

# **ANALYSIS OF USE OF E-PROCUREMENT ON PERFORMANCE OF THE PROCUREMENT FUNCTIONS OF COUNTY GOVERNMENTS IN KENYA**

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## **Abstract**

*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. It uses computer technologies and the internet to conduct procurement operations. This study aimed at examining the relationship between e-procurement and procurement performance of County Governments in Kenya. Data was collected in Kericho County. This study adopted a correlational research design. The sample frame was purposively selected to constitute 120 employees working in procurement, finance and accounts and IT departments of Kericho County using stratified random sampling. Data was collected by use of structured questionnaires. Both descriptive analysis as well as inferential analysis (correlation analysis) was used. The results revealed that e-procurement 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-procurement practices and provide critical resources and leadership in adoption of e-procurement.*

**Keywords:** *Procurement, E-Procurement, Procurement performance, County Government, Enterprise resource planning, Kenya*

## INTRODUCTION

E-Procurement is considered one of the major reforms in public procurement. Corsi (2006) defined e-procurement as the use of electronic methods over the internet to conduct procurement functions: identification of requirement, tendering process, payment and contract management. The rationale behind adoption of e-procurement is to enhance efficiency and effectiveness and transparency and accountability in public procurement.

Globally, e-procurement has gained popularity especially with the advent of technology. In United States of America for instance, rapid development of e-procurement was reported in early 2000 just before the recession. By the end of the same year, it was reported that all state functions were maintaining web presence in at least some stage of their procurement processes with some participating in online bidding (Reddick, 2004). In Malaysia, the government at some point issued a statement calling for all suppliers to use the e-procurement system (Yossuf et al., 2011). Kaliannan et al. (2009) pointed out that Malaysian public sector are going through a rapid change especially as far as adoption of technology is concerned. Adoption of e-government and particularly e-procurement is inevitable for the government. A review conducted by Commonwealth of Australia indicates that the National governments of Italy, New Zealand, Scotland, New South Wales and Western Australia in 2005 revealed that these countries were already using e-procurement system for public procurement activities.

In Africa, the concept of e-procurement is just gaining popularity especially in the public sector. To deal with the problems of lack of accountability and transparency in procurement activities in the public sector, Most African countries have resorted to legal reforms and adoption of procurement. Tanzania for instance put into place e-procurement systems to allow e-sharing, e-advertisement, e-submission, e-evaluation, e-contacting, e-payment, e-communication and e-checking and monitoring to ensure all public procurement activities are conducted online (Sijaona, 2010).

In Kenya, the government actively got involved in adoption of e-procurement when the Jubilee government came into power. Since then there has been a lot of pressure and reforms to ensure all public procurement functions are conducted online. The Kenyan government made it mandatory for procurement of all public goods, works and services to be procured through online platforms. For County governments in particular, there is a directive for all procurement and finance operations to be conducted online. For instance, the government introduced integrated financial management information system (IFMIS) that is mandatory for all the 47 counties. IFMIS was introduced to improve governance by providing real time financial information and effectively programs, formulate budget budgets. It also enhances transparency and accountability and acts as a deterrent to corruption and fraud (USIAD, 2008).

Implementation of e-procurement is an elaborate process and requires transformation and restructuring of government procurement structures (Commonwealth of Australia, 2005). The process requires electronic systems for: demand estimation, budget definition, needs notification, sourcing, contracting and ordering and supply monitoring. According to Hunja (2014), e-procurement is associated with increased efficiency, lower transactional costs, reduced corruption and enhanced control and monitoring of public procurement process. Corsi (2006) on the other hand pointed out that e-procurement can lead to improved labor productivity.

As Corsi (2006) pointed out, while e-procurement is associated with benefits to the purchasing and supplying organizations, its implementation comes with a number of challenges. He categorizes these challenges into organizational and economic-legal challenges. Organizational challenges include: restructuring difficulties and resistance to change while economic-legal challenges include: regulatory framework, technological requirement, capital requirement and the general education level of the employees. E-procurement activities include: Enterprise Resource Planning (ERP), E-Maintenance, Repair and Operations (E-MRO), E-Sourcing, E-Tendering, E-Reverse auctioning, E-Informing and E-Market sites (Snow, 2013).

## **E-Procurement**

Roma and McCue, (2012) defined e-procurement as the use of information technology to develop a procurement process that is responsive to changes in the environment. The concept of e-procurement is adopted by literally all industries and all kinds of organizations. Specifically, in the public sector, e-procurement is driven by social, cultural and political factors Garran (2005). Implementation of e-procurement in public procurement requires resources and specialized skills. In addition, the process requires a well-coordinated change management systems and training program (Garran, 2005). It is also important to put into place practices, processes and systems for the implementation of e-procurement (Vaidya, Sajeew and Callender, 2006). Other factors that are critical in implementation of e-procurement include: good governance and capacity developments (United Nations, 2011).

Koorn, Smith and Mueller (2001), cited by Vaidya, Sajeew and Callender (2006), discussed two types of e procurement systems: seller e-procurement system and buyer e-procurement systems. Implementation of these two systems require 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 (Vaidya, Sajeew and Callender, 2006). According to Aberdeen Group (2001), 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. Other organizations adopt e-procurement to enhance organizational flexibility, strategic flexibility, technical flexibility and environmental flexibility (Shirzad and Bell, 2012). The commonly adopted e-procurement practices used in the public procurement includes: E-Tendering, E-Request for Quotations, E-Auctions, E-Catalogues, and E-Invoicing (Vaidya, Sajeew and Callender, 2006). According to Roma and McCue (2012), tools such as E-Notice, E-Auction, E-Catalogue, E-Dossier, E-Submission and E-Signatures are part and parcel of e-procurement. In this study, Enterprise Resource planning (ERP); an information system package that integrates information and processes across organizational functions (Brazel and Dang, 2008), E-maintenance; maintenance managed through computer over the internet (Levrat and Lund, 2003). E-tendering, tendering through online platforms (Garran, 2005) and E-Sourcing (online sourcing) were considered in this study.

### **Procurement Performance**

The concept of procurement performance has existed from as early as 1930s. Since then, attention from procurement practitioners, agencies and researchers has grown on the concept. While some scholars define procurement performance as a products of transparency, efficiency and effectiveness (Expert Group Meeting, 2001), others considers it as function of flexibility and enhanced effectiveness and efficiency of the procurement functions (Garran, 2005). USAID come up with indicators that can be used to measure procurement performance. Such indicators include: price variance, contract utilization, materials expiration management, supplier performance, procurement cycle time, payment processing time, emergency procurement, procurement cost, transparent tendering, staff training and transparent price information (USAID, 2013)

### **E-procurement and Procurement Performance**

E-procurement is associated with reduced transaction cost, improved process efficiency, increased contract compliance, reduced cycle times and reduced inventory costs (Aberdeen Group, 2005) and improved operational and cost efficiency (Roma and McCue, 2012) According to Mose, Njihia and Magutu, (2013) e-procurement leads to improved procurement performance. It facilitates electronic documentation of the bidding process enhancing accountability and transparency thereby improving procurement performance. Similarly, Abarden Group (2001) points out that e-procurement leads to improved satisfaction of customer demands, improved contract compliance, enhanced supply chain capacity, reduced inventory costs and improved inventory management. Adoption of E-procurement may lead to improved supplier and customer relations and enhance achievement of strategic procurement goals

leading to enhanced procurement performance (Martinez, 2008). In this study, the researcher was interested in investigating the relationship between e-procurement and procurement performance with specific attention to procurement functions of the County governments in Kenya.

### **Statement of the Problem**

According to Vaidya, Sajeev and Callender (2006), while public procurement is one of the core functions of the government, it had been and continues to be neglected by academicians and researchers. This had created a knowledge gap making it a challenge for governmental entities, policy-makers, and public procurement professionals to make decisions relating to adoption of new technologies and emerging procurement trends. E-Procurement is one of the reforms that have been adopted by the government of Kenya to enhance public procurement operations. In ideal conditions, adoption of e-procurement is expected to bring sanity in the procurement operations, reduce costs and enhance efficiency. For many organizations, including public organizations, the objectives of adoption of e-procurement include: enhance efficiency, improved accountability and transparency and reduced costs. However, many organizations adopt e-procurement strategies without clear understanding on what to expect. To understand the concept of e-procurement and the associated benefits, a number of studies had been done. For instance, studies have been done on implementation of e-procurement, challenges of implementation of e-procurement and benefits of e procurement. Studies had also related e procurement with other variables like operational and overall organizational performance. A few studies had related e-procurement with procurement performance while none had studied such relationship in the county governments. Since the adoption of devolved system of government in Kenya in 2013, Kenyan public procurement has been devolved. Just like the national government, the county governments are implementing e-procurement. Since no study had been done to relate e-procurement and procurement performance of county governments, there existed a knowledge gap as to the relationship between e-procurement and procurement performance among county governments. Such gaps needed to be filled through research. This study intended to bridge this gap by investigating the effect of e procurement on procurement performance of county governments.

### **Objective of the study**

To determine the relationship between Enterprise Resource Planning and Procurement Performance of county governments in Kenya

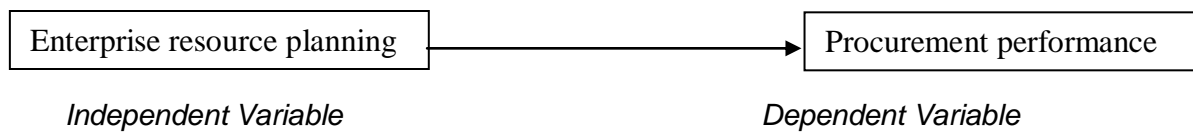
## Hypothesis of the study

**Ho<sub>1</sub>:** Enterprise Resource Planning does not significantly affect Procurement Performance of county governments in Kenya

## Conceptual framework

This study had a conceptual framework consisting of an independent variable and a dependent variable. Enterprise resource planning was conceptualized as the independent variable while procurement performance was the dependent variable.

Figure 1: Conceptual framework



## LITERATURE REVIEW

### Theoretical review

This study was guided by three theories; Disruptive Innovation Theory, Innovation Diffusion Theory and Technology Acceptance Theory. These theories enhance understanding of innovative strategies like e-procurement.

### Disruptive Innovation Theory

Barahona and Elizondo (2012) discussed the theory of disruptive innovation. This theory points out that e-procurement is an innovation. As such it requires continual improvement. Because of such improvements, it disrupts the normal procurement operations and processes. The theory of disruptive innovation is characterized by: small and costly client base and non-attractiveness at the initial stages of implementation, some level of acceptance as the system is implemented, new competition as innovation continues and continuous quality improvement to improve adaptability to user and stakeholders needs.

Disruptive innovations require critical resources, processes and values. Critical resources include resources supporting the normal business activities such as; People, technologies, product designs, brands, customer and supplier relationships, relationship management with its clients and suppliers and marketing activities. Critical processes include decision making protocols and coordination patterns that supports operations of an existing business operations. In addition, organizational cultural values, belief system and assumptions

are also critical (Barahona & Elizondo, 2012). The theory of disruptive innovation recognizes the fact that public organizations and systems are less flexible. Therefore, the adoption of e-procurement strategies requires a strategic and proactive approach so as to build the system within the existing structures rather than adoption of completely new systems. Adequate preparation in terms of the right technology, leadership to foster change process, training of the employees and awareness campaign among users is critical. It is important to note that sometimes disruptive innovations may only work in the short run.

### **Innovation Diffusion Theory**

Innovation diffusion theory was proposed by Rogers (1962). The theory presents that innovation is a process aimed to improve economic development. According to innovation diffusion theory, innovation is defined as an idea perceived as new by individuals. OECD (1997) cited by Andreanne and Swaminathan (2007) defined innovation as 'all the scientific, technological, organizational, financial, and commercial activities necessary to create, implement, and market new or improved products or processes'. Innovation theory brings on board four important elements'. The first element is innovation that puts attention on the ability to come up with more efficient and better ways of doing things.

This 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.

According to innovation theory, rate of adoption of innovative strategies can be looked at in terms of; relative advantage given to the organization, compatibility, complexity, trial-ability of the new strategies and observability to the stakeholders within the social system. The second factor is communication that lays information and creating and sharing information relating to innovative initiatives in the organization. The third element is time that considers the duration involved in the innovation-decision process. The last element is the social context of the new systems (Rogers, 1997). Diffusion of innovation strategies requires evolution and reinvention of products and people so that they are able to perform better (Les Robinson, 2009). The concepts in this theory are very relevant to this study. They help build on the study and enable the researcher understand the expected relationship between the variables.

While innovation diffusion theory brings understanding of the innovation process, it has a number of limitations. The theory does not foster a participatory approach. It is therefore only



able to work best with adoption of behaviors. Lastly, the theory does not take into account an organization's resources and social support in adoption of new methods.

### **Technology Acceptance Theory**

Technology acceptance model was introduced by Devis (1986). According to this theory, emerging technologies cannot improve organizational effectiveness and performance if the change has not been accepted by the users (Davis, 1986). 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. It is therefore very critical that the systems are specified on organizational preference and logic. It is also necessary to understand that people may resist technological changes. There must be an effort to understand why people resist changes and the possible ways through which such issues can be resolved. Appropriate organizational culture must be inculcated; the change must be adopted in an incremental way accompanied by communication. Everyone involved must be informed on their roles and empowered to perform the respective roles (Kamel, 2014).

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.

### **Empirical Literature Review**

Vaidya, Sajeev and Callender (2006) conducted a study on Critical Factors that Influence e-procurement Implementation Success in the Public Sector. They found out that despite the efforts put by the governments through reforms towards adoption of e-procurement, adoption of e-procurement still remains a major challenge for many procurement functions. The findings further revealed that successful implementation of e-procurement established systems and feedback mechanism. They associated e-procurement with improved procurement performance. Findings of study done by Roma and McCue (2012) on e-procurement revealed that e-procurement facilitates documentation of the bidding process which in turn enhances transparency and accountancy especially in public procurement. The research further revealed that e-procurement is associated with improved efficiency and enhanced procurement



operations. Other benefits of e-procurement include: increased customer satisfaction, improved professionalism in the procurement functions improving public perceptions the procurement function.

Abarden Group (2001) found out that e-procurement solutions leads to improved satisfaction of customer demands, improved contract compliance, enhanced supply chain capacity, reduced inventory costs and improved inventory management. The group identified the keys to e-procurement success. They pointed out that e-procurement should not be treated as a strategy, the organization must know what is spent on, the organization must have a plan, the implementation of e-procurement begin by benchmarking, the implementation of e-procurement must be led from the top, the implementation of e-procurement must be supported by other functional areas.

The findings of Brazel and Dang (2008) showed that implementation of ERP enhances flexibility which translates to improved earning management. A part from flexibility, ERP systems enhance management accounting and decision making that in turn enhances management's ability to manage accruals and other factors that may constrain organizational abilities. She and Thuraisingham (2007) in their study on security for Enterprise Resource Planning Systems established that e-procurement enhances security of management data which may enhance procurement performance. The above finding is in agreement with the findings of Martinez (2008) on Procurement Goals, ERP, and Supplier Coordination in the Context of Competition and Global Environment that ERP systems improve customer delivery and enable collaboration with suppliers and customers. Improved supplier and customer relations and enhance achievement of procurements strategic goals. Nah and Santiago (2006) in his study on critical Success Factors for Enterprise Resource Planning Implementation and Upgrade revealed that implementation of ERP requires critical factors such as: business plan and direction, change management, communication, appropriate technical skills, project and implementation management, top management commitment and leadership and systems management.

A research conducted by United Nations in 2011 on E-Procurement: Towards Transparency and Efficiency in Public Service Delivery revealed that e-tendering enabled federal government save over six million dollars by outsourcing the manual duplication and distribution documents. The study showed that implementation of e-procurement itself is not a guarantee for success in the procurement operations. For this system to succeed there is need for regulations and policies if the system is to succeed. The study also noted that a number of e-procurement programs fail because of poor technology and lack of leadership. Other factors that lead to such failures include: lack of awareness, resistance to change, poor coordination of

functions and ineffective implementation programs. Berlin (2006) in his study on The Impact of E-Procurement on the Number of Suppliers: Where to Move to reported that a lot of empirical literature already exists confirming that e-procurement leads to increased number of suppliers. This study also revealed that different organizations adopt different online strategies for their procurement functions.

Lewis (2004) conducted a study on Essentials of e-Sourcing: A Practical Guide for Managing the RFX Process in an “E” Environment. The study revealed that e-sourcing can be used as a tool to reduce process time, generate sourcing savings and to drive incremental revenues. He further found out that implementation of e-sourcing starts with selection of an e-tool to complement an organizational strengths, followed by change management and training of the staff and other stakeholders where possible. Similarly, Vaidya and Callender (2006) conducted a study on the critical factors that influence successful implementation of e-procurement in the public sector and identified end user uptake and training, supplier adoption, system integration, security and authentication, re-engineering process, performance measurement, top management performance, change management program and communication systems as the critical factors that determine the success of implementation of e-procurement.

## **METHODOLOGY**

### **Research design**

This study adopted correlational research design. A research design functions as the research blue print for measurement and analysis of data. Kothari (2004) describe a research design as a plan and a structure of investigation conceive to find answers to research questions. The study adopted a case study approach for data collection.

### **The population and Sample**

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. 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. Sample size for this research was determined using stratified sampling. The sample elements were then selected using simple random sampling. Yamane (1967) was used in calculation of the sample size. A sample of 108 persons was obtained.

## The data

The collected data was first checked for completeness and comprehensibility. The data was then coded and analyzed using the SPSS version 21. Out of the 108 questionnaires that were issued among the various manufacturing firms, 80 were returned and were useable for the study accounting for 74 % response rate. 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.

## ANALYSIS AND FINDINGS

### Enterprise Resource Planning (ERP)

Enterprise Resource Pricing (ERP) has been identified as one of the ways of enhancing procurement performance in many organizations including the public sector. Therefore, the present study sought to determine the extent to which Enterprise Resource Planning (ERP) was being used in their county to improve procurement performance All the measures were on a five point Likert Scale where; 1=strongly disagree, 2= Disagree, 3=Not sure, 4=Agree, 5=strongly agree. These results are as summarized in Table 1.

Table 1: Purchasing Function and Inbound Logistics

Statement	SA Freq(%)	A Freq(%)	N Freq(%)	D Freq(%)	SD Freq(%)
The use of ERP has enabled the county government to check on most current prices of different supplies	61(76.3)	19(23.8)	0	0	0
The use of ERP has enabled the county government to order for supplies on time	34(42.5)	44(55.0)	2(2.5)	0	0
ERP platform has ensured timely contacting of suppliers in case urgent order requirements	48(60.0)	30(37.5)	2(2.5)	0	0
The implementation of ERP has also made it easy to evaluate different suppliers offering in terms of prices and quality	36(45.0)	44(55.0)	0	0	0
ERP has enabled electronic documentation of the bidding process enhancing accountability	33(41.3)	47(58.8)	0	0	0

ERP platform has ensured integration between Procurement department and other departments	38(47.5)	40(50.0)	2(2.5)	0	0
ERP has enabled the county government to enquire stages of order processing	10(12.5)	43(53.8)	17(21.3)	9(11.3)	1(1.3)
Usage of ERP has made it easy for suppliers to identify when to deliver products to the county Government	32(40.0)	38(47.5)	6(7.5)	4(5.0)	0
Implementation of ERP system has reduced inbound lead time considerably	44(55.0)	32(40.0)	2(2.5)	2(2.5)	0
Usage of ERP has enabled suppliers to provide information to the county government about their offerings	22(27.5)	42(52.5)	9(11.3)	7(8.8)	0
ERP has improved collaboration between the county Government and its suppliers	13(16.3)	63(78.8)	4(5.0)	0	0

The findings in Table 1 indicate that the use of ERP has enabled the county government to check on most current prices of different supplies (76.3%). This also enabled it to order for supplies on time (55%). ERP platform had also ensured timely contacting of suppliers in case urgent order requirements (60%) The implementation of ERP had also made it easy to evaluate different suppliers offering in terms of prices and quality (55%). The results also suggest that ERP has enabled electronic documentation of the bidding process enhancing accountability (58.8%). The ERP platform has ensured integration between the procurement department and other departments (50%). It is also evident from the findings that ERP has enabled the county government to enquire stages of order processing (53.8%) and the usage of ERP has made it easy for suppliers to identify when to deliver products to the county government (47.5%). Implementation of ERP system had reduced inbound lead time considerably (55%) and usage of ERP had enabled suppliers to provide information to the county government about their offerings (52.5%). ERP has improved collaboration between the county government and its suppliers (78.8%).

Still on this objective, it was important to establish how County Government Operations and Outbound Logistics of the County were affected by the ERP. The findings on this are given in Table 2.

Table 2: County Government Operations and Outbound Logistics of the County

Statement	SA Freq (%)	A Freq(%)	N Freq (%)	D Freq (%)	SD Freq (%)
Use of ERP has enabled timely requisition of materials by the department in need of them from the central store	49 (61.3)	18 (22.5)	10 (12.5)	3 (3.8)	0
Implementation of ERP system has improved inventory usage and control in the county government	20(25.0)	51(63.8)	9(11.3)	0	0
ERP usage has enabled easy costing of materials in the central store of the county government	19(23.8)	44(55.0)	14(17.5)	3(3.8)	0
Using ERP has made it possible to have up to date inventory record keeping	16(20)	56(70)	8(10.0)	0	0
ERP system has enabled a considerable improvement in payment processing	22(27.5)	48(60.0)	10(12.5)	0	0
Usage of ERP has greatly improved inter departmental coordination in the county government	23(28.8)	47(58.8)	10(12.5)	0	0
ERP system has reduced clients service time greatly	32(40.0)	38(47.5)	6(7.5)	4(5.0)	0
ERP has enabled the county government to receive timely feedback from the citizens on performance of the county government	44(55.0)	32(40.0)	2(2.5)	2(2.5)	0
Usage of ERP has ensured improved efficiency of monitoring of the county ongoing projects	13(16.3)	63(78.8)	4(5.0)	0	0
ERP has been able to reduce ordering cost.	32(40.0)	39(48.8)	4(5.0)	5(6.3)	0

The results in Table 2 suggest that the use of ERP had enabled timely requisition of materials by the department in need of them from the central store (61.3%). Implementation of ERP system has improved inventory usage and control in the county government (63.8%). The results also show that ERP usage had enabled easy costing of materials in the central store of the county government (55%), in essence, using ERP had made it possible to have up to date inventory record keeping in the departments (70%). ERP system has enabled a considerable improvement in payment processing (60%). Opinion on whether usage of ERP had greatly

improved inter departmental coordination in the county government was agreed upon by majority (58.8%) of the respondents. Similarly, it was evident that ERP had enabled improved information sharing among the ministries in the county government (47.5%) and had reduced clients service time greatly (55%). ERP has enabled the county government to receive timely feedback from the citizens on performance of the county government (78.8%). Usage of ERP has ensured improved efficiency of monitoring of the county ongoing projects ERP has been able to reduce ordering cost (48.8%).

### Procurement Performance

Finally, 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 3.

Table 3: Suppliers Performance and Procurement Cycle

Statement	SA Freq (%)	A Freq (%)	N Freq (%)	D Freq (%)	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

As indicated by the findings in Table 3, there is improved product compliance with order placed (76.3%) resulting from the e-procurement instituted in the organization. This has led to reduced inbound lead time (55%), improved order criteria as specified in purchase order (60%) and enhanced on time Purchase order delivery schedules (55%). The findings also reveal that the procurement departments were currently experiencing timely submission of purchase

requisitions by department for approval (55%), timely purchase requisition approval (58.8%) and timely bidding process initiation and closure (50%). The new system had also resulted in timely bids evaluation and supplier selection (60%) and timely date purchase order/contract issued to vendor and order placed

The study also sought to describe the procurement performance in terms of Procurement Cost, Expiration Management and Staff Training. The responses on these items were rated on a five point Likert scale ranging from; 1 = strongly disagree to 5 = strongly agree and the findings summarized in table below.

Table 4: Procurement Cost, Expiration Management and Staff Training

Statement	SA Freq(%)	A Freq(%)	N Freq(%)	D Freq(%)	SD Freq(%)
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

The findings in Table 4 indicate that the e-system of procurement had resulted in reduced staff number involved in procurement (53.8%), increased procurement volumes processed (47.5%), reduced transportation costs (55%) and also reduced the quantity of goods that expire before usage (60%). Consequently, it improved supplier adherence to expiration date requirements (60%) and led to transparent price information (66.3%) and improved supplier adherence to



delivery dates (55%). The findings also indicated that the e-procurement system had increased staff trained per annum (50%) meaning that more funds and time could now be allocated to staff training. It had also led to timely training plans implementation (47.5%) and clear job description and duties (60%) which serve as motivational factors for the staff.

### Correlation analysis

In this subsection the correlation analysis using the Pearson Product Moment Correlation was made to first determine the degree of multi-collinearity between the independent variables and also show the degree of their association with the dependent variable separately and the resulting correlation matrix given in Table 4.9. The results show that the level of correlation between the independent and dependent variable was higher than the other zero order values in the correlations between the independent variables. This indicates that although multi-collinearity existed among the independent variables it could not significantly affect the findings; hence, they could be ruled out.

Table 5: effect of Enterprise resource planning on procurement performance

Enterprise Resource Planning		
Procurement Performance	Pearson Correlation	.350*
	Sig. (2-tailed)	.007
	N	80

\*. Correlation is significant at the 0.05 level (2 tailed)

The table indicated that Enterprise Resource Planning had a moderate positive significant correlation with procurement performance ( $r=0.350$ ,  $p=0.007$ ,  $\alpha = 0.05$ ). The researcher observed that procurement performance is highly dependent on the enterprise resource planning. This findings provided a valid ground for the rejection of the null hypothesis (**H<sub>0</sub>**: Enterprise Resource Planning does not significantly affect Procurement Performance of county governments in Kenya). Therefore, enterprise resource planning needs to be emphasized at every procurement performance in the county governments.

### CONCLUSION

Based on the foregoing findings of this study, it is evident that implementation of ERP system has improved inventory usage and control in the county government and enabled easy costing of materials in the central store of the county government making it possible to have up to date inventory record keeping in the departments. This confirmed that Enterprise Resource Planning

was indeed a significant predictor of change Procurement Performance implying that Enterprise Resource Planning needs to be emphasized at every procurement cycle in order to have better Procurement Performance in the county governments.

## RECOMMENDATIONS

From the above conclusions the researcher recommended that county governments should emphasize enterprise resource planning needs at every procurement cycle in order to have better procurement performance. The researcher further recommended 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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