E-PROCUREMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE: A CASE OF KIAMBU COUNTY GOVERNMENT KENYA

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ABSTRACT

Businesses are increasingly using e-procurement around the world, thanks to technological advancements. The e-procurement is critical to attaining organizational objectives. However, the county governments have significant challenges in adopting e-procurement processes in their operational. Clearly, the benefits of implementing important e-procurement processes are not visible in a regressive government climate. Companies who employ e-procurement in their procurement operations, typically experience benefits such as cost reductions, data exchange, and simpler procurement processes. This survey aimed to explore the effect of e-procurement practices on the performance of Kiambu County Government. The study objectives include; to assess the influence of e-auction, e-tendering, e-ordering and e-invoicing on the performance of Kiambu County Government. The study anchored by Auction Theory, Resource Based View (RBV) Theory and Technology Acceptance Model. The study utilized a descriptive survey research design. The survey targeted 216 staffs drawn from procurement department and finance department working at Kiambu County Government. Stratified random sampling technique was utilized to choose 65 participants. The data was gathered through questionnaires. The collected data were examined using SPSS v.26, Statistical Package for the Social Sciences. To present the examined data, frequency tables, means, and standard deviations were used. The findings of the study revealed that E-auction improves efficiency in procurement process which involves the savings of time for sellers and buyers. E-tendering results to a shorter tender invitation procedure and resulted in more transparency in the tendering process. E-ordering enhances timely order acquisitions and delivery. E-invoicing reduces errors in payment and boost accountability and transparency. The findings revealed that e-auction, e-tendering, e-ordering and e-invoicing significantly affect the performance of County Government of Kiambu. The study concludes that e-auction, e-tendering, e-ordering and e-invoicing positive significantly enhanced the performance of Kiambu County Government. Through e-auctions, governments save a lot of time and money while also giving suppliers a chance to expand into new markets. E-tendering significantly reduce costs while increasing the operation efficiency of public sector tendering. E-invoicing enhances performance by facilitating an organization's smooth operation. The study recommend that county government should improve accounting, recording, and reporting through appropriate invoicing mechanisms. Requisition, tendering, contract warding, and payment should all be included in the automated procurement process. Additionally, the county government should improve the delivery of public services by giving both the national and county governments timely, transparent, and accurate financial and accounting information. The county administration

should use electronic ordering, especially for processing purchase orders electronically.

Key words; E-Procurement, E-Auction, E-Tendering, E-Ordering, E-Invoicing, Organizational Performance

INTRODUCTION

Roma and McCue (2012) define e-procurement as the application of information technology to the development of an environment-responsive procurement procedure. Practically all business areas and hierarchical sorts have embraced e-acquirement. E-procurement is influenced by cultural, social, and political factors, particularly in the public sector. E-procurement implementation in public procurement calls for assets and professional expertise. A coordinated training program and change management mechanisms are also necessary for the procedure (Garran, 2015). Performance is crucial to an organization's success because it makes it possible to make cost-efficient purchases and acquire high-quality goods and services that give the company's goods and services a competitive edge on the market. According to an analysis of how successfully those functions are carried out when it comes to using it for procurement, e-procurement is positively connected with how well county governments in Kenya carry out their supply chain operations (Lagat, 2016).

According to a survey done in the United States by Baldus and Hatton (2020), strategic commitment of a supplier to a buyer, for example, had a greater effect on performance (65%) than hard, more measurable conditions like supplier capacity (60%), despite being viewed as less significant in the overall supplier selection process. The state government's distribution of resources determined how well the federal government performed. Poor performance contributes to increased failure, costs, and the seriousness of the acquisition capability. Poor performance, according to Aguila (2020), causes a decrease in benefit in the private sector and is a substantial barrier to the recognition of hierarchical growth since it causes delays in delivery, subpar labor and products, and the expansion of defects.

In South Africa, the purchasing function has an impact on local municipalities' performance since suppliers may have an impact on a product's price, quality, delivery reliability, and availability (Mafini, Dhurup & Madzimure, 2020). The government anticipates that effective supplier relations management will improve performance by reducing the cost of goods and raw materials while upholding high standards for quality and post-purchase support. This means that efficient supply chain management depends on excellent supplier relations management. Managing connections with present suppliers to guarantee ongoing availability of necessary, high-quality goods at the

business is essential for achieving optimal performance (Koech & Coldwell, 2019). This will guarantee that sourced items are actually purchased at a fair price and at the appropriate time.

According to Muriuki, Guyo, Odhiambo, and Kinoti (2019), implementing inventory optimization, particularly when using e-procurement systems, significantly affects how well county governments perform in Kenya. Both the strategic and operational sides of the procurement function are taken into consideration when evaluating its performance. Operationally, performance is evaluated in terms of the cost of purchases, the standard of the delivered goods and the adaptability of the procurement process (Kosgei & Kinoti, 2018).

According to Chegugu and Yusuf (2017), e-procurement is the use of computerized, internet-based systems for individual or group procurement tasks like searching, purchasing, negotiating, ordering, receiving, and post-purchase verification. E-procurement strategies that focus on one or more stages of the procurement process include e-tendering, e-auctioning, e-invoicing, e-auction, and e-marketing.

Kenya's Jubilee government started using e-procurement techniques immediately after taking office. Since then, numerous demands and reforms have been made to force the completion of all government procurement activities online. All public works, products, and services must be purchased through internet channels, as per the Kenyan government (Miyoko Marika & Litondo, 2019). There are requirements for all financial and procurement transactions to be made online specifically for municipal governments (Waithaka & Kimani, 2021). This increase accountability and openness and serve as a disincentive to fraud and corruption. There is a rule that all procurement and financial procedures, specifically for County administrations, must be done online. For instance, the government mandated the utilization of the IFMIS in all 47 counties. Through the provision of real-time financial data and efficient programs, IFMIS was introduced to enhance governance and create budget budgets. Additionally, it improves accountability and transparency and serves to combat fraud and corruption.

The company's overall state is reflected in its organizational performance, which is the result of how successfully it uses its resources through operational actions. A company's performance is influenced by efficiency, sales outcomes, customer satisfaction, and connection building. Taking part in e- procurement improves authoritative execution, including viability, deals execution, client satisfaction, and relationship development, according to Hamza, Gerbi, and Ali (2017).

The Kiambu County Government through the department of Finance and the Economic Plan is responsible for procurement processes. This department handle not only the disposal of assets, but also the purchase of materials and services. The county government is aware of the need for programs to enhance capacity so that these departments can handle projects successfully and successfully. As a result, procurement has become a higher priority and the capacity development

of those involved in the procurement process has become necessary (Kiambu County Government, 2021.

Statement of the problem

For procurement professionals, measuring organizational performance has always been a difficult task (Waithaka & Kimani, 2021). Despite the usage of e-procurement, procurement malpractices have also been on the rise in County Governments. According to a report from the controller of the budget in 2021, many counties engaged in widespread procurement fraud through the inflation of purchased products. This is true despite the existence of electronic procurement. This indicates that e-procurement has not fully fulfilled the function that it was intended to play (increased efficiency, cost savings, transparency, and reduced corruption).

Significant scandals and embarrassments have occurred in Kenya's procurement function, and they have been linked to improper management of procurement information and extreme corruption (Boariu, 2018). A strong, integrated automated procurement system is necessary since it will increase competition and reduce costs (Ogot, 2017). How well devolved government in Kenya performs in these areas is determined by how effectively purchasing planning, specification development, standard setting, financing, selection of suppliers, analysis of value, price intervention, supply contract administration, purchase making, inventory control, and other associated tasks are carried out. The county government's poor performance, which is typified by late payments to vendors, severely hampers their capacity to provide timely service.

The remunerations of implementing strategic e-procurement procedures are obviously unknown to the majority of devolved systems of government. For instance, Kiambu County did not use the e-procurement technology Integrated Financial Management Information System (IFMIS) to its full potential. The Kiambu County Assembly Committee on Finance and Economic Planning estimates that officer theft cost the county more than Sh5 billion in lost revenue. A report that stated enforcement officers weren't sending the money they had received revealed this.

A review of Kiambu County's systems, policies, practices, and procedures, however, uncovered a number of flaws, including the absence of explicit operating procedure manuals and policy guidelines. Failure to perform revenue collection reconciliations, weak budgetary controls, lack of internal controls and checks in the billing process, a lack of a sophisticated county-wide risk management framework, a lack of a thorough Fixed Assets Register, and making payments when vouchers are not fully supported are a few of the loopholes that have been found (EACC, 2018). This shows that e-procurement methods' effectiveness has to be assessed. Thus, the existing study aimed to explore the effect of e-procurement practices on the performance of Kiambu County Government.

Objectives of the study

i. To determine the influence of e-auction on the performance of Kiambu County government, Kenya.
ii. To examine the influence of e-tendering on the performance of Kiambu County government, Kenya.
iii. To find out the influence of e-ordering on the performance of Kiambu County government, Kenya.
iv. To establish the influence of e-invoicing on the performance of Kiambu County government, Kenya.

Significance of the Study

The study results may be crucial for developing standards for excellent public sector practice, which will be useful for procurement managers in county governments and other public sectors. In Kenya, county governments typically struggle with issues, corruption, and poor value for money in their procurement procedures. This study offers new insights and ways to help these county governments improve their procurement performance. The study's conclusions will make it possible for the management of various public sector institutions to pinpoint the crucial elements to take into account when procuring goods and services in order to maximize the utilize of public funds and assets.

The study may help county governments understand how to strengthen their e-procurement programs and easily handle the typical difficulties they encounter. Professionals in supply chain management and procurement will benefit from this study's explanation of how e-procurement works as a tool to enhance the efficiency of both public and private supply chains. At the point when the public authority takes on strategies to work with the use of e-procurement to upgrade store network execution, they might track down this data accommodating in diagnosing issues in the public sector. The findings of this study are thought to be beneficial for researchers and academics as a resource and foundation for additional research. Researchers should also have a better grasp of how e-procurement techniques can affect the effectiveness of procurement processes. Additionally, by using the research findings as a foundation, other research fields will be identified. The study's findings will serve as a guide for academics interested in taking research on the same subject and as a reference for future scholars who are interested in this area.

LITERATURE REVIEW

Theoretical Review

Auction Theory

William Vickrey first proposed the hypothesis in 1961. Paul Milgrom and Robert Wilson successfully enhanced the theory in the 1980s. By enforcing a precise set of rules about the

resource allocations of a group of bidders, auctions enable transactions. According to Alexanderson and Hultén (2006), selecting suppliers for public services is akin to holding common value auctions using a sealed-bid approach. Even though it's frequently the most crucial criterion, the bidders' prices might not be the only thing to consider. Once the bidding process is complete, the procuring public body normally examines the competing bids in terms of both price and quality. According to their argument, competitive tenders incorporate the positives, negatives, and risks of both auctions and beauty pageants.

A pure auction, according to Hultkrantz and Nilsson (2011), is preferable to a beauty pageant because it provides a more market-oriented, objective, and transparent way for granting licenses. Their biggest argument in favor of open tendering is that businesses participating in the auction process provide information about their estimates of the worth of the commodity by making increasingly larger financial offers. Hultkrantz and Nilsson (2011) highlight a number of drawbacks with beauty pageants, including the lengthy and slow-moving nature of the process, the difficulty in achieving transparency, and the fact that many of the criteria are subjective or hard to quantify. They go on to say that open tendering is a superior option even when social considerations are crucial because it can also include minimum standards and can permit both positive bids in desirable regions and negative bids in undesirable regions. This improves county government performance since the best supplier or bidder will be chosen based on the criteria that were used.

Resource Based View (RBV) Theory

Penrose first presented this theory in 1959, but Wernerfelt later developed it (1984). The resources of the firm serve as the foundation for most of the RBV theory. The hypothesis states that such resources should be prized since they ought to be rare, distinctive, and difficult to replace. The notion states that useful resources are those that make it easier to create or employ strategies to improve performance, seize market opportunities, or counter rising threats. This hypothesis depends on the possibility that an entity has inherent resources that can be used to achieve higher performance. The resource-based view (RBV) holds that a company's competitive advantage and success are primarily determined by its resources.

The RBV idea is in favor of the organization's independent actions taken as it gets ready to start its supply chain moving. The theory show that internal operational procedures are crucial parts of an organization's resources. An example would be integrating electronic platforms when carrying out activities like sending out tender invitations. The business will find it convenient to follow industry benchmark criteria while looking for suppliers, and this can be accomplished by implementing a comprehensive tendering procedure that is carried out online (Peteraf & Barney, 2018). The organization will be able to assess how the platform's success in handling the procurement function has an impact on each individual organization. Once they realize that they may base their competitive advantage on the effectiveness of the process, the RBV idea ensures

that the organization handles its procurement function with great sensitivity (Dierickx & Cool, 2019).

This theory explains why county governments have chosen to use and operate e-procurement systems. Technology drives electronic procurement. A resource is technology. In light of the theory, it is therefore anticipated that county governments will deliver services more effectively as e-procurement becomes more widely used. If properly used, e-procurement can be a resource that improves service delivery.

Technology Acceptance Model

Devis created the technology acceptance model in 1986. The paradigm states that on the off chance that individuals don't acknowledge the change, new innovation can't work on corporate viability and execution. Embracing any advancement, yet especially one in view of data innovation, requires putting resources into computer based apparatuses to ease correspondence and arranging (Munubi, Kinanga and Ondiba, 2017). However, these systems might be harmful. The systems must be specifically designed to accommodate organizational logic and preference. It's also crucial to understand that not everyone will embrace technological developments. It is important to make an attempt to understand the underlying causes of such issues and the reasons why people resist change. It is essential to establish the proper organizational culture, and any change must be executed gradually and in a communicative manner. Everyone involved must understand their obligations and be given the power to fulfill them (Munubi, Kinanga & Ondiba, 2017).

Kenyan counties should employ technology to increase market transparency and economic inclusion through complementarities, as well as to facilitate unfettered access to information. Public administrations can select goods and services from a variety of vendors in a virtual market that is accessible to qualified providers (goods) based on not primarily restricted selection criteria by utilizing procurement technologies like e-procurement. Digital signatures are used in e-procurement to ensure speedier transactions and to make the entire procurement process digital. Additionally, e-procurement will enable county government to cut administrative costs, potentially broaden the pool of suppliers, facilitate access to preferred goods (with pre-established quality standards), improve the understandability of information, make it simple to compare different products, and facilitate the logging of purchases and subsequent expenditure monitoring.

County governments have traditionally struggled with the invoicing process, which causes delays in the delivery of goods and services and client discontent. The use of various e-procurement techniques by county governments to improve their procurement process has so greatly emerged as a solution to this issue. As a result, the county governments' activities becomes more productive, effective, and efficient if the idea is implemented.

Empirical Literature Review

Waganda (2018) did a survey on the effect of e-procurement on United Nations agencies' execution in Nairobi. In Nairobi, a research was conducted on a few UN institutions. Exploratory research design was embraced in the survey. Data collection was done by means of the surveys. SPSS version 23 was utilized to assess the data that had been gathered. The data analysis revealed that the numerous procurement officers agreed with the assertion that electronic auctions offer sellers and buyers a transparent environment. The results also showed a connection between e-auction performance and that of United Nations agencies. To close a conceptual research gap, the previous study was carried out by United Nations Agencies, whereas the current study would was carried out by the Kiambu County Government.

A survey on the impact of e-tendering on the execution of the Nairobi County Government was undertaken by Gathima and Njoroge (2018). The investigation was grounded by two theories: transaction cost theory and innovation diffusion theory. The survey utilized explanatory research designs. The target group consisted of 750 participants from the payments, finance, and information technology departments. A total of 75 participants who were chosen at random from each of the three departments made up the study sample. The information was gathered by distributing questionnaires to the chosen sample. The outcomes of the survey uncovered that there was a noteworthy linkage between E-tendering approaches and the execution of the Nairobi City County Government at a 95% confidence level. The current study, however, took place in Kiambu County, whereas the last study was carried out in Nairobi City County.

Oteki (2019) investigated the effect of e-procurement methods on the supply chain efficiency of Kenyan sugar processing companies. The specific goal of the survey was to see how the use of electronic order processing techniques affected supply chain efficiency. The target population in Kenya involved of 12 sugar processing enterprises, with a total population of 7,584. A mixed research methodology was utilized. To get at a sample size of 367, stratified random sampling was utilized. Personally drop-and-pick surveys, observation and interviews were utilized to gather the information. The outcomes showed a substantial correlation between supply chain effectiveness and electronic order processing practices. While the present study was carried out at the Kiambu County administration, the previous study was undertaken in sugar processing businesses.

A survey was done by Nyagah, Kairuri, and Mwangangi (2017) at New Cooperative Creameries Limited in Kenya was aimed to explore the e-procurement impact on efficiency of supply chain in the dairy sector. This survey discovered a favorable association between e-ordering and supply chain performance using a descriptive survey design. The report makes recommendations for enhancing supply chain e-order processing efficiency. This research supports Afande's (2016) findings that there is a link between e-ordering and improved supply chain performance. According to the report, because of its potential savings, the automated approval system improves the procurement process' efficiency. The time it takes to create an order after submitting a request.

As long as the hierarchy is strictly followed and validated at the time of approval, spending limit compliance is improved. Control leaks arise because end users must take extra steps to add suppliers who are not already on the supplier master list. The low processing overhead lowers the cost of sending orders to suppliers.

A survey on the effect of e-procurement on UN agency execution in Nairobi City County was done by Waganda (2018). Secondary and primary data were utilized in this investigation, along with an exploratory study design. Secondary data came from a variety of publications and periodicals, while primary data came from procurement supervisors and other employees who were involved in the procurement process. This survey used regression analysis to explore the linkage between procurement performance and agency e-invoicing. Government agencies have been able to lower expenses, streamline the billing process, shorten payment deadlines, and improve data security by using electronic invoices.

Conceptual Framework

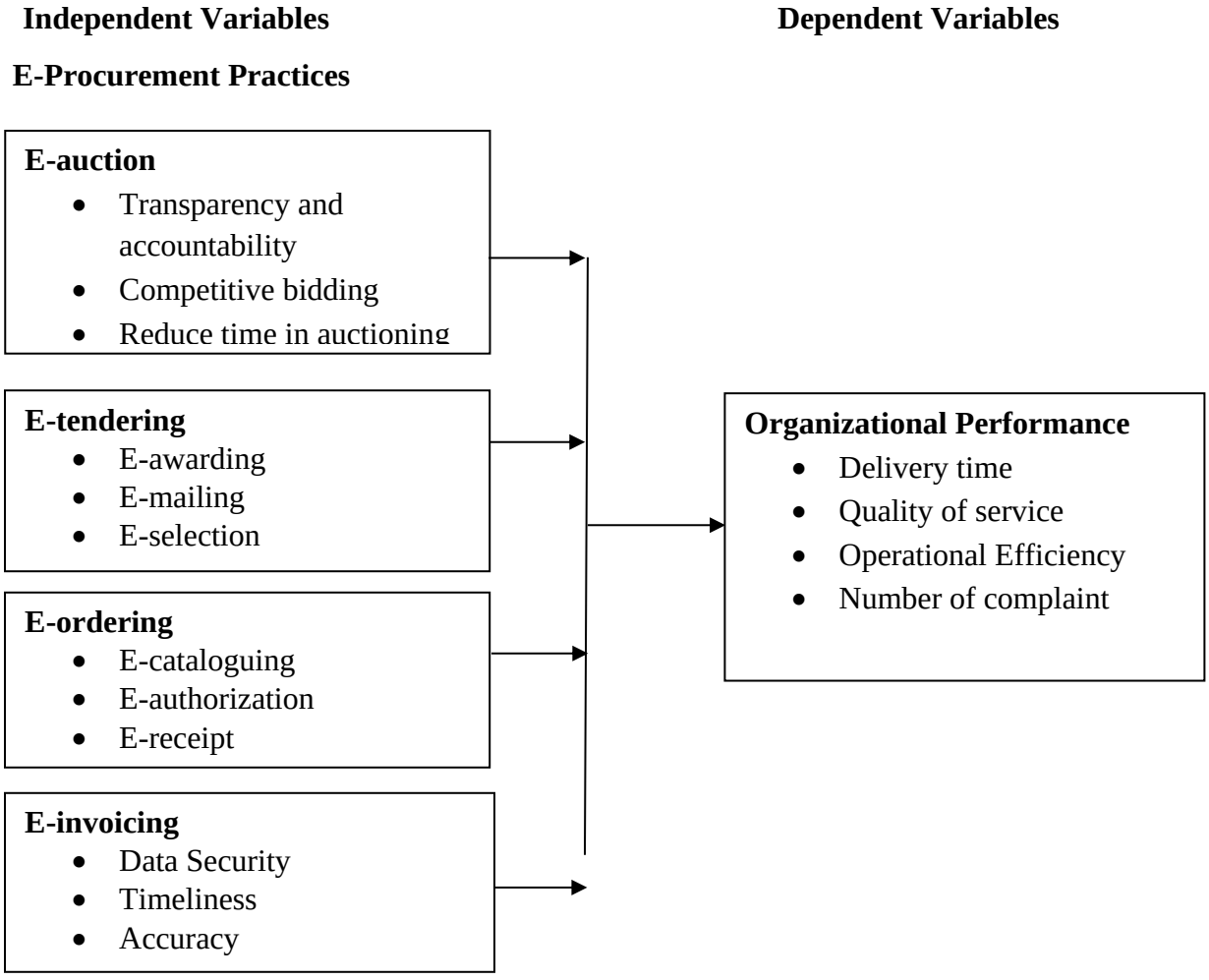

Figure 2.1 Conceptual Framework
Source: Author, 2022

RESEARCH METHODOLOGY

Research Design

The study used the descriptive research design. Rahi (2017) asserts that descriptive research addresses the who, what, where, when, and how of the problem. A descriptive research strategy, as opposed to other study designs that only look for persons with a particular trademark typically a small percentage of the overall population has the advantage of gathering data from a specific group at a specific period.

Target Population and Sampling Design

The study targeted 216 employees working in the contract management, procurement, inventory and assets departments (Kiambu County Government, 2019). They were the most knowledgeable about the subject of the study since they are straight tangled with the e-procurement operations at their corresponding departments.

Table 3.1 Target Population

Respondents category	**Population**	**Percentage**
Contract management	60	27.8%
Procurement planning	80	37.0%
Inventory and assets department	76	35.2%
Total	216	100

Source: Kiambu County Government, 2021

Sampling techniques provide a variety of options for reducing the amount of information that must be acquired by evaluating only information from a subset of cases or components rather than every single conceivable example or component. Sample size involves the specialist's selection of a more modest portrayal of the study population to achieve study goals (Omair, 2014). To determine sample size, the research utilized stratified random sampling. For this research, stratified random sampling is crucial since it ensures that each department has an equal chance of getting chosen. According to Abutabenjeh and Jaradat (2018), 30% of the population targeted is sufficient to draw conclusions if the population is less than 1000. The survey utilized a sample size of 30% of the target population. In this case, 65 employees were sampled. Table 3.2 displays the sample size.

Table 3.2 Sample Size

Participant's category	**Targeted Population**	**Sample Ratio**	**Sample Size**
Contract management	60	0.3	18
Procurement planning	80	0.3	24
Inventory and assets department	76	0.3	23
Total	**216**	**0.3**	**65**

Source: Kiambu County Government, 2021

Research Instrument

Both secondary and primary data were gathered. Semi-structured questionnaires were utilized by the researcher to gather primary data. The questionnaires are thought to be less intrusive, cost-effective, simple to evaluate, and familiar to the majority of individuals. The closed-ended and opened-ended inquiries were involved in the study. The researcher utilized the "drop and pick later" approach in data collection to give participants sufficient time to response the research's questions. The annual financial reports and audit reports provided the secondary data.

Validity and Reliability of Research Instrument

The extent to which a survey tool evaluates what it is projected to evaluate is refers to as the validity (Andrade, 2018). For content validity, the researcher gave the questionnaire to the supervisor and relevant knowledgeable personnel in matters of concepts under study making informed judgment as to whether the contents covered on questionnaire were credible and appropriate enough to enable the researcher achieve the set goals of the survey. The researcher modified the instrument as advised in order to improve it.

Reliability is referred to how much research instruments produce predictable outcomes after various preliminaries (Taherdoost, 2016). A pilot study was done to evaluate the survey's reliability. Cronbach's Alpha, which gauges internal steadiness by exploring whether specific items on a scale measure similarly, were used for reliability analysis. The upper limit of Alpha esteem was fixed at 0.7 by Cronbach (1951). Calculations should result in a coefficient of 0.7 or above, at which point the survey tools are regarded as dependable (Kothari, 2006).

Data Analysis and Presentation

Complete questionnaires were checked for completeness and uniformity. To interpret the data, descriptive analysis, notably the standard deviation and means were utilized. Also, the study utilized tables to display the findings. The data were analyzed using SPSS version 26, a statistical tool for social research. Pearson Correlation coefficient and Multiple linear regression model were used to determine the relationship between the independent and dependent variables

The multiple regression equation;

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

Where;

Y= Performance

B_0 - intercept coefficient

X_1 – E-auction

X_2– E-tendering

X_3– E-ordering

X_4– E-invoicing

β_1, β_2, β_3 and β_4 = regression coefficients

ε_i – Error

RESEARCH FINDINGS AND DISCUSSION

Descriptive Findings

The study utilized 5-likert scale (Strongly agree, Agree, Undecided, Disagree, Strongly Disagree) questionnaires where mean and standard deviation was derived.

E-auction

Table 4.1 Descriptive statistics for e-auction practices

Statements	n	Mean	Standard Deviation
E-auction improves efficiency in procurement process which involves the savings of time for sellers and buyers.	60	3.57	0.76
E-auction enables financial savings in the association.	60	3.68	0.82
E-auction improves transparency of the whole procurement process.	60	3.62	0.78
E-auction enables access to a superior supplier base.	60	3.51	0.89
E-auction lower transaction costs such as lowering ordering costs.	60	3.83	0.85
E-auction aids in decreasing the corruptive or unfair behavior.	60	3.74	0.65
Average scores		**3.66**	**0.79**

Source: Survey Data (2023)

As per the findings shown in Table 4.1, most participants agreed that e-auction affect the performance of the county government of Kiambu as indicated by an average mean score of 3.66 and standard deviation of 0.79. Also, the participants agreed that E-auction improves efficiency in procurement process which involves the savings of time for sellers and buyers (mean = 3.57; standard deviation = 0.76). The participants agreed that E-auction enables financial savings in the association (mean = 3.68; standard deviation = 0.82). The participants also agreed that E-auction improves transparency of the whole procurement process (mean = 3.62; standard deviation = 0.78). E-auction allows purchasing organizations to do business with suppliers who offer the best terms and the lowest price. This is upheld by the findings of a survey by Muthoka (2016) who established that e-auction allows suppliers to indicate interest, submit bids for contracts in the shortest amount of time feasible, encourage competition for the contract, and provide an effective, apparent procurement process for the organization and suppliers. E-auction is most likely the e-procurement instrument that is causing the most significant changes in buyer/supplier interactions (Sivertsen, 2016).

Furthermore, the results uncovered show that most participants agreed that E-auction enables access to a superior supplier base (mean = 3.51; standard deviation = 0.89). The participants agreed

that E-auction lower transaction costs such as lowering ordering costs (mean = 3.83; standard deviation = 0.85). Also, the participants agreed that E-auction aids in decreasing the corruptive or unfair behavior (mean = 3.74; standard deviation = 0.65). The utilization of e-auction has made buying and selling of goods and services easier. The findings concur with the outcomes of a survey by Waganda (2018) who uncovered that the numerous procurement officers agreed with the assertion that electronic auctions offer sellers and buyers a transparent environment. E-auctions are used as a negotiating tool, allowing multiple bidders to bid and sell to individual purchasers, while reverse auctions are utilized by organizations to reduce buying costs. This stimulates competition and lowers prices (Tassabehji, 2010).

E-tendering

Table 4.2 Descriptive statistics for e-tendering practices

Statements	n	Mean	Standard Deviation
Tendering is done electronically where shortlisted tenders are availed online	60	3.61	0.67
The county government of Kiambu has succeeded to fasten procurement process with the aid of e-tendering	60	3.42	0.69
E-tendering has enhanced supply of quality goods and services	60	3.57	0.78
The e-tendering time has been reduced as result of e-procurement	60	3.46	0.89
There exists online competitive bidding and sourcing process	60	3.68	0.85
Average score		**3.55**	**0.78**

Source: Survey Data (2023)

The results provided in Table 4.2 showed that most participants felt that e-tendering had an impact on Kiambu county's operational performance, as evidenced by an overall mean score of 3.55 and a standard deviation of 0.78. Additionally, the participants agreed that tendering is done electronically where shortlisted tenders are availed online (mean = 3.61; standard deviation = 0.67). The participants agreed that county government of Kiambu has succeeded to fasten procurement process with the aid of e-tendering (mean = 3.42; standard deviation = 0.69). Also, the participants agreed that E-tendering has enhanced supply of quality goods and services (mean = 3.57; standard deviation = 0.78). Electronic tender processing made it possible for numerous providers to submit their bids due to the fact that many potential suppliers saw the tender advertisements. The e-tendering process directs tendering through a fairly organized process, where one must finish one step before moving on to the next. The outcomes are supported by results of a survey by Wanyonyi and Moturi (2015) that demonstrated that the ordering and follow-up processes might be sped up by employing information technology. The procurement capability's viability is impacted by how well web-based correspondence, online delicate

promoting, and mechanized offering processes work since they give a faster, more successful interaction stream and productive data sharing.

Also, the results uncovered that most participants agreed that e-tendering time has been reduced as result of e-procurement (mean = 3.46; standard deviation = 0.89). Furthermore, the participants agreed that there exists online competitive bidding and sourcing process mean = 3.68; standard deviation = 0.85). E-tendering was linked to a shorter tender invitation procedure and resulted in more transparency in the tendering process. The results are corroborated by research by Munezero (2017), who found that e-tendering increases organization efficiency since it allows for the timely selection of the best contractor for the job. These results also corroborate those of Osir (2016), who claimed that state organizations had actualized e-tendering among other electronic administrations to make strides the effectiveness of their procurement exercises.

E-ordering

Table 4.3 Descriptive statistics for e-ordering practices

Statements	n	Mean	Standard Deviation
Utilization of e-ordering improves client order management	60	3.58	0.73
The uses of e-ordering minimizes corruption cases in the County Government of Kiambu	60	3.62	0.81
Ordering online is faster and easier to track than manual	60	3.55	0.63
E-ordering enhances timely order acquisitions and delivery	60	3.51	0.65
The uses of e-ordering enhances prompt approval of orders	60	3.64	0.69
Average score		**3.58**	**0.70**

Source: Survey Data (2023)

The findings showed in Table 4.3 established most participants agreed that e-ordering affect the performance of Kiambu County Government as shown by an average mean of 3.58 and standard deviation of 0.70. Further, the participants agreed that utilization of e-ordering improves client order management (mean = 3.58; standard deviation = 0.73). The participants agreed that uses of e-ordering minimizes corruption cases in the County Government of Kiambu (mean = 3.62; standard deviation = 0.81). Also, participants agreed that ordering online is faster and easier to track than manual (mean = 3.55; standard deviation = 0.63). Through e-ordering there is savings of cost and improvements in the way firms conduct business. The results agree with the findings of a survey by Lewis (2019) who established that utilization of e-ordering result to speed up order processing, save orders, and boost revenue. According to Fozia, Namusonge, and Shaelle (2016) employees look for new products on the market using technological means. Prequalification of suppliers is completed online, and references for new suppliers are also verified.

Furthermore, the findings revealed that most participants agreed that E-ordering enhances timely order acquisitions and delivery (mean = 3.51; standard deviation = 0.65). The participants agreed

that uses of e-ordering enhances prompt approval of orders (mean = 3.64; standard deviation = 0.69). The discoveries concurred with the results of a concentrate by Nyongesa and Moronge (2019) who uncovered that there was huge connection between electronic order processing practice and supply chain execution. The primary advantage of embracing electronic ordering is that the provider might have the option to transfer the data from the buy request promptly into their request the executives' framework in the event that they can get it electronically. This gives the benefits of forestalling information re-keying by deals tasks staff and lessening the chance of request blunders. Subsequently, the requesting system is accelerated, mistakes are diminished, and a reasonable administration and review trail are given by keeping the data electronic from start to finish.

E-invoicing

Table 4.4 Descriptive Statistics for e-invoicing practices

Statements	n	Mean	Standard Deviation
The e-invoicing has assisted in inhibiting the invoice errors thus accuracy	60	3.61	0.63
Through e-invoicing security of data is enhanced.	60	3.57	0.70
The e-invoicing has fasten timeliness settlements invoices by the suppliers.	60	3.37	0.75
The use of electronically compensation to the provider against services or goods rises audit trail	60	3.45	0.71
The processing of invoices electronically for payment preparation minimizes manual paper trail	60	3.61	0.64
Average score		**3.52**	**0.69**

Source: Survey Data (2023)

According to Table 4.4's results, the most respondents believed that e-invoicing had a considerable impact on Kiambu County Government performance, as evidenced by the average mean score of 3.52 and the standard deviation of 0.69. Furthermore, the participants agreed that e-invoicing has assisted in inhibiting the invoice errors thus accuracy (mean = 3.61; standard deviation = 0.63). The participants agreed that through e-invoicing security of data is enhanced (mean = 3.57; standard deviation = 0.70). Also, the participants agreed that e-invoicing has fasten timeliness settlements invoices by the suppliers (mean = 3.37; standard deviation = 0.75). The results inferred that e-invoicing played an important role on service delivery in Kiambu County Government. The results agree with the results of a survey by Chepkwony and Lagat (2016) who established that E-invoices give businesses the capability to handle customer and supplier information along the whole supply chain while also enhancing data privacy, source and receipt non-repudiation, and authentication.

Also, the outcomes presented in Table 4.24 revealed that most participants agreed that use of electronically pay to the provider against services or goods rises audit trail (mean = 3.61; standard = 0.64). The participants concurred that preparing payments online by processing invoices reduces the laborious paper trail (mean = 3.61; standard deviation = 0.64). A buyer can receive, review, and pay an electronic invoice that a supplier has sent using an electronic invoicing system. a lot of e-invoicing options. These findings are corroborated by research by Waganda (2018) who established Government agencies have been able to lower expenses, streamline the billing process, shorten payment deadlines, and improve data security by using electronic invoices.

Performance

Table 4.5 Descriptive Statistics for performance

Statements	n	Min	Max	Mean	Std Dev
There is reduction in transaction costs due to e-procurement practices	60	1.00	5.00	3.66	0.63
There is reduced paper work during procurement process	60	1.00	5.00	3.54	0.68
E-procurement practices result to accountability of the procurement process	60	1.00	5.00	3.59	0.72
Adoption of e-procurement has led to an improvement in client-supplier relationship	60	1.00	5.00	3.41	0.73
E-procurement process has helped quality supply of goods	60	1.00	5.00	3.65	0.67

Source: Survey Data (2023)

Table 4.5 shows the review discoveries on execution of Kiambu Area government, most respondents concurred that there is decrease in exchange costs because of e- procurement rehearses (mean = 3.66; standard deviation=0.63), there is diminished desk work during obtainment process (mean = 3.64; standard deviation = 0.68), E- procurement rehearses result to responsibility of the acquirement interaction (mean = 3.59; standard deviation = 0.72), reception of e- procurement has prompted an improvement in client-provider relationship (mean = 3.41; also, standard deviation = 0.73) and E- procurement process has helped quality stockpile of products (mean = 3.65; standard deviation = 0.67). By leveraging the e-procurement framework, government organizations can act as buyers and browse supplier catalogs to purchase goods and services, making it possible to establish a one-stop shop for public sector procurement. The results are consistent with a study by Munyao and Moronge (2018), which discovered that electronic ordering, electronic tendering, and electronic invoicing all enhance the performance of purchasing organizations.

Multiple Linear Regression Analysis

To explore the linkage between Kiambu County Government performance and e-procurement practices, the researcher utilized multiple linear regression analysis. The outcomes are displayed in the succeeding parts;

Table 4.61 Modal Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.894	.799	.746	.213	.799	2.47	4	56	.002

a. Predictors: (Constant), E-auction, E-tendering, E-ordering and E-invoicing
b. Dependent Variable: Performance of Kiambu County Government

Source: Field Data (2023)

The model summary is indicated by the results in Table 4.6 where R was 0.894, adjusted R square was 0.746, and R squared was 0.799 based on the results. With the R square of 0.799, the study's independent variables may account for 79.9% of performance in Kiambu County, Kenya. However, the model does not take into account other factors that account for 25.4% of the variation in performance. On the other hand, P = 0.002 denotes a significant positive correlation between the study's variables.

Table 4.7 ANOVA

Model	SS	df	MS	F	Significance
Regression	8.46	4	54.3	2.47	0.002
Residual	78.43	66	0.5		
Total	**86.89**	**185**			

Source: Survey Data (2023)

According to ANOVA Table 4.7, 5% significance level, or 0.05, was utilized. The study's P-Value was 0.002, below the 0.05 level of significance and F statistic (F = 2.47) making it statistically significant.

Table 4.8 Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.734	.168		3.920	.000
E-auction	.216	.061	.216	2.572	.002
E-tendering	.311	.072	.309	4.220	.002
E-ordering	.343	.070	.407	5.136	.004
E-invoicing	.321	.064	.368	4.453	.003

Source: Field Data

The researcher carried out a multiple regression analysis in order to determine the relationship between e-procurement practices and performance of Kiambu County, Kenya. As per the SPSS generated table, the equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon$) becomes:

$Y = 0.734 + 0.216 + 0.311 + 0.343 + 0.321X_4$

Where Y = Performance of Kiambu County Government

X_1 = E-auction

X_2 = E-tendering

X_3 = E-ordering

X_4 = E-invoicing

E-auction and Organisation Performance

The goal of the study was to ascertain how the Kiambu County Government's performance was impacted by the E-auction. According to Table 4.8, E-auction had a significant positive coefficient (=0.216, P-value = 0.002), which indicates that it improves Kiambu county's performance. This means that if there is improvement of e-auction practices, performance will also improve. These results support those of Waganda (2018), who found that the effectiveness of the organization's procurement function is influenced by the e-auctioning procedure. E-auctions offer a transparent setting for buyers and sellers. Also, Muthoka (2016) revealed that e-auction allows suppliers to indicate interest, submit bids for contracts in the shortest amount of time feasible, encourage competition for the contract, and provide an effective, apparent procurement process for the organization and suppliers

E-tendering and Organisation Performance

The survey aimed was to explore how E-tendering affected Kiambu County Government performance. According to Table 4.8, e-tendering had a significant positive coefficient (=0.311, P-value = 0.002), which indicates that it improves Kiambu county's performance. This implies that the county government's performance will increase if e-tendering procedures are improved. The

findings support those of Gathima and Njoroge (2018), who found that the use of electronic tendering had a positive and significant association with execution in the Nairobi City County Government at 0.307 and P =0.041< 0.05. E-bidding has also boosted competition in the tendering offer for the hospitals in Uasin Gishu County, according to Chegugu and Yusuf's 2017 research. E-tendering produced an inferential analysis result of =0.369; P 0.005. The adoption of electronic tendering improved the process's transparency.

E-ordering and Organisation Performance

The survey aimed was to explore how E-ordering affected Kiambu County Government performance. According to Table 4.8, E-ordering had a significant positive coefficient (=0.343, P-value = 0.004), which indicates that it improves Kiambu county's performance. The results are consistent with those of Ndei and Mutuku (2021), who found that e-ordering improves supply chain performance. As per the inferential analysis, the e-ordering had a = 0.453; P< 0.005. Njoki and Nelson (2022) assert that the ability to make purchase orders and receive goods and services acquired by the utilization of the internet technology considerably improves supply chain performance.

E-invoicing and Organisation Performance

The goal of the survey was to ascertain how E-invoicing affected Kiambu County Government performance. According to Table 4.8, E-invoicing has a significant positive coefficient (=0.321, P-value = 0.003), which indicates that it improves Kiambu county's performance. The survey findings agree with those of Mutunga and Makhamara (2020) who uncovered that e-invoicing significantly affects the execution of SMEs in Nairobi, Kenya. According to the inferential findings, =531, P=0.000. The results are consistent with Tiwari, Marak, Paul, and Deshpande (2023), which found that e-invoicing increased organizational performance and suggested organizing and putting in place processes to address all the drawbacks that impede e-procurement.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The e-auction positive significantly enhanced the performance of Kiambu County Government. E-auctions give the county government a way to contribute to a position of competitive advantage of suppliers. Through e-auctions, governments save a lot of time and money while also giving suppliers a chance to expand into new markets. The e-auctions enhanced more control over the service delivery and the entire sale process.

The research concludes that e-tendering improved the efficiency of the Kiambu County Government. The Kiambu County Government's e-offering systems, which incorporate sellers posting their offers electronically, giving delicate determinations and records web based, getting delicate responses electronically, and advising the overall public regarding tenders.

Also, the study concludes that Kiambu County's performance is strongly impacted by e-ordering. E-ordering expedites order processing, reduces paperwork and related costs, decreases human error, aids in keeping track of order due dates, and fosters partnerships with suppliers. E-ordering also increases efficiency and effectiveness, transparency, cost and time savings, order and customer management, and productivity.

Finally, the research concludes that e-invoicing affects significantly the performance of Kiambu County Government. E-invoicing enhances performance by facilitating an organization's smooth operation. Through effective archiving, documents may be more easily retrieved, payment cycles are shortened, saving time, account reconciliation is improved, compliance is increased thanks to security, error-free transactions, and waste is reduced.

Recommendations

The County governments should use electronic auctions because they allow suppliers to bid competitively, which lowers their bidding prices to an ideal level where the genuine market price is obtained. The ability of each bidding supplier to observe the bids of other suppliers allows them to adjust their bids in order to get the most competitive price, further enhancing competitive prices. Sharing information with all providers taking part in the electronic reverse auctions also makes the pricing offered by the suppliers more competitive.

The county government should improve accounting, recording, and reporting through appropriate invoicing mechanisms. Requisition, tendering, contract warding, and payment should all be included in the automated procurement process. Additionally, the county government should improve the delivery of public services by giving both the national and county governments timely, transparent, and accurate financial and accounting information.

The county government should embrace E-ordering, particularly for electronic processing of purchase orders. This reduces the amount of manual paperwork by using the electronic approval of purchases, which will save stationery costs. This will make information transmission quicker and improve buyer-supplier relationships. The supplier receives the purchase order electronically, allowing for quicker delivery of the items.

To decrease invoice errors and increase the accuracy of invoice information, suppliers' electronic invoicing needs to be improved. According to the study, electronic invoice approval will increase transparency by allowing management to monitor the status of the tendering process.

This research concentrated on effect of e-procurement practices on performance of Kiambu County, Kenya. However, a research can be done on other counties to enhance generalization of study findings. The results established that e-procurement practices do not account for 100%

performance of Kiambu County Government. Further research must be done on other new aspects influencing how well the Kiambu County Government performs.

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