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**EFFECT OF INFORMATION COMMUNICATION TECHNOLOGY ADOPTION ON  
PUBLIC PROCUREMENT PERFORMANCE IN STATE CORPORATIONS IN KENYA:  
A CASE OF RURAL ELECTRIFICATION AUTHORITY.**

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## **ABSTRACT**

As part of the Government's initiative to reform the Public Finance Management (PFM) system and restore the public confidence in the use of public funds, the government of Kenya introduced an Integrated Financial Management Information System (IFMIS), e-procurement module that would enhance efficiency in planning, budgeting, procurement, expenditure management and reporting in the National and County Governments. The purpose of this study is to determine the effect of information communication technology, procurement cost reduction, ICT integration, supplier relationship management and organization policy on the public procurement performance of state Corporations in Kenya. The study used cross-sectional research design. The population of interest of this study will be the Rural Electrification Authority staff. Both primary and secondary data was collected. The data collected was analyzed using descriptive statistics and inferential statistics. The target population for the study was 450 respondents drawn from procurement and other departments from Rural Electrification Authority. Stratified sampling method was employed to select a representative sample which yielded 45 members of the staff from a population of 450, Semi-structured questionnaires were administered to the sampled officers. Data was analyzed using descriptive statistics. Information has been presented in tables, charts and graphs. The study found out that cost reduction and ICT integration are the main factors that have effect on the adoption of information communication technology adoption on public procurement performance. The other factors studied: Supplier Relationship Management and Organization policy were not found to be significant on the effect of public procurement performance in state corporations in Kenya.

**Keywords:** *e-procurement, procurement performance, public procurement and Public Finance.*

## **INTRODUCTION**

Information communication Technology is an extended term for information technology (IT) which stresses the role of unified communications and integration of telecommunications (telephone lines and wireless signals), computers, as well as necessary enterprise software, middleware, storage, and audio visual systems, which enable users to access, store, transmit, and manipulate information. Information Communication Technology (ICT) refers to technologies that provide access to information through telecommunications. This includes the internet, computers, wireless networks hardware and software, cell phones and other communication mediums.

The term ICT also refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system. There are large economic incentives (huge cost savings due to elimination of telephone network) to merge the telephone network with the computer network system using a single unified system of cabling, signal distribution and management. (International Telecommunication Union 2011)

However, ICT has no universal definition, as ‘the concepts, methods and applications involved in ICT are constantly evolving on an almost daily basis. The broadness of ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form e.g personal computers, digital television, email, and robots.

ICT means information and communications technologies including cell phone and Internet services, radio, and a wide range of digital devices and related tools including cameras, GIS, and a wide range of hand-held computing devices. ICT enhances the integration and expansion of value chains and workflows beyond organizational boundaries. ICT is significantly valued in its capacity to bring up linkages and collaborations among the business world. Adoption of ICT by Cooperative Societies in their supply chain enables them to use information appropriately (Kotla & Prasad, 2012).

There are different forms of Technology that are used to mediate communication, Email-is a form of business communication meant for short messages that require action. This kind of technology based communication allows you to take care of a lot of customers as well as partners and other stakeholders without lengthy conversations. Infact modern software allows you to send the same email to all interested parties so that you can keep your message, name and products in the forefront of their minds. Texting is the most personal form of business communication your personal text number is reserved for a few close associates. Communications by text tend to be more urgent than email. Instant Messaging through the websites or instant message applications can contribute to the success of your negotiations. Instant messaging tends to be for longer discussions than texting. You can engage someone in another city, state or country in conversation that can lead to lucrative business deal. The third form is the social networking sites such as face book and my space can be essential to getting your message out. Tweeting, these allows you to broadcast very short messages called ‘tweets’ to people who have elected to follow your posts. This is not the place for long treatise, instead briefly refer to a new product, message or development your company is excited about. Blogs-the word blog is a short for web log. These sites are often written by amateurs, but getting a blogger to review a product or service can be a good way to spread the word about your small business. Video conferencing –these can save travel money by using video-conferencing. If you and another person both have cameras and the right software’s, you can see each other and talk to each other on your computers. This gives you the face-to-face meeting you need to without having to be in the same location.

The impact of web based technology has added value/speed to all the activities and avenues of business in today’s dynamic global competition. The ability to provide customers with cost effective total solution and life cycle costs for sustainable value has become vital. Business organizations are now under tremendous pressure to improve their responsiveness and efficiency in terms of product development, operations and resource utilization with transparency. With the emerging application of internet and information technology (ICT) the companies are forced to shift their operations from traditional way to a virtual e-procurement and supply chain philosophy to transfer the company’s activity to automated one (Shale, Iravo, & Guyo, 2014).

Three primary motives for ICT adoption have been recognized as increased efficiency and increased predictability and reduction of waste in the supply chain. ICT applications are viewed in the perspectives of applications that assist in the management of supplier networks, applications that facilitate traceability and applications that assist input supply companies to manage their distribution networks (Croom 2007).

### **Statement of problem**

The public sector spends over £150 billion a year on the goods and services needed to deliver public services (OGC, 2008). Public procurement being a Government business system is concerned with the Government procurement process; hence the processes are expected to be more transparent and accountable. However, challenges such as unjustified or hidden procurement plans, lack of need assessments, lack of monitoring capacity of Government, inconsistent cost estimate are always experienced (Ware 2012). Other challenges faced especially in the traditional purchasing procedures consisted mainly of three phases namely identification phase, ordering phase and post-ordering phase, have been faulted for a number of inefficiencies such as a sequence of non-value clerical activities, excessive time in processing orders and excessive costs of purely transactional activities among others (Lysons & Farrington, 2006).

Information and Communication Technology enables technology especially public e-procurement to play an important role especially in minimizing the risk of corruption in public procurement processes by enabling transparency, accountability and efficiency (OECD, 2008). Over the years, the government of Kenya (GoK) has called on the Government procuring entities and other stakeholders involved in purchase of government's works and services to automate their procurement processes all the way from requisition, tendering, contract award to payment (Ware et al., 2012). Such reforms are aimed at strengthening the procurement systems by enhancing transparency, accountability and responsiveness to public expenditure and to fight against wasteful spending and corruption (Ware 2012).

A number of studies have revolved around the issue of automation of public procurement process. The study by Kinoti (2013) investigated the level of supplier's preparedness in participating in the Government's e-procurement system. Aman and Kasimin (2011) investigated the challenges encountered by public institutions in implementation of the ICT infrastructure and how to overcome them. A different study by (Doherty 2013) investigated readiness of the public entities to implement e-procurement system in order to curb the challenges that affect the uptake and application. Orina (2013) further stretched on the issue of public firm's readiness in adopting the e-procurement systems introduced by the Government to enhance transparency and accountability and highlighted that in a way e-procurement has largely aided the transparency and accountability in the public sector. Over the recent past, E-procurement has become the heart of procurement in any given firm given that it is the product of the continued growth of ICT in

the world. This study therefore seeks to observe the effects of ICT adoption in public procurement performance in state corporations in Kenya.

## **LITERATURE REVIEW**

One of the reasons why organizations opt for adoption of ICT is reduction in procurement costs. One of the measures of procurement efficiency and effectiveness is procurement related costs. The aim of procurement management is to deliver desired quality of goods to an organization at minimal cost possible. According to Eadie (2007), Information Communication Technology when properly embraced significantly reduces procurement costs through simplification of the procuring process and reduction of wastage. As discussed by Gebauer, Beam and Segev (1988), who studied procurement processes in the United States, procurement costs increase due to spending on preparation of paper work, working on tender documents, advertising tenders, costs of sharing or distributing tender documents and costs of storing huge volumes of paper work and supplier records. The internet provides very lean communication opportunities.

Information Communication Technology helps reduce costs because the costs of evaluating tender documents are significantly reduced (Hawking 2004). Through use of software, the number of people required to sift through documents and analyze the tender documents is significantly reduced. Sourcing for suppliers is made efficient with e-procurement. For instance, costs related to traveling around to meet with potential suppliers or waiting for potential suppliers to travel in order to have a business meeting are substantially reduced. Software, websites, and the internet do the work of attracting or disseminating information about available tenders to which various suppliers are attracted. E-procurement significantly helps reduce quality failure related costs. According to Sheilah (2015), when the process is automated, all suppliers are subjected to specified criteria by a system. This reduces corruption cases and corruption related costs due to compromised quality.

With Information Communication Technology platforms transparency and accountability is achieved increasing the procurement process integrity. All suppliers can adequately follow the procurement process through information interfaces on the e-procurement platform. According to Rankin (2006), Information Communication Technology is important because it reduces administration costs. When less staff is required in the procurement process, it means managers have to deal with fewer staff hence greater staff control or management. Additionally, because most procurement transactions are automated, the supervision role is significantly reduced. All that managers have to ensure is electronic system integrity and a procurement process goes on without hitches. Egbu (2003) did a study, which revealed that information communication technology reduces overall costs by more than 20%.

Information Communication Technology, systems, applications are designed to allow businesses use the Internet in order to acquire the necessary goods and services. In general, there are three main categories of e-procurement systems. One type focuses on improving the transactions and

the decision-making capabilities of the company. Businesses may deal with hundreds of transactions weekly, but these applications simplify the process and help foster stronger relationships between buyers and suppliers (McKechni 2006).

The second category of e-procurement systems involves managing assets. Systems in this category provide inventory management, maintenance scheduling, in-house product availability, as well as other similar services. These applications are useful for businesses that need to keep a close idea on the quality of their direct materials in stock. Finally, the last category includes systems designed to optimize a company's production operations. Many of these applications deal with the entire production cycle, including the procurement of materials when the inventory runs low, the management of supplier contracts, and the production scheduling (Shalle,Iravo & Guyo , 2014).

Because of the differences between the systems, it is important for companies to choose the one that is most appropriate for their industry. Regardless of the type of e-procurement system a company chooses, the company can expect to receive similar benefits including saving money on purchases, improving the timeliness of the purchasing process, and eliminating waste. In addition to these benefits, companies can also improve the efficiency of their supply chain (Muinde, 2014).

Supply chains essentially include every business, manufacturer, and distributor that supplies the goods and services necessary to create a product, so any improvement in the speed of those transactions is obviously beneficial. Additionally, using information communication technology to enhance supply chain relationships can make it easier for accounting departments to track and keep record of payments and invoices. Despite the differences in information technology applications, the bottom line is that a company must choose one that works for its industry and one that will help make its supply chain more efficient if the system implementation is to truly be successful (Shalle,Iravo & Guyo, 2014).

In a sourcing strategy a buyer researches for available sourcing options in the supplier market, which can either be from local or international vendors. A detailed assessment of the different supplier options should be undertaken, weighing various criteria, such as price, lead time, quality, on-site support and long term conditions, amongst others. Procurement personnel should use their creativity in exploring alternative supply options. A supplier pre-qualification process to ensure they comply with requirements aligned with procurement strategy and policies is also necessary (Caroline, 2014). The need to be competitive, flexible and efficient has forced companies to enter into collaborative relationships with suppliers and customers. This has been necessitated by today's competitive situations where true competitive battles are fought along a network of cooperating companies. These competitive battles are fought along supply chains, implying that a company is as strong as its weakest supply chain partner (Caroline, 2014). According to Liker and Choi (2012), actively developing the supplier relations is important. Understanding your suppliers and utilizing your suppliers mutual competition has proven to be a very effective way of supplier relationship development. Other development ideas include managing your suppliers to improve their performance and abilities. It's important to keep the

managing role to yourself when conducting shared product development projects. The buying organization should communicate information with determination to selected suppliers. Understanding the actions and processes of your suppliers is a basis for starting to develop your relationships with them. Supply market intelligence is one of the factors that need to be accounted. It explains the mutual competition between competing organizations in the market. With the help of detailed supply market understanding, the factors that affect competitive advantage can be identified. The determination of the know-how of supplier processes and the total cost structure helps to develop supplier relationships (Caroline & Michael, 2014). The buying organization can imply that they have a deep knowledge about the supply market and supplier presented in the market. This shows that the organization can evaluate and compare suppliers that will enforce the suppliers to be more efficient and effective. It can also improve the service level of the suppliers (Caroline & Michael, 2014). The best action to improve the supplier's performance is to give clear instructions on what is expected and required from them now and also in the future. Conducting a diverse analysis on supplier's performance would provide a tool to the supplier to develop its actions to a more wanted direction.

Procurement policies are rules and regulations for governing procurement procedures in an organization. A properly designed and implemented procurement policy plays a pivotal role in providing a guiding framework for the implementation of effective procurement practices (Bartik, 2009). The employed procurement policies in government institutions do not provide a framework for supporting implementation of effective procurement practices.

Both small and large companies as well as non-profit organizations routinely make use of some sort of procurement policy (Bartik, 2009). There is no correct way to establish a procurement policy, factors such as the size of the business, the availability of vendors to supply necessary goods and services, and the cash flow and credit of the company will often influence the purchasing procurement approach. (Golder, 2007). The size of the company is likely to make a difference in the formation of procurement policy, in that a small company may not be able to command the volume purchase discounts that a large corporation can manage with relative ease (Gadde, 2007). Procurement policy benefits the organization by keeping costs in line and clearly defining how purchases will be made (Hall, 2009). As the needs of the entity change, there is a good chance that the procurement policy will be adjusted to meet those new circumstances. This is necessary to make sure the policy continues to function in the best interests of the company or non-profit organization and keep the acquisition process simple and orderly (Günther, 2007).

Developing countries spend about 20% of Gross Domestic Product (GDP) on public procurement (Callendar & Mathews, 2000). In developing countries the scenario is different as they spend up to 50% (Gathumbi & Michael, 2013). Unlike the private sector which would want to limit the number of suppliers based on trusted relationships aimed at minimizing operating risks, the trend in the public sector may be different.

According to (Gathumbi & Michael, 2013) the government should aim at having as many sellers as possible in order to broaden competition and maximize opportunities for value for money. Use of pre-qualified suppliers which is popular in the private sector is highly discouraged in public sector. Such practices would be seen as creating impunity thus unhealthy competition. Michael, (2013) established the ambiguity of goals in public procurement and vagueness of the public interest. Public interest advocates for values such as honesty, integrity, equal treatment, due processes, and transparency.

Public procurement is faced by many challenges owing to the fact that public sector procurement is large and complex. Balancing between achieving social and political responsibilities is a challenge governments have to cope with. Gathumbi and Michael, (2013) further states that governments should serve to preserve accountability and transparency of services by using a complex contractual system designed to protect public interest.

Jorge (2010) identified eleven (11) steps in ideal public procurement. They include: requirement identification, determining the procurement method, procurement planning and strategy development and the fourth step is procurement requisition processing. Step number five is Solicitation documents preparation and publication. Thereafter pre-bid/ proposal meeting and site visit followed by bid/proposal submission and opening. Step eight is bid/proposal evaluation while the next step is contract award recommendation. The last two steps are contract negotiations and contract Award (signing) respectively. However, though the eleven steps could constitute best practice, it is not unusual for governments to either over concentrate in one of the steps and / or skip some steps. Such moves lead to loss of accountability, transparency and integrity.

Organization for Economic Cooperation Development (OECD) has principles that seek to enhance integrity in public procurement. The principles revolve around transparency, good management, prevention of misconduct compliance and monitoring and finally accountability and control. The principles auger well with the legal instruments of organizations such as the United Nations, World Trade Organization and the European Union (Gathumbi & Michael, 2013).

Information is very critical guide in decision making. However, it is the availability, speed of access, reliability, timeliness and accuracy of information that actually ensures that information aids in making informed decisions. Riley (2012) adds three important elements not mentioned by many others, they are ease of understanding, worth the cost and able to meet the needs of the users. Riley emphasizes that in order to achieve the above elements, objectives for which information is sought is defined in advance. Of importance also is to ensure use of current information systems and involvement of users in development of strategies. Finally, use of authoritative sources, a concept emphasized by academic research hence the need for quoting the source of information.

According to Gathumbi and Michael (2013), government procurement should strive to implement e-procurement systems. They facilitate transparency, accountability and access through an open system. Reduction of non-value added activities such as telephoning and postage are eliminated thereby making processes faster. Organizations that is able to reduce cost of doing business end up being more competitive and therefore grow faster than others. Gathumbi & Michael (2013) depicted three types of e-procurement: The first is, Enterprise Resource Planning (ERP) which facilitates the creation and approval of purchasing using web technologies. The second is e-tendering which conveys information on pricing to suppliers via the internet. Finally, e-sourcing whose primary role is to identify suppliers by using Information Communication Technology.

Shalle, Iravo, and Guyo (2014), envisages use of ICT in public procurement in e-government. E-government transforms both internal and external relations of public administration through ICT. Information Communication Technology in procurement aims at optimizing service delivery, increase involvement of citizens in governance and also building more capacity in governance. The Kenya government strategy paper March (2004) stipulated a medium term initiative, e-procurement, which was envisaged to have been implemented by June 2007. The government through e-government aimed at enhancing efficiency and effectiveness in the delivery of services, promoting accountability by ensuring easier access to information and also allowing the citizens to participate in the delivery of services thus enhancing good governance, empowerment and transparency. All these could only be achieved through Information Communication Technology.

A Ministerial Declaration which was unanimously approved in Manchester in November 2005 stated that the European Union member state agreed that they would embrace e-government by 2010. The benefits they sought were higher user satisfaction with public services, reduced administrative burden on citizens and efficiency through the use of ICT. To achieve the objectives of procurement which are transparency and accountability, the innovative use of ICT was to be considered (Caroline & Michael, 2014).

## **RESEARCH DESIGN AND METHODOLOGY**

The study adopted cross-sectional research design to explore the effects of ICT adoption on procurement performance. The target population for this research study was 450 respondents, drawn from The Rural Electrification Authority procurement department and other departments such as administration, human resources, information technology and finance department because this are the departments that work hand in hand with the procurement department. Primary data was collected by use of questionnaires that was administered by the researcher himself. In this case, the questionnaires were adopted by the researcher following their simplicity in administration, scoring of items and analysis of data (Gronhaug, 2005).

Primary data was collected using questionnaires which contained closed and open ended questions and also likert-scale type of questions to determine the factors affecting effective

procurement of goods in government ministries. Secondary data was collected from journals and records of the organization. Data was analyzed using qualitative and quantitative techniques. Qualitative method involves content analysis and evaluation of text material. Quantitative method involves the use of diagrams such as tables and graphs (Chandran, 2003).

### **Study Findings**

The study results indicate that procurement performance is adequately affected by Cost Reduction, ICT integration, Supplier Relationship Management and Organization Policy. These findings are supported by  $R^2$  which was observed to be 75.5%. This is also a clear indication that the results agreed to the specific findings of the study.

The results in this study also indicated that there cost reduction had a positive impact on procurement performance. As such, a decrease in cost reduction would result to a positive increase in procurement performance. This finding was valid since the regression coefficient ( $B=0.919$ ) was positive. Additionally, 79 percent of the respondents agreed that cost reduction had an effect on procurement performance.

The study results also revealed that ICT integration had an effect on procurement performance. To this extent, an increase in ICT integration would adequately result to a positive increase on procurement performance. This finding was validated by the fact that the study regression coefficient was positive ( $B=0.707$ ). Additionally, 68 percent of the respondents agreed that ICT integration had an effect on procurement performance.

Further, Supplier Relationship Management was found to have an effect on procurement performance. In this case, an increase in Supplier Relation Management would adequately result in a positive increase in procurement performance. This finding was deemed valid since the regression coefficient was positive ( $B=0.638$ ). Consequently, 61 percent of the respondents had agreed that Supplier Relationship Management had an effect on procurement performance.

The study also established that Organization policy had an effect on procurement performance. In this regard, an increase in organization policy would result in a positive increase in procurement performance. This study finding was validated by a positive regression coefficient ( $B=0.713$ ). Further, 55 percent of the respondents agreed that organization policy had an effect on procurement performance.

Results also indicate that the model was robust at 0.0013. In this regard, the model was able to explain 75.5% of the variations in the dependent variable which is procurement performance. ANOVA statistics presented in Table 4.11 indicate that the overall model was statistically significant. This was supported by a probability (p) value of 0.013 which is far much less than 0.05 what implies that the independent variables are good predictors of procurement performance.

### **Regression Analysis**

The study adopted a multiple regression analysis to determine the relationship between independent variable (public procurement performance) and the dependent variables (cost reduction, ICT integration, Supplier relationship management and organization policy). In this

case, the researcher applied SPSS version 23 to code, enter and compute the measurements of the multiple regressions for the study. According to Green & Salkind (2003) regression analysis is a statistics process of estimating the relationship between variables. Regression analysis helps in generating equation that describes the statistics relationship between one or more predictor variables and the response variable.

**Table 4.1: Model Summary**

Model	R	R Square	Adjusted Square	Change Statistics	
				F Change	Sig. F Change
	.815 <sup>a</sup>	.755	.225	7.724	.0013

In this regard, the four independent variables (Cost Reduction, ICT integration, Supplier Relationship Management and Organization Policy) were observed to explain 75.5% of the public procurement performance as represented by the R<sup>2</sup> as indicated in **Table 4.11**. This therefore means that other factors not studied in this research contribute to 24.5% of the public procurement performance.

**Table : ANOVA TEST**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.172	4	16.043	26.324	.0013 <sup>b</sup>
	Residual	17.227	27	.6380		
	Total	81.399	31			

a. Dependent Variable: public procurement performance  
 b. Predictors: (Constant), cost reduction, ICT integration, Supplier relationship management and organization policy

The reports summary ANOVA and F statistic (26.324) is significant at 0.05 significance level. The significance value is .0013 and the value of F is large enough to F critical we conclude that the set of independent variables; Cost reduction, ICT integration, Supplier Relationship Management and organizational policy influence public procurement performance in state corporations in Kenya. Table 4.12 shows that the independent variables statistically significantly predict the dependent variable,  $F(4, 27) = 26.324, p < .05$ , this shows that the overall model was significant.

**Table : Multiple regression**

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	10.435	5.296		.001
Cost reduction	.919	.343	.109	.001
ICT integration	.707	.240	.207	.004
Supplier Relationship Management	.638	.379	.140	.019
Organization policy	.713	.519	.105	.002

From the data in Table 4.13, the regression equation becomes:

$$Y=10.435 + 0.919X_1 + 0.707X_2 + 0.638X_3 + 0.713X_4$$

Predicted public procurement performance in state corporations in Kenya = 10.435 + (0.919 x Cost reduction) + (0.707 x ICT integration) + (0.638 x Supplier Relationship Management) + (0.713 x Organizational policy).

**Effect of cost reduction on procurement performance**

With regard to cost reduction the study sought to investigate the effect of cost reduction on procurement performance in State Corporation in Kenya. In this regard, the study findings revealed that 79 percent of the respondents agreed that cost reduction had an effect on procurement performance, 10 percent were of a contrary opinion while 11 percent were not sure. These finding were in line with the finding made by Sheilah (2015) who argued that when the procurement process is automated, all suppliers are subjected to specified criteria by a system. This reduces corruption cases and corruption related costs due to compromised quality. Similarly, Hawking et al., (2004), argued that costs in procurement related to traveling around to meet with potential suppliers or waiting for potential suppliers to travel in order to have a business meeting, when the procurement service in an organization is fully automated, then such costs are substantially reduced hence improving on procurement performance.

**Effect of ICT integration on procurement performance**

The study also sought to establish the effect of ICT integration on procurement performance. In this case, the study findings revealed that 68 percent of the respondents agreed that ICT integration had an effect on procurement performance, 13 percent disagreed while 19 percent were not sure if it had an effect or not. To this extent, the study findings were in agreement with the findings made by Shale et al. (2014), who established that ICT integration had an effect on

procurement performance in organizations. The study went further to make a recommendation that for firms to benefit from ICT integration then they have to choose a system that truly works for the company. On a similar note, Muinde, & Shale (2014) made an argument that for a company to receive benefits including saving money on purchases, improving the timeliness of the purchasing process, and eliminating waste and even improving the efficiency of their supply chain, the company has to focus its attention on ICT integration issues.

### **Effect of Supplier relationship management on procurement performance**

For most organization of the world, actively developing the supplier relations is important. Understanding your suppliers and utilizing your suppliers mutual competition is an effective way of supplier relationship development in the organization. One of the specific objectives in the study was to establish the effect supplier relationship management on procurement performance.

From the study findings, 61 percent of the respondents agreed that supplier relationship management had an effect on public procurement performance. 26 percent disagreed while 13 percent were not sure. These findings were in line with the findings made by Caroline & Michael (2014) who established that supplier relationship management is the best action to improve the supplier's performance. Similarly, Liker and Choi (2012) concurs that actively developing the supplier relations is important to any given institution.

### **Effect of Organization policy on procurement performance**

Organization policies are guidelines developed in a company to guide its daily activities. According to Hall (2009), procurement policies are too a part of the organizational policies. From the study findings, 55 percent of the respondents agreed that organization policy has an influence on public procurement performance. However, 19 percent of the respondents disagreed that organization policy had an effect on procurement performance while 26 percent of the respondents indicated that they were not sure. This was in line with earlier findings made by Hall (2009) who established procurement policy benefits the organization by keeping costs in line and clearly defining how purchases will be made.

### **Conclusion**

Technology in procurement provides access to a whole range of procurement information at low cost and independently of time and location. Efficiency of procurement activities is best maintained when companies adapt to new technologies which tend to reduce cost and improve operational activities. Application of technologies ensures compliance with the existing procurement policy, legislation and procedures thus allowing neither purchasing agencies nor bidders to deviate from the public procurement process. In this way public institutions tend to reduce the opportunities for corruptive cases.

Cost is vital in procurement performance in any given organization. In this regard, public institutions need to ensure that cost factors in procurement remains as minimal as possible to increase procurement performance what adequately results to general organizational performance.

The study concluded that organizations perform poorly as a result of lack of adequate ICT infrastructures. Information and Communication Technology enables technology to play a vital role in procurement. In this regard, ICT integration in public procurement allows functionalities such as e-procurement to play an important role especially in minimizing the risk of corruption in public procurement processes by enabling transparency, accountability and efficiency (OECD, 2008).

Supplier relationship management is very important for public entities in Kenya. True competitive battles nowadays are fought along a network of cooperating companies and through relations with the prominent suppliers along the supply chain network. To be able to perform well in the market, supplier relationship management is crucial.

### **Recommendations**

The study made the following recommendations:

1. Implementation of sound organization policies in support of ICT adoption in State Corporation in Kenya. This would help seal loopholes in public institutions that has in the past led to loss of millions on shillings as outlined Kinoti (2013). In this case, the researcher puts across an argument that the existing policies are not enough to ensure efficiency and effectiveness in public procurement performance as supported by Kinoti (2013). To achieve efficiency and effectiveness in public procurement, the public procurement entities need to individually come up with adequate policies to back up the already existing public procurement regulations and procurement laws what would not only enhance efficiency and effectiveness of public procurement performance but also adequately reduce corruption cases and embezzlement of public funds what is a major problem facing public procurement in Kenya.
2. The Kenyan public institutions to heavily invest in ICT tools and integrated systems such as the ERP and MRP II systems so as to shift from the traditional buying to a modern buying to make it possible to do all of the procurement activities on line. Kenya as a developing nation has made huge investments in improving the state of technology in the country. This is because, technology is everything today and for the public institutions to realize their set goals and objectives, they have to change with the changing environment which is highly influenced by technology today.
3. Internal processes and systems should maintain continuous improvement to allow for good structures for procurement performance. These structures if well done tend to avoid unnecessary costs for example such as costs as a result of corruption which results to court cases that can be very costly to the company. In procurement, quality of procured goods is usually a key indicator of performance; however, companies should also consider other intangible measures like timely delivery of orders and customer satisfaction.

## REFERENCES

- Armitage, C.J. and Conner, M. (2001), “Efficacy of the theory of planned behavior: a metaanalytic review”, *British Journal of Social Psychology*, Vol. 40 No. 3, pp. 471-99.
- Bagozzi, R. P. (Ed.). (1994). *Principles of marketing research* (pp. 386-422). Cambridge, MA: Blackwell.
- Basheka, B. C. & Bisangabasaija, E. (2010) Determinants of unethical public procurement in local government systems of Uganda: a case study. *Int. J. Procurement Management*, 3(1), 91–104.
- Caroline, G. M., & Michael, K. C. (2014). *Information and Communication Technology and Procurement Performance in Star Rated Hotels in Nairobi, Kenya*. Nairobi: University of Nairobi Press.
- Davenport, T. (2008), “Putting the enterprise into the enterprise system”, *Harvard Business Review*, Vol. 76 No. 4, pp. 121-31.
- Doherty, N. F., McConnell, D. J., & Ellis-Chadwick, F. (2013). Institutional responses to electronic procurement in the public sector. *International Journal of Public Sector Management*, 26(6), 495-515.
- Eadie R., Perera S., Heaney G. and Carlisle J. (2007). Drivers and Barriers to Public Sector e-procurement within Northern Ireland’s Construction Industry, *ITcon Journal*, (12), 103-120.
- Government of Kenya, (2005). *The Public Procurement and Disposal Act (No.3 of 2005) Gazette Notice No.719*. Nairobi: Government Printer.
- Harrington, H.J. (2001), *Business Process Improvement: The Breakthrough Strategy Total Quality, Productivity and Competitiveness*, McGraw Hill, New York, NY.
- Hawking P., Stein A., Wyld D. and Forster S. (2004). E-procurement: Is The Ugly Duckling Actually a Swan Down Under? *Asia Pacific Journal of Marketing and Logistics* (16), 1: 1-26.
- Heide, J. B., & John, G. (1990). Alliances in industrial purchasing: The determinants of Joint action in buyer-supplier relationships. *Journal of Marketing Research*, 27(1), 24-36.
- Hoe, D., (2013). Financial Supervision: Integrated or Specialized. *Journal of International finance*, 5(2), 201-243.

- Hong, W. and Zhu, K. (2006), “Migrating to internet-based e-commerce: factors affecting ecommerce adoption and migration at the firm level”, *Information & Management Journal*, Vol. 43, pp. 204-21.
- Jorge, A.L. (2010). *The Procurement Cycle: Fundamental Steps in Public and Project Procurement*. European Journal of Purchasing and Supply Management. Vol. 8
- Kassim, E. S., & Hussin, H. (2010). *Public e-procurement*. Nairobi: University of Nairobi Press.
- Kotla, A., Prasad, R. & Bowonder, B. (2012). ICT application in a dairy industry: The e-experience of Amul, *International Journal of management*, 6(2), 256-695.
- Lysons, K., & Farrington, B. (2006). *Purchasing and Supply Chain Management* (6<sup>th</sup> ed). London ,Prentice Hall: Financial Times.
- Makau, J., & Onyango, J. (2010), March 15). Supermarket scramble for Nairobi shoppers *Business Daily Africa*, page 16.
- Mbae, N. (2014). *Public Procurement Law and Procurement Performance of County Governments in Kenya: Case of Machakos County Government*. Nairobi: University Of Nairobi Press
- Min, H. and Galle, W. (2002), “E-purchasing: profiles of adopters and nonadopters”, *Industrial Marketing Management*, Vol. 32, pp. 227-33.
- Muinde, C. M. & Shale, N. I. (2014). Role of e-procurement strategy in enhancing procurement performance of saving and credit cooperatives in Kenya: Case of Kitui Teachers SACCO Limited. *International Journal of Social Sciences and Entrepreneurship*, 1 (12), 848-862.
- Mugenda, O. M., & Mugenda, A.G. (2003). *Research methods: Quantitative and qualitative approaches*. Nairobi: African Centre for Technology Studies, ACTS Press.
- Muthigani, A. (2011). *Electronic procurement implementation: case study of selected firms in Kenya*. Nairobi: University of Nairobi Press.
- Nyanza, D., Namusonge, G. S., Iravo, M., & Ismael, N. APPLICATION OF NAÏVE/TRANSACTIONAL PROCUREMENT MEASUREMENT SYSTEMS IN THE PUBLIC UNIVERSITIES OF KENYA.
- OECD (2009). Integrity in Public Procurement: Mapping out Good Practices for Integrity and Corruption Resistance in Public Procurement. *International Journal of Public Sector Management*, 26(6), 495-515.
- Pressutti, W. (2003), “Supply management and e-procurement: creating value added in the supply chain”, *Industrial marketing Management*, Vol. 32, pp. 219-26.

- Rankin J., Chen Y. and Christian A. (2006). E-procurement in the Atlantic Canadian. AEC industry. *ITcon* (11): 75-87.
- Shale, N.I., Iravo, M., & Guyo, W. (2014). Role of e-procurement strategy on the performance of state corporations in Kenya. *International Journal of Science and Research*, 2 (11), 336-341.
- Weele, V. (2010). *Purchasing and Supply Chain Management: Analysis, Strategy, Planning and Practice* (5<sup>th</sup> ed). London:Thomson Learning Publishers.
- World Bank (1995a). *Guidelines: Procurement under IBRD Loans and IDA Credits*. Washington, D.C: World Bank