
Relationship Between E-Tendering and Procurement Performance Among County Governments in Kenya

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Abstract: Public procurement involves all procurement activities in the public sector; procurement activities of all public entities. Public procurement has remained a topic of interest especially in the developing countries. In many instances, public procurement functions have been characterized by issues of transparency and accountability. E-procurement is one of the emerging trends in procurement. E-procurement is the use of computer technologies and the internet to conduct procurement operations. E procurement has attracted attention in public procurement especially because of its perceived ability to improve on accountability and transparency in public procurement functions. One aspect of E-Procurement is E-Tendering. This study aimed to examine the relationship between e-tendering and procurement performance of County Governments in Kenya. Data was collected in Kericho County. The study adopted a correlational research design. The target population for this study was employees of Kericho County while the sample frame was purposively selected to constitute 120 employees working in procurement, finance and accounts and IT departments of Kericho County. Stratified sampling was used to determine the sample size after while the sample elements were selected through simple random sampling. Data was collected by use of structured questionnaires that were issued by the researcher and collected later for analysis. Frequencies and percentages was used to describe the independent and dependent variable while correlation analysis was used to test the relationship between e-tendering and procurement performance. The results revealed that e-tendering is positively related with performance of supply chain function of County Governments in Kenya. The study therefore recommends that the Government come up with policies on adoption of e-tendering and provide critical resources and leadership in adoption of e-tendering. The researcher recommends that further studies be done to investigate the level of support the government gives to the county governments on adoption of e-tendering, to identify factors inhibiting adoption of e-tendering in public institutions and to identify critical factors of implementation of e-tendering.

Keywords: E-Tendering, Procurement Performance, County Governments

1. Introduction

E-procurement is the use of internet based information and communication technologies to carry out all functions of procurement including; search, sourcing, negotiation, ordering, receipt, and post-purchase review (Mose, Njihia and Magutu, 2013). According to Roma and McCue, (2012), e-procurement is the use of information technology to develop a procurement process that is responsive to changes in the environment.

A Garran (2005) point out that e-procurement in the public sector is driven by social, cultural and political factors. According to Aberdeen Group (2005), e-procurement is

associated with reduced transaction cost, improved process efficiency, increased contract compliance, reduced cycle times and reduced inventory costs. Mose, Njihia and Magutu, (2013) argues that implementation of e-procurement through electronic data interchange allows automated purchasing transactions. Roma and McCue, (2012) points out further that e-procurement is associated with operational and cost efficiency. It facilitates electronic documentation of the bidding process enhancing accountability and transparency thereby improving performance.

Implementation of e-procurement in public procurement requires resources and specialized skills. The implementing team must understand the public procurement policies and practices applicable. There must be a bench mark and

re-engineering process for the implementation process. It is important to build and maintain strong and lasting relationship with suppliers, buyers and other stakeholders (Muma *et al.*, 2014). In addition, since the process is associated with new changes, a well-coordinated change management systems and training programs must be put into place (Garran, 2005). IBM report of 2003 identified three areas of importance in implementing e-procurement. These are practices, processes and systems (Vaidya, Sajeev and Callender, 2006). Mose, Njihia and Magutu, (2013) argues that successful implementation of e-procurement requires user acceptance, information quality, trust, and risk perception, early supplier involvement, adequate and timely training, adoption of accepted best practices in the market, management involvement and support and continuous monitoring. Other factors that are critical in implementation of e-procurement include: good governance and capacity developments (United Nations, 2011).

United Nations (2011) proposed basic principles of implementing e-procurement. These principles include: e-procurement is a government exercise that goes beyond information, communication and technology aspects, e-procurement does not eliminate corruption but can deter corruption to a large extent, e procurement is a holistic opportunity to advance public financial systems related to procurement, e-procurement requires integration with financial systems, e-procurement requires strategies for each procurement function, implementation of e-procurement requires integration of on-line and off-line approaches and that e-procurement requires centralized and decentralized management system. In addition, Abardeen Group (2001) identified ten key requirements for successful implementation of e-procurement. These are; use of e-procurement technology to the overall procurement strategy, knowing how much is there to be spent on the strategy, having a plan to guide in the implementation process, benchmarking the implementation process, top management playing the leadership role to spearhead implementation, creating goodwill among employees to gather support for the program, designating a champion, ensuring supplier participation and putting into place continuous measuring process.

According to Koorn, Smith and Mueller (2001), cited by Vaidya, Sajeev and Callender (2006), there are two types of e procurement systems: seller e-procurement system and buyer e-procurement systems. Vaidya, Sajeev and Callender (2006), argue that implementation of these two systems; a workflow system integrated with an e-Procurement application that supports requisition to payment and the electronic catalogue that lists supplier's items and prices over the Internet. They further point out that commonly used e-procurement in the public procurement include: E-Tendering, E-Request for Quotations, E-Auctions, E-Catalogues, and E-Invoicing. Roma and Mc Cue, (2012) on the other hand asserted that tools such as: E-Notice, E-Auction, E-Catalogue, E-Dossier, E-Submission and E-Signatures are part and parcel of e-procurement. Most

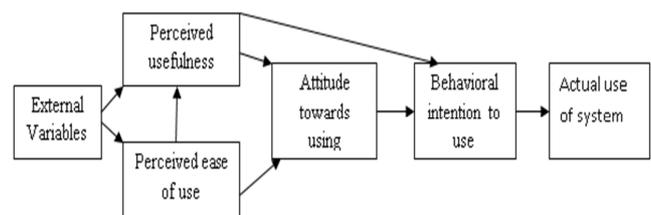
e-procurement solutions are developed to address one of the three primary areas of procurement operations such as indirect procurement, direct procurement and sourcing (Aberdeen Group, 2001). In addition to the above factors, implementation of the above process requires flexibility within the organization. Shirzad and Bell (2012) discussed organizational flexibility concerned with flexibility in operations regulations and logistics, strategic flexibility concerned with the flexibility of resources, markets, design and coordination, technical flexibility concerned with the new product development, technological advancement and change in business models and environmental flexibility incorporating buyer and user supplier requirements as well as industrial relations.

2. Literature Review

2.1. Technology Acceptance Theory

The theory of technology acceptance is one of the most popular theories in understanding adoption of computer technologies. Adoption of any innovation or especially information technology based requires investment in computer based tools to support decision making, planning communication. However, these systems may be risky.

Theory of technology is based on two assumptions; perceived usefulness of the system such as; improved performance, enhanced productivity, effectiveness and efficiency in operations etc. and the perceived ease of use of the new systems such as ease to learn, ease to use, ease to control and ease to remember. This theory brings an understanding that acceptance and use of new technology is a function of the users' feelings about the system and its perceived benefits.

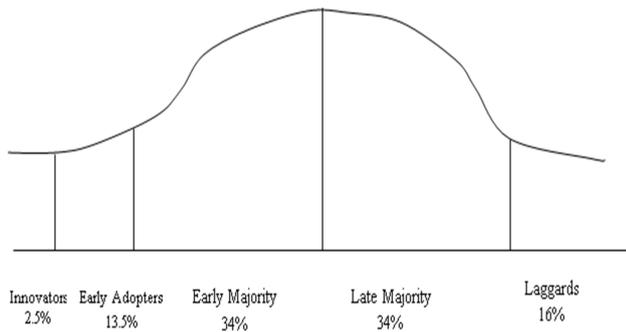


Source: Kamel (2004)

Figure 2.1. Technology Acceptance Framework.

2.2. Innovation Diffusion Theory

Innovation theory categorize adopters of innovation into five categories; innovators, individuals who want to be the first to try the innovation, Early Adopters, people who represent opinion leaders, Early Majority individuals who need to see evidence that the innovation works before they can adopt it, Late Majority, skeptical individuals who only adopts an innovation after it has been tried by the majority and Laggards, individuals who are very skeptical of change and are the hardest group to involve in the innovation process. The figure below shows the five categories.



Source: Boston University School of Public Health (2013)

Figure 2.2. Categories of adopters.

2.3. E-Tendering

Tendering is the major approach of awarding contracts for goods, works and services in the public sector. The general tendering process involves seven stages: the first stage is the pre-qualification and registration of potential suppliers. This stage is followed by public invitation for the interested suppliers to apply. Public invitation is followed by tender submission which is then followed by close of tender. Once tenders have been received, the tenders are evaluated and ranked based on pre-determined tender evaluation criteria which is then followed by award of tender (CRC Construction Innovation, 2006).

2.4. E-Tendering

E-tendering is associated with numerous benefits. The benefits include; improved process efficiency, reduced overhead costs, enhanced transparency and accountability in the procurement function, reduced ordering and holding costs, reduced paperwork, improved cash flow and reduced cost associated with credit control (CIPS, 2006). According to OGC (2009), e-tendering contributes to reduced tendering cycle times, enhances compliance to legal procedures and regulations, enhanced labor costs and time management, enhanced accuracy, transparency and integrity in the procurement processes (OGC, 2009).

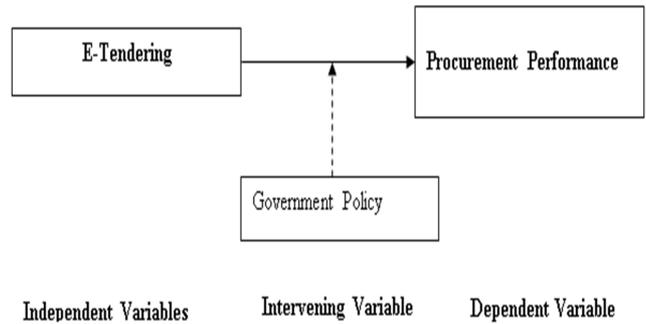
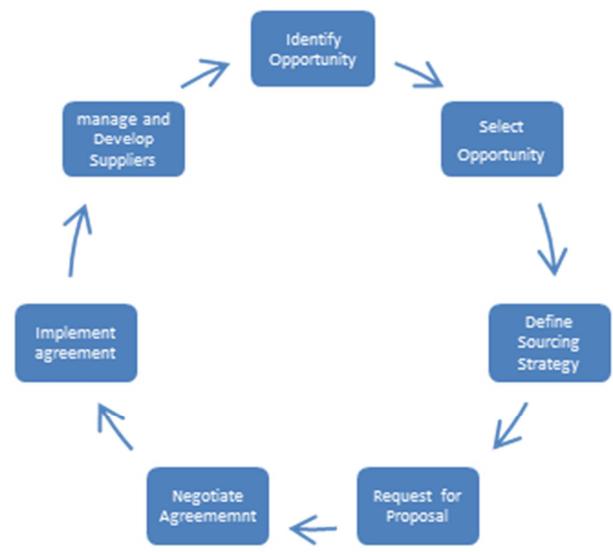


Figure 2.4. Conceptual Framework

2.5. Procurement Performance

Expert Group Meeting (2001) links procurement performance with transparency, efficiency and effectiveness. The indicators presented in table 2.1 were used in this study to measure Procurement performance.



Source: Best Practice Network (2004)

Figure 2.3. E-Sourcing Cycle.

Table 2.1. Procurement Performance Indicators.

Indicator	Description	Performance Category
Price Variance	Percentage price variance between contract unit price and international unit price for focus products	Cost
Contract Utilization	Percentage by value of purchases made under simple purchase orders, annual contracts, and multi-year contracts	Cost
Expiration Management	Percentage number of expired products	Quantity
Supplier Performance	Percentage of orders in compliance with contract criteria and Percentage of orders delivered on time	Timeliness
Procurement Cycle Time	Percentage of procurements completed (placed) within standard time guidelines	Timeliness
Payment Processing Time	Percentage of supplier payments made within the payment period called for in the contract	Timeliness
Procurement Cost	Ratio of annual procurement unit cost-to-value of annual purchases	Systems Productivity
Staff Training	Key training program components in place and number of staff who receive training annually	Quantity

3. Research Methodology

This study adopted correlational research design. It was a

case study survey. The researcher settled for a case study because of the wide distribution of the study population that would make data collection difficult, especially with the limited time available for the research. The study population

constituted all employees in the county governments. Since this was a case study, employees in Kericho County constituted the target population for the study. The sample frame for this study was determined purposively. All the 120 employees in the procurement finance and accounts and IT departments of Kericho County both at Management and non-management levels constituted the sample frame. Employees from these departments were purposively selected because they have direct link with procurement operations could give the required information.

The sample elements were then selected using simple random sampling. The following formula developed by Yamane (1967) was used.

$$n = N / (1 + N (e^2))$$

Where; n = the desired sample size
 e = probability of error (i.e., the desired precision, e.g., 0.05 for 95% confidence level).

N=the estimate of the population size.

Primary data was collected using structured questionnaires. Questionnaires were preferred because they are simple to administer, comprehensive and can be analyzed easily. The questionnaires were administered by the researcher to all the respondents. The respondents were given time to fill the

questionnaires after which they were collected for analysis. The collected data was first checked for completeness and comprehensibility. The data was then coded and analyzed using the SPSS version 21. Both descriptive analysis (mean, frequencies and standard deviation) and inferential analysis (correlation) were carried out. The descriptive analysis was used to explain the aspects of e-procurement and procurement performance while correlation analysis was used to test the relationship between e-procurement and procurement performance. The research findings were presented using tables accompanied with associated interpretation.

4. Findings, Conclusions and Recommendations

4.1. Findings on E-Tendering

The study sought to assess the level of E-Tendering adopted by the county government. The items used to measure this objective were each rated on a 5- point Lickert scale ranging from; 1 = strongly disagree to 5 = strongly disagree, and the findings summarized in Table 4.1.

Table 4.1. Findings on E-Tendering.

Statement	SA	A	N	D	SD
	Freq (%)				
E-tendering practice has enabled faster submissions of tender documents by prospective suppliers	49(61.3)	18(22.5)	10(12.5)	3(3.8)	0
E-tendering has reduced paper work during procurement process by encouraging keeping of software data.	20(25.0)	51(63.8)	9(11.3)	0	0
E-tendering has shortened the tender cycle period greatly	19(23.8)	44(55.0)	14(17.5)	3(3.8)	0
E-tendering has improved choice of suppliers by stating in advance the specification of tender performance	16(20)	56(70)	8(10.0)	0	0
E-tendering has greatly reduced costs associated with tendering process	22(27.5)	48(60.0)	10(12.5)	0	0
E tendering has made the process of procurement transparent	23(28.8)	47(58.8)	10(12.5)	0	0
The usage of e-procurement has made the process of tendering more accurate and efficient	19(23.8)	44(55.0)	14(17.5)	3(3.8)	0
E-tendering has made it possible to timely invite the public to submit tender documents	16(20)	56(70)	8(10.0)	0	0

From table 4.1, it was also established that that e-tendering practice has enabled faster submissions of tender documents by prospective suppliers because e-tendering had reduced paper work during procurement process by encouraging keeping of software data. As a result it had shortened the tender cycle period greatly as it improved the choice of suppliers by stating in advance the specification of tender performance and, thereby, greatly reducing the costs associated with tendering process. There was also a feeling that e-tendering had made the process of procurement transparent and has also made the process of tendering more accurate and efficient. The test of this hypothesis found that there was a significant association between E-Tendering and the Procurement Performance of county governments in Kenya, hence, suggesting that E-Tendering was crucial to the success of the Procurement Performance of county governments in Kenya.

4.2. Findings on Procurement Performance

The study sought to establish the status of the procurement performance in the county government. This was the dependent variable and was realized by asking the respondents to rate the procurement performance of their county government using statements describing the procurement performance indicators in their county government. Further, to fully describe the status of this variable, the study first assessed the supplier performance and procurement cycle and summarized the findings in Table 4.2.

The findings on table 4.2 imply that e-tendering had significantly improved the tendering process through its merits such as efficiency, transparency and cost effectiveness.

Table 4.2. Findings on Procurement Performance.

Statement	SA	A	N	D	SD
	Freq (%)				
There is improved product compliance with order placed	61(76.3)	19(23.8)	0	0	0
Reduced inbound lead time	34(42.5)	44(55.0)	2(2.5)	0	0
Order criteria, as specified in purchase order	48(60.0)	30(37.5)	2(2.5)	0	0
Timely submission of purchase requisitions by department for approval	36(45.0)	44(55.0)	0	0	0
Timely purchase requisition approval	33(41.3)	47(58.8)	0	0	0
Timely bidding process initiation and closure	38(47.5)	40(50.0)	2(2.5)	0	0
Timely bids evaluation and supplier selection	22(27.5)	48(60.0)	10(12.5)	0	0
Reduced staff number involved in procurement	10(12.5)	43(53.8)	17(21.3)	9(11.3)	1(1.3)
Increased procurement volumes processed	32(40.0)	38(47.5)	6(7.5)	4(5.0)	0
Reduced transportation costs	44(55.0)	32(40.0)	2(2.5)	2(2.5)	0
Reduced the quantity of goods that expire before usage	48(60.0)	30(37.5)	2(2.5)	0	0
Improved supplier adherence to expiration date requirements	22(27.5)	48(60.0)	10(12.5)	0	0
Transparent price information	6(7.5)	53(66.3)	21(26.3)	0	0
Improved supplier adherence to delivery dates	44(55.0)	32(40.0)	2(2.5)	2(2.5)	0
Increased staff trained per annum	38(47.5)	40(50.0)	2(2.5)	0	0
Timely training plans implementation	32(40.0)	38(47.5)	6(7.5)	4(5.0)	0
Clear job description and duties	48(60.0)	30(37.5)	2(2.5)	0	0

4.3. E-Tendering and Procurement Performance

Table 4.3. Correlation Between E-Tendering and Procurement Performance.

		Procurement Performance
E-Tendering	Pearson Correlation	.405**
	Sig. (2-tailed)	.000
	N	80

Correlation results gave and $r=0.405$ $p=0.000$ (<0.05), $\alpha=0.05$ implies significant positive relationship. This suggests that that E-Tendering is crucial to the success of the Procurement Performance of county governments in Kenya. These findings imply that e-tendering has remarkably improved the tendering process through its merits such as efficiency, transparency and cost effectiveness. The study suggests that future studies should be done to highlight change processes in the procurement systems, clearly delineating the drivers of change in institutions and the responses from the staff. This would enrich the current level of understanding of the best practices as far as change implementation in the procurement processes.

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