PEOU explains a person's belief that usage of a specific system would not cost anything or will be effortless [42]. PU and PEOU has significant impact on adoption and use of

online digital platforms because the two are based on user's perception to their belief about the system. PU and PEOU greatly affected users' attitude towards the use of a system [7].

This model did not put into consideration some aspects like level of education or age which are very key aspects in behavior change since they influence how acceptance is achieved and also influence the willingness of a person to use technology. This is because it is next to impossible to measure behavior since unseen character personalities repeatedly motivate behavior [43]. Popularity of TAM in terms of thoughtful connection between human and technology through PU and PEOU improves performance. TAM has stood out in exploring and reviewing the issues affecting user's acceptance of modern technology. This has benefited organizations to improve on performance since it promotes the use and acceptance and gives individual difference, societal inspirations, belief, attitudes and situational influences as features which endorse an aim to use technology and encourage the ability to either accept or reject it. TAM predicts the eagerness and motivation to perform several skills by ensuring that organizations runs effectively and efficiently [44].

2.2. Emperical Literature Review

The function of strategic e-sourcing practices on supply chain performance in state corporations in Kenya was studied by two researchers namely Noor & Hill in the year 2017 and it was concluded that optimization of e-sourcing had improved the use of technology. Use of internet-based systems proved to save cost, improve performance, leading to efficiency and effectiveness. The current study focused on an NGO hence this was a gap in the study. Strategic & Global Sourcing on Sourcing of Small Home Electronics from China was examined by [45] whose focus for the study was finding new strategies to improve the company's performance.

In the study qualitative method was used and it was concluded that the company had an effective sourcing strategy. The study recommended the company to evaluate and do further research to enable them to decide whether to stick to supplies from china or whether to find new emerging markets. However, the current study concentrated on NGOs and not Electronic Companies. Adoption and outcomes of a strategic e-sourcing system were assessed at Bravo Solution in Dubai, UAE by [46] and it was found out that efficiency and effectiveness in companies is achieved through the practice of e-sourcing and that it allows companies to work in collaboration in order to build, provide and gauge tracking measures of sourcing through secure online platforms. The study concluded that adoption of e-sourcing added great value to both the client and the supplier. However, the current study concentrated on NGOs and not on oil producing companies.

E-ordering and e-informing on supply chain performance in retail marketing outlets in Kenya was studied by [47] and it was found that e-ordering is of great importance in the process of supply chain. The study concluded that e-ordering increases supply chain performance and it recommended that e-ordering be implemented. This study was only conducted in retail

marketing outlets, but the current study was conducted amongst NGOs. A study to examine the impact of e-procurement practice in Indonesia government was conducted by [48] and the findings revealed that implementation of e-procurement was of a great importance and largely impacted on how e-marketplace contributed. The current study concentrated on NGOs hence being a gap.

A study to investigate organizational resistance to e-invoicing results from an empirical investigation among SMEs in Germany was carried out by [49] and found that resistance to use e-invoicing was due to lack of ICT knowledge. For organizations to achieve efficiency, effectiveness and transparency, implementation of digitalization of documents had to be put to effect. It concluded that the adoption to digitalization was still very low mostly on small organizations who resist to implement the use of e-invoicing because of lack of know-how. The study was only conducted amongst SMEs, but the current study was conducted amongst NGOs. A research was carried out to determine the effects of e-procurement adoption on procurement performance of KENGEN by [50] Findings found that e-invoicing improved organizations performance and recommended that mechanisms to be organized and implemented in order to handle all the cons that hamper the operation of e-procurement. The study was only conducted in the Electricity Generating company, but the current study was conducted amongst NGOs.

Effects of e-procurement practices on organizational performance in public hospitals in the county government of Uasin Gishu, Kenya was studied by [51]. The study adopted a descriptive survey and established that establishment of IT improved utilization of e-payment which has therefore upgraded utilization of supply chain management. The researchers therefore recommended more research be conducted. A study to determine the impact of e-procurement on the performance of public institutions in Rwanda was conducted by [38] where the findings showed that in African nations, the public sector is in the early stages of acquiring fame. This study established that on security in e-payment, ERP systems enhance security of management data which in turn improves procurement performance.

3. Research Methodology

This study employed descriptive research design. The population of interest were the regular staff and grantees staff of pathfinder. The researcher targeted 135 respondents, 95 who were regular staff and 40 grantees staff. The study adopted a non-probability sampling procedure and used census. Primary data was collected by means of open ended and close ended questionnaires. Drop and pick method was employed. The questionnaires comprised of six sections. Likert scale was used for the close ended questions. Validity of the questionnaire were tested using content validity and to test for face validity, the questionnaire was submitted to one research expert in KU whereas reliability was tested using Cronbach's Alpha. Quantitative data was analyzed using both descriptive and inferential statistics using SPSS Version 24 while

qualitative data was analyzed using content analysis. Descriptive statistics was presented in frequency distributions tables and percentages. Inferential statistics such as correlation and regression were applied to assess the relationship between the independent and dependent variables. The researcher randomly picked eight participants for piloting representing 6% of the sample size (135).

4. Findings and Discussions

The data collected was coded and entered to a computer for analysis using Statistical Package for Social Sciences (SPSS) Version 24 to enable generation of analysis. Data cleaning was also conducted. Quantitative data was analyzed through use of both descriptive and inferential statistics using SPSS Version 24 while qualitative data was analyzed through content analysis. Descriptive statistics was presented in frequency distributions, tables and percentages to interpret the perception that the respondent had raised. To assess how the independent(s) and dependent variables are related to each other, inferential statistics such as correlation and regression were applied. All the tests significance level was 95% confidence level.

Reliability of the questionnaire was tested to measure its internal consistency using Cronbach’s alpha. E-sourcing, E-ordering, E-invoicing, E-payment had alpha values of 0.891, 0.955, 0.925 and 0.928 respectively. NGO performance had an alpha value of 0.876 and the scale combination was 0.985 which is a sound and reliable measure. The outcomes are presented in Table 1.

Findings in Table 2 show that pathfinder has fully implemented e-procurement (M=1.72, SD=0.648), Pathfinder

provides full support to enhance e-procurement (M=1.77, SD=0.546), Pathfinder has fully supported Grantees who are community based (M=1.82, SD= 0.682), systems used at pathfinder are of high quality (M=1.91, SD=0.887) and that pathfinder is an NGO who is an umbrella to many NGOs (M=1.96, SD=0.740). This implies that e-procurement is well embraced at Pathfinder. The findings agreed with [15] that e-procurement has been recognized to be one of the best procurement practices.

Findings in Table 3 show that effective use of e-sourcing improves performance of the organization (M=1.51, SD= 0.502), e-sourcing improves speed in negotiation which improves efficiency (M=1.77, SD= 0.703). The staff agreed that e-sourcing was adopted to reduce costs associated with outsourcing (M=1.91, SD= 0.544) and that they know how to effectively use Serenic System (M=1.91, SD= 0.768) and that pathfinder makes use e-sourcing to identify potential suppliers (M=1.92, SD= 0.723). This implies that electronic sourcing is related to organizations performance. The findings concur with [46] that efficiency and effectiveness in companies is achieved through the practice of e-sourcing and it improves performance.

Table 1. Reliability Statistics

Variables	Cronbach’s alpha	Items
NGO performance	0.876	5
E-sourcing	0.891	6
E-ordering	0.955	6
E-invoicing	0.925	6
E-payment	0.928	6
Scale Combination	0.985	29

Source: Field Data (2021).

Table 2. Level of agreement regarding e-procurement and organizational performance

Statements	SA		A		NS		D		SD		M	SD
	F	%	F	%	F	%	F	%	F	%		
Pathfinder has fully implemented e-procurement	40	38.8	52	50.5	11	10.7	0	0	0	0	1.72	.648
Pathfinder provides full support to enhance e-procurement	30	29.1	67	65.0	6	5.8	0	0	0	0	1.77	.546
Systems used at Pathfinder are of high quality	45	43.7	36	35.0	22	21.4	0	0	0	0	1.91	.887
Pathfinder is an umbrella to many NGOs	30	29.1	47	45.6	26	25.2	0	0	0	0	1.96	.740
Pathfinder has fully supported community-based Grantees	35	34.0	52	50.5	16	15.5	0	0	0	0	1.82	.682

Key: 1= Strongly agree. 2= Agree. 3= Not sure. 4 = Disagree and 5=strongly disagree. M=Mean, SD=Standard Deviation. Mean (1-1.80= strongly agree, 1.81-2.60= Agree, 2.61-3.40= Not Sure, 3.41-4.20= Disagree, 4.21-5.00= Strongly disagree)

N=103

Source: Field Data (2021).

Table 3. Evaluation of how e-sourcing relates to performance of Pathfinder International

Statements	SA		A		NS		D		SD		M	SD
	F	%	F	%	F	%	F	%	F	%		
Pathfinder uses e-sourcing to identify potential suppliers	25	24.3	67	65.0	5	4.9	6	5.8	0	0	1.92	.723
E-sourcing was adopted to reduce costs associated with outsourcing	20	19.4	72	69.9	11	10.7	0	0	0	0	1.91	.544
E-sourcing improves speed in negotiation	40	38.8	47	45.6	16	15.5	0	0	0	0	1.77	.703
Use of e-sourcing improves performance	50	48.5	53	51.5	0	0	0	0	0	0	1.51	.502
I know how to use Serenic System	35	34.0	42	40.8	26	25.2	0	0	0	0	1.91	.768

Key: 1= Strongly agree. 2= Agree. 3= Not sure. 4 = Disagree and 5=strongly disagree. M=Mean, SD=Standard Deviation. Mean (1-1.80= strongly agree, 1.81-2.60= Agree, 2.61-3.40= Not sure, 3.41-4.20= Disagree, 4.21-5.00= Strongly disagree)

N=103

Source: Field Data (2021).

Table 4. Assessment of how e-ordering relates to performance of Pathfinder International

Statements	SA		A		NS		D		SD		M	SD
	F	%	F	%	F	%	F	%	F	%		
I know how to electronically prepare and post purchase orders	45	43.7	42	40.8	5	4.9	0	0	6	5.8	2.17	.971
Pathfinder fully uses e-ordering to prepare and send purchase orders	40	38.8	37	35.9	10	9.7	16	15.5	0	0	2.02	1.057
Pathfinder uses e-ordering to improve transparency, reduce errors and to improve customer order management	40	38.8	57	55.3	0	0	16	15.5	0	0	1.73	.744
Serenic System is an efficient system for e-ordering	40	38.8	52	50.5	5	4.9	0	0	6	5.8	1.83	.971
I know how to attach all relevant documents in the system	45	43.7	42	40.8	5	4.9	5	4.9	6	5.8	1.88	1.096

Key: 1= Strongly agree. 2= Agree. 3= Not sure. 4 = Disagree and 5=Strongly disagree. M=Mean, SD=Standard Deviation. Mean (1-1.80= strongly agree, 1.81-2.60= Agree, 2.61-3.40= Not Sure, 3.41-4.20= Disagree, 4.21-5.00= Strongly disagree)

N=103

Source: Field Data (2021).

Findings in Table 4 show that Pathfinder uses e-ordering to improve transparency, reduce errors and to improve customer order management (M=1.73, SD=0.744), Serenic system is an efficient system for e-ordering (M=1.83, SD=0.971), staff know how to attach the relevant documents in the system (M=1.88, SD=1.096), Pathfinder uses e-ordering to prepare and send purchase orders (M=2.02, SD=1.057) and staff knew how to electronically prepare and post purchase orders (M=2.17, SD=0.971). This implies that e-ordering is well embraced at Pathfinder and that it relates well with organizational performance. The findings concur with [47] that e-ordering increases supply chain performance. It was recommended that e-ordering be implemented.

Findings in Table 5 show that the staff strongly agreed that; e-invoicing saves time and money as compared to manual invoicing (M=1.47, SD= 0.948), e-invoicing is a secure means of archiving documents (M=1.61, SD= 0.992) and e-invoicing is a beneficial asset to Pathfinder (M=1.73, SD= 1.095). The staff also agreed that Serenic is an effective system to do e-invoicing

(M=2.47, SD= 1.406) and they know how to prepare e-invoices and post them to Serenic (M=2.52, SD= 1.074). This implies that e-invoicing is a greatly related to organization performance and that staff of Pathfinder majorly appreciate use of e-invoicing in the organization. The findings concur with [50] that e-invoicing improved organizations performance.

Findings in Table 6 show that e-payment leads to secure and safer payment transactions (M=1.31, SD=0.578), e-payment is a convenient and credible means of making payments (M=1.33, SD=0.964), Serenic is an effective system that updates all e-payments accurately (M=1.66, SD=0.986). The staff strongly agreed that they electronically pay all vendors and suppliers (M=2.17, SD=1.133) and that the staff know how to post payments made electronically (M=2.48, SD=1.203). This implies that most staff strongly believe in e-payment system and are interested in seeing it prosper. The findings concur with [52] that e-payment systems are important mechanisms which are safer and accessible for offering online payment.

Table 5. Determination on relationship of e-invoicing to performance of Pathfinder

Statements	SA		A		NS		D		SD		M	SD
	F	%	F	%	F	%	F	%	F	%		
E-invoicing saves time and money as compared to manual invoicing	77	74.8	15	14.6	11	10.7	0	0	0	0	1.47	.948
E-invoicing is a secure means of archiving documents	67	65.0	20	19.4	5	4.9	11	10.7	0	0	1.61	.992
E-invoicing is a beneficial asset to Pathfinder	56	54.4	36	35.0	0	0	5	4.9	6	5.8	1.73	1.095
Serenic is an effective system to do e-invoicing	30	29.1	37	35.9	10	9.7	10	9.7	16	15.5	2.47	1.406
I know how to prepare e-invoices and post them to Serenic	30	29.1	52	50.5	5	4.9	16	15.5	0	0	2.52	1.074

Key: 1= Strongly agree. 2= Agree. 3= Not sure. 4 = Disagree and 5=Strongly disagree. M=Mean, SD=Standard Deviation. Mean (1-1.80= strongly agree, 1.81-2.60= Agree, 2.61-3.40= Not sure, 3.41-4.20= Disagree, 4.21-5.00= Strongly disagree)

N=103

Source: Field Data (2021).

Table 6. Examination of the relationship of e-payment and performance of Pathfinder

Statements	SA		A		NS		D		SD		M	SD
	F	%	F	%	F	%	F	%	F	%		
E-payment leads to secure and safer transactions	77	74.8	20	19.4	6	5.8	0	0	0	0	1.31	.578
E-payment is a convenient and credible means of payments	87	84.5	10	9.7	6	5.8	0	0	0	0	1.33	.964
We electronically pay all vendors	35	34.0	32	31.1	25	24.3	5	4.9	6	5.8	2.17	1.133
I know how to electronically post payments	35	34.0	10	9.7	32	31.1	26	25.2	0	0	2.48	1.203
Serenic is effective system that updates e-payments accurately	67	65.0	10	9.7	20	19.4	6	5.8	0	0	1.66	.986

Key: 1= Strongly agree. 2= Agree. 3= Not sure. 4 = Disagree and 5=Strongly disagree. M=Mean, SD=Standard Deviation. Mean (1-1.80= strongly agree, 1.81-2.60= Agree, 2.61-3.40= Not sure, 3.41-4.20= Disagree, 4.21-5.00= Strongly disagree)

N=103

Source: Field Data (2021).

Table 7. The researcher examined performance of NGO

Statements	SA		A		NS		D		SD		M	SD
	F	%	F	%	F	%	F	%	F	%		
Performance can be measured in terms of operations efficiency	56	54.4	41	39.8	0	0	0	0	0	0	1.57	.775
Performance can be measured through how staff are retained	77	74.8	15	14.6	0	0	0	0	0	0	1.61	1.087
Performance improves rate of employee's satisfaction	45	43.7	52	50.5	6	5.8	0	0	0	0	1.62	.596
Pathfinder values employees' suggestions and feedback	15	14.6	88	85.4	0	0	0	0	0	0	1.85	.354
Pathfinder conducts training to improve performance	25	24.3	42	40.8	30	29.1	6	5.8	0	0	2.17	.864

Key: 1= Strongly agree. 2= Agree. 3= Not sure. 4 = Disagree and 5=Strongly disagree. M=Mean, SD=Standard Deviation. Mean (1-1.80= strongly agree, 1.81-2.60= Agree, 2.61-3.40= Not sure, 3.41-4.20= Disagree, 4.21-5.00= Strongly disagree)

N=103

Source: Field Data (2021).

Findings in [Table 7](#) show that performance can be measured in terms of operations efficiency (M=1.57, SD=0.775), performance can be measured through how staff are retained (M=1.61, SD=1.087), performance improves rate of employees satisfaction (M=1.62, SD=0.596), Pathfinder values employees suggestions and feedback (M=1.85, SD=0.354) and that Pathfinder conducts training to improve performance (M=2.17, SD=0.864). This means that a high number of staff members of Pathfinder International are very positive and interested in seeing the organizations performance progress. The findings agree with [\[53\]](#) that satisfaction of employees is very important as it makes the organization perform in a better and an efficient manner.

4.1. Inferential Statistics

According to the results indicated in [Table 8](#), there was a strong significant correlation between e-sourcing and performance ($r = 0.670$, $p\text{-value}=0.000$), a medium significant correlation between e-ordering and performance

($r = 0.512$, $p\text{-value}=0.115$) a strong significant correlation between e-invoicing and performance ($r = 0.783$, $p\text{-value}=0.000$) and a strong significant correlation between e-payments and performance ($r = 0.779$, $p\text{-value}=0.000$).

The finding concurs with [\[47\]](#) that optimization of e-sourcing improved the use of technology. It also concurs with [\[38\]](#) that e-sourcing significantly affect organization performance. The findings also agree with [\[50\]](#) that e-invoicing improves organization performance.

4.2. Analysis of Variance

An analysis was performed on the relationship between e-sourcing, e-ordering, e-invoicing, e-payments and performance. From [Table 9](#) below, the model was significant ($p\text{-value} = 0.000$) at 0.05 level in explaining the linear relationship between the study variables. In addition, the F-statistic is greater than 1 therefore showing the suitability of the model in assessing the relationship between independent and dependent variable. This implies that the model is suitable for running a factor analysis.

Table 8. Coefficient of Correlation

Variables		NGO performance	E-sourcing	E-ordering	E-invoicing	E-payment
NGO performance	Pearson Correlation	1				
	Sig. (2-tailed)					
E-sourcing	Pearson Correlation	.670**	1			
	Sig. (2-tailed)	.000				
E-ordering	Pearson Correlation	.512**	.655	1		
	Sig. (2-tailed)	.000	.000			
E-invoicing	Pearson Correlation	.783**	.428	.219	1	
	Sig. (2-tailed)	.000	.000	.000		
E-payment	Pearson Correlation	.779**	.763	.744	.653	1
	Sig. (2-tailed)	.000	.000	.000	.000	

** . Correlation is significant at the 0.05 level (2-tailed)
Survey Data (2021).

Table 9. Analysis of Variance Results

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	54.627	4	13.657	203.503	.000 ^b
	Residual	6.577	98	.067		
	Total	61.204	102			

Predictors: (constant) e-sourcing, e-ordering, e-invoicing, e-payments.
Dependent variable: performance
Survey Data (2021).

4.3. Coefficient of Determination Results

The coefficient of determination was conducted to assess how well the statistical model was expected to predict future results. Table 10 presents the Model Summary.

Table 10. Model Summary.

Model	R	r ²	Adjusted r ²	Std. Error of the Estimate
1	0.945	0.893	0.888	0.259

Predictors: (constant) e-sourcing, e-ordering, e-invoicing, e-payments. Survey Data (2021).

Adjusted R squared demonstrates the variety in the independent variable because of changes in the dependent variables, from the results in the Table 10, of the four independent variables that were studied (e-sourcing, e-ordering, e-invoicing, e-payments), they contribute 88.8% of NGO performance as represented by the adjusted (r²) at 95% confidence level. This means that other factors that this study did not focus on contribute to 11.2% of NGO performance.

4.4. Multiple Regression Analysis Model Results

The main aim of multiple regression is to better understand the association between e-procurement and NGO performance. The study used SPSS to enter and code responses from the respondent to assist in computing the extent to which a unit changes in a given independent variable cause a change to dependent variable. Table 11 presents the multiple regression.

Table 11. Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant/ Y Intercept	1.523	.202		7.523	.000
E- sourcing	.169	.093	.095	1.812	.005
E- ordering	.453	.089	.291	5.085	.000
E-invoicing	1.673	.160	.508	10.435	.000
E-payments	.187	.060	.273	3.093	.003

Survey Data (2021)

As per the SPSS generated in Table 11, the equation,

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

becomes;

$$Y = 0.076 + 0.263 X_1 + 0.082 X_2 + 0.476 X_3 + 0.128 X_4$$

From the above regression model, holding e-sourcing, e-ordering, e-invoicing, e-payments at constant, NGO performance would be at 1.523 (Beta coefficients). It was also established that a unit change in e-sourcing would cause a change in NGO performance by a factor of 0.169, a unit change in e-ordering would contribute to a change in NGO performance by a factor of 0.453, a unit change in e-invoicing would contribute to a change in NGO

performance by a factor of 1.673 and a unit change in e-payments would contribute to a change in NGO performance by a factor of 0.187. All variables are significant since the p value is less than 0.05. This means that involvement of e-procurement in matters relating to organizational performance are key and that e-invoicing relates to organizational performance at a great extent followed by e-ordering and e-payment which affect performance to a moderate level and lastly e-sourcing which affects performance of the organization with little extent. The regression results are supported by previous done studies by [11] and [51] who established that electronic procurement has a positive significant effect on performance.

5. Conclusion, Policy Recommendation, Limitation and Future Research

5.1. Conclusion

The researcher was able to achieve the study objectives whereby she established that electronic procurement and performance of organizations was indeed related. However, the extent to which these relationships were established differed in some aspect. Through evaluation of how e-sourcing related to performance at pathfinder, the findings in the study showed that pathfinder utilized the e-sourcing tool to identify suppliers, reduce costs and to improve speed, performance and efficiency. This concluded that e-sourcing is related to performance. Through the assessment of how e-ordering relates to performance of the organization at pathfinder, this study concluded that e-ordering was related to performance since it showed that the organization used e-ordering to reduce errors, improve transparency and customer order management in order to achieve performance.

In the process of determining the relationship of e-invoicing and performance of organization at pathfinder, the study concluded that use of e-invoicing is related to performance because the tool proved to be a secure, faster and economical means of archiving documents which improved performance. In the extensive examination of how e-payment is related to performance at pathfinder, the findings concluded that use of e-payment is greatly related to performance at pathfinder since use of e-payment led to secure, safer, convenient and credible means of processing payments. These factors greatly improved performance. The findings concluded that the team believed Pathfinder had fully implemented e-procurement adding that full support was offered to the team with the goal of achieving e-procurement. It was concluded that the systems used were of high quality and that Pathfinder supports many Grantees who are community based.

5.2. Policy Implications

To evaluate the relationship between e-sourcing and performance at pathfinder, it was recommended that the organization ensures that remote offices have stable internet to support all users, that staff members are well trained about the online platform, certify that Serenic is embraced fully and made end to end to ensure excellent

outcome. To assess the relationship between e-ordering and performance at pathfinder, it was recommended that, manual ordering be phased out and e-ordering be adopted, proper systems be implemented and that e-ordering be made accessible to all staff to make them embrace the system. The system be made consistent by staff and emphasize all procurement activities be done online. Turnaround time also to be improved, robust e-ordering system on all procurement processes be identified and consistency in use of the system by employees be embraced. To determine the relationship between e-invoicing and performance at pathfinder, it was recommended that the organization makes use of e-invoicing mandatory in all its procurement activities, the system be shared to all for use, both OJT and ICT training be performed to the procurement team to ensure that staff can use the system efficiently and that all gaps that effect e-invoicing to be always addressed, frequently and swiftly to improve the system and avoid hiccups.

During examination of the relationship between e-payment and performance of pathfinder, it was discovered that there was need to improve e-payment. It was recommended that the serene system be upgraded to enable it function fully while avoiding challenges and delays when processing payments, more training be offered to the procurement team, the ERP system be linked to the bank, a robust system that encourages e-payment be put in place and e-payment tool be made mandatory in order to achieve efficiency in pathfinder.

5.3. Limitation and Future Research

To determine how well e-procurement and organization performance are related, a closely related or a similar study in other industries like the corporate sector, the governmental and parastatal sector should be conducted for comparison purposes. Other related aspects like financial stability should be studied to see how they relate to performance of an organization. In conducting the study, it proved very hard to reach respondents since some of them were field officers who worked in different counties of coast province. The management level staffs who run on busy schedules were very difficult to reach. The lockdown due to the COVID-19 pandemic between counties, negatively affected the speed of collecting data. Some respondents feared that their identities might be revealed and that they were hesitant in filling the questionnaires.

References

- [1] Kitonga, D. M., Bichanga, W. O., & Muema, B. K. (2016). The Role Of Determining Strategic Direction On Not-For-Profit Organizational Performance In Nairobi County In Kenya. *International Journal Of Scientific & Technology Research Volume 5*, 1.
- [2] Moronge, M., & Munyao, J. M. (2018). Influence of E-procurement Practices on the Performance of Procurement in Public Universities in Kenya. *The Strategic Journal of Business & Change Management*, 9, 16.
- [3] Kaur, M. (2015). Importance of NGOs in Society. *Quora*, 1.
- [4] Democracy, B. o., Human Rights, & Labor. (2017, January 20). *U.S Department of State*. Retrieved from state.gov: <https://www.state.gov/non-governmental-organizations-ngos-in-the-united-states/>.
- [5] Matthews, S. (2017). The role of NGOs in Africa: are they a force for good. *The Conversation*, 2.
- [6] Cheruiyot, B. (2018). Factors Influencing Effective Implementation of Procurement Practices in Non-Governmental Organizations: A case of Caritas Rumbek. *JIBISM-Journal of International Business, Innovation and Strategic Management*, 2.
- [7] Masero, B. S. (2016). *Strategic Capability and performance of non governmental organizations in Nairobi County, Kenya*. Nairobi: LinkedIn Learning.
- [8] Kitunzi, E. A. (2016). *Influence Of E-Procurement On Organizational Performance: The Case Of Kenya Association Of Manufacturers Firms In Nairobi County, Kenya*. Nairobi: <http://erepository.uonbi.ac.ke/>.
- [9] Nyaboke, P., Mburu, N., Amemba, C., & Osoro, A. (2015). Challenges Affecting Public Procurement Performance Process in Kenya. *European Journal of Business and Management*, 1.
- [10] Afzal, A. H., Raza, S., & Ansari, N. U. (2018). Factors influencing organizational performance in public hospital of Pakistan. *Journal of Applied Environmental and Biological Sciences*, 3.
- [11] Akoth, C. A. (2014). E-Procurement and Organizational Performance of Non-Governmental Organizations in Nairobi Kenya. 1.
- [12] Muathe, S., Waithaka, S. T., & Malongo, I. K. (2019). The Mediating Role of User Perception on the Relationship between Information Technology Integration and Performance of Selected Public Hospitals in Kenya. *Journal of Business*, 7(2), 84-90.
- [13] Puckett, J. (2019). The Importance of Performance Management. *TA - Technology Advice*, 3.
- [14] Moss, S. (2016). Measures of organizational performance. *Sicotests*, 3.
- [15] Hussein, A. N. (2018). Electronic Procurement and Procurement Performance of Private Hospitals in Nairobi Kenya. *E-repository UON*, 12.
- [16] Muhia, D. W., & Afande, F. O. (2015). Adoption of E-Procurement Strategy and Procurement Performance in State Corporations in Kenya - A Case of Kenya Revenue Authority. *Industrial Engineering Letters - ISSN*, 1.
- [17] Rotich, G., Muma, B., & Micheni, E. (2016). E-Sourcing, E-Maintenance and Public Procurement Performance: A Case of Kericho County-Kenya. *Science Publishing Group - Science Research Vol. 4, No. 2*, 3.
- [18] ProcurePort. (2017, 08 28). *Google*. Retrieved from ProcurePort blog: <https://blog.procureport.com/effective-e-sourcing-technology/>.
- [19] Ordering. (2019, 05 16). *Ordering*. Retrieved from Google: <https://blog.ordering.co/advantages-of-online-ordering-systems>.
- [20] Kiroski, K., & Gusev, M. (2010). E-Invoicing And E-Ordering: Analysis And Comparison. *The 7th International Conference for Informatics and Information Technology (CIIT 2010)*, 2.
- [21] Kisimbii, J., & Maalim, A. (2019). Influence of E-Procurement on the Performance of Infrastructural Projects in Devolved Units; a Case of Roads Construction Projects in Mombasa County. *Journal of Entrepreneurship & Project Management*, 7.
- [22] Morrisson Kaunda Mutuku (PhD). (2020). A Meta-Analysis of User Perception and Use of Online Digital Platforms in Kenya: Evidence from E-citizen Platform, Kenya. *International Journal of Management & Information Technology*, 15, 35-42
- [23] Chepkwony, N. C. (2017). E-Ordering And E-Informing On Supply Chain Performance In Kenyan State Corporations In Nairobi County. *International Journal of Economics, Commerce and Management*, 3.
- [24] Anderson, C. (2019, May 20). *Google*. Retrieved from techradar pro: <https://www.techradar.com/news/the-benefits-of-electronic-invoicing>.
- [25] Yvanovich, R. (2018, February 2). *Google*. Retrieved from trginternational.com: <https://blog.trginternational.com/the-benefits-of-e-invoicing-electronic-invoicing>.
- [26] Biedron, R. (2018, 11 06). *Purchase Control*. Retrieved from Purchasecontrol.com: <https://www.purchasecontrol.com/blog/electronic-invoicing/>.
- [27] Newman, D. F. (2019, 04 04). *Taimer Simplify work*. Retrieved from Google: <https://taimer.com/invoicing-billing/why-e-invoicing-benefits-challenges-small-businesses/>.
- [28] Fatonah, S., Yulandari, A., & Wibowo, F. W. (2018). A Review of E-Payment System in E-Commerce. *Journal of Physics: Conference Series*, 3.

- [29] Wall, A. (2018, 06 28). *CEGA - Center for Effective Global Action*. Retrieved from Medium.com: <https://medium.com/center-for-effective-global-action/weighing-the-benefits-and-drawbacks-of-e-payments-insights-from-small-businesses-in-mexico-eaff8a9575eb>.
- [30] Kamble, S. (2019, 03 13). *Quora*. Retrieved from Google: <https://www.quora.com/What-are-the-advantages-of-an-electronic-payment-system>.
- [31] Tondon V, V. (2018, 06 28). *Invoicing Simplified*. Retrieved from invoicera.com: <https://www.invoicera.com/blog/top-10-business-advantages-of-accepting-payments-online/>.
- [32] Konior, S. W. (2016, August 29). *Google*. Retrieved from Business 2 Community: <https://www.business2community.com/ecommerce/e-payment-system-01641721>.
- [33] Tsuma, V. I., & Kanda, M. (2017). Factors Affecting the Adoption of e-Procurement Systems among International Non-Governmental Organisations in Kenya. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 3.
- [34] Oteki, E. B., Namusonge, G. S., Sakwa, M., & Ngeno, J. (2018). Influence of Electronic Order Processing on Supply Chain Performance of Sugar Processing Firms in Kenya. *International Journal of Social Sciences and Information Technology*, 2624. Retrieved from https://www.academia.edu/35673696/influence_of_electronic_order_processing_on_supply_chain_performance_of_sugar_processing_firms_in_kenya.
- [35] Mubarak, F. M. (2019). Role of E-Procurement on Organizational Performance : A study of Manufacturing sector of Pakistan. *Research Gate*, 3.
- [36] Lamorte, W. W. (2019). Diffusion of Innovation Theory. *Boston University School of Public Health*, 4.
- [37] Halton, C. (2019, July 19). *Investopedia*. Retrieved from Dotdash Publishing: <https://www.investopedia.com/terms/d/diffusion-of-innovations-theory.asp>.
- [38] Harelimana, J. B. (2018). The Impact of E-Procurement on the Performance of Public Institutions in Rwanda. *Global Journal of Management and Business Research: D Accounting and Auditing*, 4.
- [39] Ibrahim, M., & Daoud, L. (2017). A conceptual model of factors affecting e-procurement usage among Jordanian firms. *IJRDO-Journal of Business Management*, 7.
- [40] Davis, F., Bagozzi, R., & Warshaw. (1989, 1992). *Wikipedia.org*. Retrieved from Wikipedia: https://en.wikipedia.org/wiki/Technology_acceptance_model.
- [41] Siricha, P. S., & Theuri, F. S. (2016). The Effects of Electronic Procurement on Organizational Performance In Kenya Ports Authority. *Imperial Journal of Interdisciplinary Research (IJIR)*, 19, 5.
- [42] Davis, F. (1989). *Wikipedia*. Retrieved from Google: https://en.wikipedia.org/wiki/Technology_acceptance_model.
- [43] Ajibade, P. (2018). Technology Acceptance Model Limitations and Criticisms: Exploring the Practical Applications and Use in Technology-related Studies, Mixed method, and Qualitative Researches. *Research Gate*, 5.
- [44] Durodolu, O. O. (2016). Technology Acceptance Model as a predictor of using information system' to acquire information literacy skills. *Library Philosophy and Practice*, 12.
- [45] Oona, L. (2017). Strategic & Global Sourcing Case Company X, Sourcing Small Home Electronics from China. *bitstream journal*, 9.
- [46] Basta, T., & Aziz, K. I. (2018). Adoption and outcomes of a strategic e-sourcing system at BravoSolution. *ResearchGate*, 4.
- [47] Chepkwony, J. K., & Lagat, C. (2016). E-Ordering and E-Informing on Supply Chain Performance in Retail Marketing Outlets in Kenya. *Journal of Marketing and Consumer Research*, 1, 3.
- [48] Candra, S., & Gunawan, F. E. (2017). The impact of e-Procurement practice in Indonesia government: A Preliminary Study (The case of Electronic Procurement Service at Bekasi District). *Journal of Physics: Conference Series*, 5.
- [49] Haag, S., Born, F., Kreuzer, S., & Bernius, S. (2013). *Organizational Resistance to E-Invoicing – Results from an Empirical Investigation among SMEs*. Frankfurt, Germany: IFIP International Federation for Information Processing.
- [50] Bittok, K. K. (2017, December). Effects Of E- Procurement Adoption On Procurement Performance Of Kenya Electricity Generating Company. 9. Kisii, Western, Kenya.
- [51] Rasto, N. C., & Kibet, D. (2017). Effect Of Electronic Procurement Practices On Organizational Performance In Public Hospitals In The County Government Of Uasin Gishu, Kenya. *International Academic Journal of Procurement and Supply Chain Management (IAJPSCM) | ISSN 2518-2404*, 8.
- [52] Kabir, A. M., Saidin, Z. S., & Ahmi, A. (2015). Adoption of e-payment systems; A review of Literature. *ResearchGate*, 4, 5.
- [53] Latif, S. M., Naeem, H., & Ahmad, M. (2013). *Google Scholar*. Retrieved from Semantic Scholar: <https://www.semanticscholar.org/paper/Impact-of-employee's-job-satisfaction-on-Latif-Ahmad/d792a8b4c90862a1f86b0cb4d05dbd235105d8b6>.
- [54] Mutuku, M. K., Muathe, S., & James, R. (2019). Mediating effect of competitive advantage on the relationship between e-commerce capability and performance: Empirical evidence from commercial banks in Kenya. *European Journal of Business and Management*, 11(17), 48-57.

