
# E-PROCUREMENT ADOPTION AND SUPPLY CHAIN PERFORMANCE IN THE PUBLIC SECTOR IN KENYA

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# E-PROCUREMENT ADOPTION AND SUPPLY CHAIN PERFORMANCE IN THE PUBLIC SECTOR IN KENYA

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**ABSTRACT**

Public procurement is crucial to government service delivery. For decades procurement performance has been attracting great attention from practitioners, academicians and researchers due to poor levels of performance. Despite Government efforts for improvement, it is still marred by shoddy works, poor quality goods and services. Stakeholders complain about poor service delivery. The general objective of the study was to assess factors influencing adoption and performance of e-procurement in Kenyan public sector with specific focus on state corporations under the Ministry of Finance. It sought to assess the extent to which employee competence, Policies, Technology and security of procurement data influence adoption and performance of e-procurement. The study population included state corporations under the Ministry of Finance. Due to time and financial constraints, the researcher carried out a simple random selection of three respondents from the procurement departments of all the 16 corporations giving a sample size of 48. Both primary and secondary data was used for the study. The research study used a questionnaire as a key instrument for primary data collection. Qualitative data was analyzed through content analysis. Quantitative data was analyzed through the use of frequency distribution, mean scores and standard deviations. In addition, one-way analysis of variance (ANOVA) tests was carried out. From the study, it was revealed that Skills, Policies, Technology and Data Capacity influenced e-procurement performance and its adoption in the organizations under review. It is recommended that reforms in the state corporations be accelerated with a view of streaming procurement processes as well as automating activities and back office operations. The study also recommended that among others, due to continuous turnover of the employees', continuous training for the incoming staff is required on e-procurement. In addition, formal recognition backed by legislation of the electronic procurement transactions should be encouraged. Integration of the Organizations system and those of the suppliers, demonstration of the positive impact of the system, and installation of linkages between all Governments agencies should be encouraged.

***Key Words:*** *Skills, Policies, Supply Chain Performance, Public Sector*

## INTRODUCTION

In the history of procurement, at one time, traditionally procurement was carried out by visiting a store and then following the procedures for placing an order or by looking through catalogues and making a phone call. The process of procurement traditionally involved manual procedures and in some point, handling procurement transactions went through slower systemic processes (Hawking et al. 2004). The traditional procurement processes are the basis for the introduction of e-procurement to the system in stages advised by scholar of the field. Along with the emergence of internet, companies started turning their procurement activities towards internet since they found out that it would benefit them a great deal if all procurement processes are carried out correctly and properly. According to Shaw and Subramaniam (2002) Procurement can probably be defined in so many different ways; however, every definition might have something in common in general. Procurement is a comprehensive function which involves activities and processes for the purpose of attaining or acquiring products and services. In addition, procurement activities can cover up establishing fundamental requirements, negotiation of contracts, and sourcing activities including market research and supplier evaluation as well as purchasing activities required for the purpose of placing an order and receiving goods and services.

The main goal of procurement is to receive the right product or service at the right and predefined time, at the specified location, with the right quality and at the right price carrying out the entire process of purchasing efficiently and effectively (Enporion 2005). Since the emergence and development of internet in the 1990s, along with increasing global competitive pressure, supply chain management professionals, researchers, academics and organizations have been continually looking for different possible ways and approaches to minimize costs associated with procurement, sourcing and supplies, increase efficiency, and of course to reduce lead time as much as possible. In order to tackle all the above-mentioned challenges to some extent, organizations and firms have strong tendency in utilizing eprocurement strategy in an attempt to their all key business processes linked with procurement (Aberdeen Group 2005). The process of e-procurement (Podlogar 2006) from the beginning starts, via internet based protocol, facilitated with the function of creating requisition, approving and managing the purchase order, and accounting or financial process.

When procurement takes place online, it can reach marketplaces that cannot be reached with traditional procurement systems. Organizations communicate, transact and interact smoothly and faster being enable to speed up the cycle time in order to perform tasks and run projects properly. When it comes to the definition of e-procurement, e-procurement (Insight 2014) stands for electronic procurement, which means electronic methods and ways of conducting business transactions, including purchasing, customer´s invoice, payments etc. with the development of internet, companies now focus more on advertising and selling their products and services via internet online, which can be reached to millions of customers worldwide very easily and cost effectively.

Gunasekaran et al. (2004) introduce six metrics for measuring SCM capability and performance. Metrics are based on the following SCM processes: plan, source, make/assemble and delivery/customer. (Gunasekaran et al. 2004) Shepherd and Günter (2006) categorize SC performance measures into five SC processes: plan, source, make, deliver and return or customer satisfaction, whether they measure cost, time,

quality, flexibility and innovativeness and whether they are quantitative or qualitative measures.

Measures can be categorized according to business processes or into strategic, operational and tactical management levels. (Shepherd & Gunter 2006) De Toni and Tonchia (2001) present several indicators of internal and external time measurement. These time measures presented are called time performance. Time-based indicators were used in the research and the results in order of superiority are: Time-to-market, distribution lead-times, delivery reliability, supplying lead-times, supplier delivery reliability, manufacturing lead-times, standard run times, actual run times, wait times, set-up times, move times, inventory turnover, order carrying-out times and flexibility.

Time performances are divided into external and internal times. Internal times can be split into run and set-up times on the one hand and wait and move times on the other. Externally-perceived time performances can be divided in three parts: system times (including supplying, manufacturing and distribution lead-times), delivery speed and delivery reliability (both from suppliers and to customers) and time-tomarket (or time required to develop a new product). (Toni & Tonchia 2001) Chan (2003) presents SCM performance measurement approach which consists of qualitative and quantitative measures.

According to the Economic Recovery Strategy for Employment and Wealth Creation Report, the manufacturing sector in Kenya is a major source of growth, still with high potential for growth and investment. The role of the manufacturing sector in Vision 2030 is to create employment and wealth. Some key Kenyan manufacturing subsectors that have increased demand in the recent past include galvanized iron sheets, cement, cigarettes, beer and wheat flour. All of these have increased production between 2003 and 2005; particularly cement which is a good indicator of economic activity. On the consumer goods side, goods manufactured locally include stationery and grooming products (KAM 2014). Since independence, the Kenyan economy has remained predominantly agriculture, with industrialization remaining an integral part of the country's development strategies. The industrial sector's share of monetary GDP has remained about 15-16% while that of manufacturing sector has remained at a little more than 10%. Over the last two decades manufacturing activities account for the greatest share of industrial production output and form the core of industry (ROK, 2012).

**Statement of the problem**

Public procurement is key to government service delivery, yet constraints affect its performance.
Despite the numerous benefits of e-procurement public procurement entities continue to face challenges. Procurement is perceived as prone to corruption; occasioning waste and affecting quality of service and life improving opportunities, however adoption of e-procurement itself may have been a challenge. There is need to reverse this worrying trend and win public confidence. Despite Government efforts to improve the procurement system, it is still marred by shoddy works, poor quality goods and services. Improper implementation of recommended performance standards results in unnecessarily high operation costs, uncoordinated business activities, inability to achieve domestic policy goals, and failure to attract and retain professionals. Suppliers complain about the capability of public sector buyers.

Overall, it appears that e-procurement is still in its early stages of adoption in the corporate world. A recent Aberdeen Group (2001) study of spending analysis practices of 157 firms revealed that only a few firms truly know and understand how much they spend, on which products, and with which

suppliers (Bushell, 2004). Day, Fein, and Ruppersberger, G. (2003) noted users' reluctance to be subjected to significant changes in business processes as a major barrier to the implementation of e-procurement systems.

A number of recent studies have also looked into difficulties faced by firms in launching e-procurement. In a recent survey of 102 international active e-marketplaces and procurement service providers, Kheng and Al-Hawandeh (2002) investigated the adoption of e-procurement in Singapore and presented stumbling blocks to this initiative from the point of view of Singaporean firms. First, there were issues about security and privacy of procurement transaction data. Second, required significant investments in hardware, software, and personnel training to participate in e-procurement are prohibitive. Third, the laws governing B2B commerce, crossing over to e-procurement, are still undeveloped. For instance, questions concerning the legality and force of e-mail contracts, role of electronic signatures, and application of copyright laws to electronically copied documents are still unresolved. Fourth, technical difficulties related to information and data exchange and conversion such as inefficiencies in locating information over the internet using search engines and the lack of common standards that get in the way of the easy integration of electronic catalogs from multiple suppliers.

Huber, Sweeney, and Smyth., (2004) found the following perceived barriers to electronic procurement: a "wait-and-see" attitude among firms in selecting e-marketplaces and procurement service providers; Concerns over security and confidentiality of the data needed to be exchanged in electronic environments; Reluctance to share data with trading partners; the "non-feasibility of custom-made products" for pooling initiatives; Lack of standardization; and Uncertainty over trust and commitment among trading partners.

In Kenya, research on e-procurement has focused on implementation rather than the adoption process of e-procurement. For instance Metoh (2006) did a study on the factors affecting implementation of electronic procurement system in the public sector: a case of National Aids Control Council. This study did not conclusively address the underlying challenges in the adoption and performance process of e-procurement.

The current literature is mainly founded on the private sector and a few founded on the local public sector. The basis of this study is therefore primarily founded on the some of the challenges found in the existing literature seek to assess the actual and planned levels of e -procurement adoption and performance, with a view of carrying out detailed study of challenges of adoption and performance of e-procurement in the Public sector in Kenya and specifically State Corporations under the Ministry of Finance.

**Objectives of the study**

The general objective of this study was to investigate hoe E-Procurement adoption affects supply chain performance in Kenya. The specific objectives were:

- To determine how Skills affects supply chain performance in Kenya.
- To assess how Policies affect supply chain performance in Kenya.

**LITERATURE REVIEW**

**Theoretical Review**

**Technology Acceptance Model**

Technology Acceptance Model (TAM) has been considered as a powerful model for explaining and predicting usage intention and acceptance

behaviour (Yi and Hwang, 2003). Mathieson, Peacock & Chin (2001) argued that TAM's ability to explain attitude toward using an information system is better than the other multi-attribute models. In turn, attitude in TAM is influenced by two key elements determining technological behaviour; these are perceived ease of use and perceived usefulness (Davis, 1989). Davis (1989) has defined perceived usefulness as the degree to which a person believes that using the system will enhance his or her performance and ease of use as the degree to which a person believes that using the system will be free of mental effort.

Croom and Brandon-Jones (2007) indicated that the challenges in system specifications are related to software integration and data management. According to him, software integration refers to the customer's information infrastructure and its links to suppliers, while data management refers to data entry and the coding schema employed. Issues in system specification include hardware resources, network resources and web server, while issues in data management include are limited levels of management information about expenditure, product and service specifications the main issues in system specification. It is from this understanding that Technology that is made up of hardware and network resources may influence the use of e-procurement in organizations. E-procurement in itself requires resources such as computers, software and networks, additionally management of data required as input to the e-procurement system. Arising from this understanding this study sort to find out whether employees in the organization under the study had the competency to utilize the resources for data management in E-procurement.

Similarly, Lin and Hsieh (2000) found that data management is often troubled by multiple entry points and inconsistent product coding. It is from this perspective in this project that E-procurement involves a great deal of data input and exchange between organizations and its suppliers. To achieve success in these exchange it requires management of data .It is from this background that it is necessary to find out whether employees in the organizations under the study if they have the competency to engage in the data management (data entry, analysis, confidentially and other forms of processing)

**Theory of Planned Behaviour**

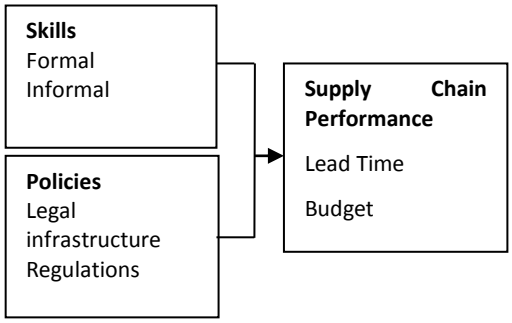
Theory of Planned Behaviour (TPB), Ajzen (1991) and Theory of Reasoned Action
(TRA) (Fishbein & Ajzen, 1975) are the popular theoretical models in the field of social psychology. According to theory of reasoned action, (Fishbein & Ajzen, 1975) an individual's actual behaviour is directly influenced by his/her behavioural intention to use. Behavioural intention is affected by individual's attitude towards that behaviour and subjective norm. Attitude is defined as an individual's positive or negative feelings about performing the target behaviour, whereas, subjective norms is defined as the individual's perception that most people who are important to him think he should not perform the behaviour in question (Fishbein & Ajzen, 1975).
Theory of Planned Behaviour (TPB) is an extension to theory of reasoned action which includes another important determinant of behaviour i.e. perceived behavioural control Ajzen (1991). According to TPB, perceived behaviour control refers to an individual's perception of the ease or difficulty of performing the behaviour of interest. According to TPB, the more favourable the attitude and subjective norm with respect to behaviour, and the greater the perceived behavioural control, the stronger should be an individual's intention to perform the behaviour under consideration (Ajzen, 1987; 1991). Most empirical applications of the TPB try to explain or predict newly introduced behaviour (Armitage & Connor, 2001).

Although several studies have focused on the factors that impact on the adoption of internet-based technology for the past decade (Heijden, 2003; McKechnie, Winklhofer, Ennew, (2006); Lederer, Maupin, Senza & Zhuang, 2000; Pavlou, 2003), there is limited empirical work on readiness of adoption and performance of e-procurement system.

Therefore, through integrating the two theories, this study can provide a more comprehensive model of e-procurement adoption. This study would contribute to the theoretical development of behaviour formatting toward e-procurement adoption.

Croom and Brandon-Jones (2007) explain that the roll-out strategy of e-procurement system can be either an informal "evolutionary" protocol or a formal "project board" protocol. However, because of insufficient data, their discussions are limited to benefits accrued from both "evolutionary" and "project board" protocols. There is no empirical evidence on the challenges of roll-out strategy in e-procurement implementation management. Nevertheless, they suggest formal "project board" protocol as a preferred roll-out strategy. Additional challenge in implementation management particularly for developing countries is outsourcing contract (Auriol, 2009). According to Auriol (2009), although government can improve welfare to its citizen and transfer the cost of system development and implementation through outsourcing, government has to agree to outsourcing vendor's terms and conditions. For example, government must agree to the service fees charged on users/citizens as well as the output level set by vendor in order to allow vendors to recover their investment on the new system. The service fees could become a burden to users and indirectly hinder the successful of e-procurement implementation (de Boer et al., 2002).

**Conceptual Framework**




**Independent Variables Dependent Variable**

**Figure 1: Conceptual Framework**

**Skills**

Procurement staff must be competent enough to use the applications of software that offers the organization management skills to manage their activities for example, distribution chain and value addition in a company (Beth et al. 2003). This technology is based on databases, which are easily reached on real time foundations. ERP systems perfectly provide the procurement management and the management itself with the opportunity to produce steadfast, consistent, and timely information necessary for attainment of organizational goals.

In 2003, a note in Harvard Business Review indicated that `…despite years of process breakthroughs and elegant technology solutions, an agile, adaptive supply chain remains an elusive goal. Maybe it's the people who are getting in the way.` (Beth et al. 2003). It is commonly believed that instead of considering the supply chain to be a 50/50 mix of infrastructure and information systems technology, rather any supply chain is more like 45/45/10 mix of human behaviour, systems technology and asset infrastructure (Gattorna 2006).

Andraski and Novack (1996) indicated that people are "… the most important element of the logistics

marketing concept." Daugherty et al. (2000) noted: "To take supply chain performance to the next level, companies will have to tap into this human element more intensively. Many companies have pushed hard on technological and infrastructure improvements and investments. The next wave of improvements and investment should center on the people who manage and operate the supply chain."

As e-Procurement includes new technologies and changes in traditional procurement approaches, the need to train staff in procurement practices and the use of e-Procurement tools are critical to the success of an e-Procurement initiative (WB, 2003). End-users can realize the immediate benefits of the e-Procurement system once they understand the operational functionalities (CGEC, 2002). This means that training should be given a high priority, alongside the need for public sector agencies to identify the skills required by all those engaged in procurement (ECOM, 2002).

It is evident that employees has a great role in adoption of e-procurement and their skills ,competencies and training may influence to a large extent how e-procurement is adopted and implement in an organization. The human element in a business environment cannot be for overemphasized because without which, any organizational objectives such as e-procurement may not succeed.

**Policies**

Policies is a basis of any business transaction whether in Public sector or private businesses. It defines the obligations and responsibilities of the partners transacting business with the objectives of fulfilling each other's desired goals. Kheng and Al-Hawandeh (2002) found that the laws governing B2B commerce, crossing over to e-procurement, are still undeveloped. For instance, questions concerning the legality and force of e-mail contracts, role of electronic signatures, and application of copyright laws to electronically copied documents are still unresolved.

The Public Procurement and Disposal Authority recognize that the existing PPDA 2005 and PPDR 2006 Policies in Kenya may not have adequately covered aspects of e-procurement transaction.(PPOA., The long term policy framework for Public Procurement 2009) The weakness in this frame work therefore may inhibits the adoption and growth of e-procurement iniatives. Understanding the challenges and limitation of e-procurement adoption in the public sector is important due to complexities of government policies and bureaucracy. Without such understanding, government may not be able to achieve the benefits of e-procurement. This could assist in future planning and adoption of e-procurement.

In an effort to create order in public procurement, PPOA through the support of the Kenya Government and the Public Financial Management Reform (PFMR) Programme, has since its establishment in 2007 endeavored to implement a new legal and regulatory regime to guide public procurement. Key achievement towards implementing a new legal and regulatory framework in public procurement is evident in the many guidelines PPOA has developed to guide procurement practices and pricing of common user items. The guidelines include Public Procurement Market Price Index, General and Disposal Manual, Procurement Manual for Works, Procurement Manual for Information and Communication Technology, Procurement Manual for Insurance Services, Procurement Manual for Non- Intellectual Services, among others

Since coming into being, PPOA has conducted procurement assessments and reviews in about 100 major procuring entities. The principal goal of the reviews has been to help entities develop capacity building programs which enable them better apply

the provisions of the Act and the Regulations. Procurement Assessments, on the other hand, have been carried out to check the level of performance of the procurement function in the selected entities to establish their strengths, weaknesses and areas that require assistance and improvement. The assessments focus on key indicators such as institutional arrangements or structures, procurement process, mandatory reporting requirements, stores, inventory control and management (R.O.K, 2012).

Furthermore, an important accomplishment by the PPOA can be seen in the Authority's action to develop and implement an e-procurement strategy. The strategy has made it possible to post tenders online thus ensuring transparency and accountability in public procurement. Moreover, e-procurement has also enhanced access to public procurement by vulnerable groups (R.O.K, 2012).

The Authority has also enhanced access to public procurement information by developing a modern and interactive website which provides important information to the public and stakeholders on public procurement. In addition, stakeholders consultative forums are held annually to share information on how to improve the public procurement system. Further, contract awards worth Ksh 5million and above reported by the procuring entities get posted on the Authority's website as are reports on finalized procurement reviews (R.O.K, 2012).

**Supply Chain Performance**

Supply chain performance is an overall performance measurement that depends on the performance of the supply chain stages. The performance of supply chain can be defined by supply chain profitability, which has only one source of revenue: the customer (Chopra & Meindl, 2001).According to Van derv Orst (2000) supply chain performance is the degree to which a supply chain fulfils end user requirements concerning the relevant performance indicators at any point in time and at what total supply chain cost. Measurement of the entire supply chain performance is important because measurement affects decision making through the evaluation of past behaviour and through the opportunity of benchmarking. Insufficient scores on performance measures might lead to continuity problems in the short or long term, because decisions makers need information on the operations to guide their decisions. It is imperative to have a set of performance indicators at the supply chain level (Ploos,1996).According to Lambert and Pohlen (2001) a well-defined supply chain measurement system increases the chance for success by aligning processes across multiple firms, targeting the most profitable markets, and obtaining a competitive advantage thro differentiated services and lower costs. Chan (2003) concludes performance measurement as the feedback or information on activities with respect to meeting customer expectations and strategic objectives. It reflects the need for improvement in areas with unsatisfactory performance. Thus efficiency and quality can be improved.

**Empirical review**

Research Measurement of performance of firms is based on both quantitative and qualitative performance indicators Awino (2011). They provide a tool for organizations to manage progress towards achieving predetermined goals, defining key indicators of organizational performance and Customer satisfaction. It is the process of assessing the progress made (actual) towards achieving the predetermined performance goals (baseline). Measurement is managed using output measures and outcome measures.

Procurement and supply chain performance has two broad measures which includes effectiveness which refers to the extent to which by choosing a certain course of action, management can meet a previously established goal or standard and efficiency which 13 refers to the relationship between planned and actual sacrifices made to realize a previously agreed upon goal, (Carter & Mosconi, 2005).

According to Handfield (2009) there are a number of reasons for measuring procurement and supply chain activity and performance; Support better decision making due to making performance and results visible thus creating a track record of purchasing performance over time, support better communication between departments, within purchasing, with suppliers and with executive management; provide performance feedback which supports the privation or correction of problems identified during the performance measurement process and motivate and direct behaviour towards the desired end results. Van Wheele (1984) states that there are hundreds of purchasing and supply chain measures.

**RESEARCH METHODOLOGY**

Research design facilitates study efficiency, yielding maximal information. This study used descriptive design. This design was appropriate because it gave an opportunity for one aspect of a problem to be studied in-depth with minimal expenditure of effort, time and money. The target population for the study was the public sector in Kenya; the 16 state corporations. The research focused on the heads of the procurement departments in the government parastatals.

Both primary and secondary data was used for the study. The research study used a questionnaire as a key instrument for primary data collection. Secondary data was obtained from relevant literature like journals, internet and books.

Before the actual study, it was crucial to conduct a pilot study. The pilot study was done by selecting five respondents from the population and issuing them with the questionnaire. The data obtained was evaluated to ensure that questions were properly answered. However the findings from the pilot test were not included in the final results.

The questionnaires were first edited then coded to facilitate statistical analysis. Data collected was both qualitative and quantitative. Qualitative data was analyzed through content analysis. Quantitative data was analyzed through the use of frequency distribution, mean scores and standard deviations. These analyses was used to address specific objectives I to IV. With the help of Statistical Package for Social Science (SPSS) the findings were presented in form of frequency distribution tables, bar charts and pie charts. The data was summarized according to the study's specific objectives.

Descriptive statistics were used to analyze the data in frequency distributions and percentages which were presented in tables and figures. Qualitative data was analyzed thematically by categorizing them along themes which were guided by the research questions to establish links between data and major patterns that emerged from the research. Discussions and presentations of the analyzed data were done in tables,bar graphs and pie-charts.

**FINDINGS AND DISCUSSONS**

The field responses were that out of the 48 respondents surveyed, 39 questionnaires administered were filled and returned giving a response rate of 81%. Before large scale administration of the instrument, the researcher conducted a pretest to determine the reliability of the instrument. This was done by administering the questionnaires to an identified pilot unit. Five

respondents who would not be included in the final sample were randomly selected for the purpose of pre-testing the questionnaire. The feedback from the study enabled the researcher to make the necessary adjustments on the items in the research instrument.

Respondents were asked about their gender. From the results, majority (58%) were male while 42% were female.

On basis of highest academic qualification, most (47%) of respondents had undergraduate degrees while 30% had master's degree and 23% had diplomas as their highest level of education. The interpretation of this was that the workforce was well qualified and knowledgeable in their various functions and was therefore in a position to offer credible information necessary for this study**.**

Majority (67%) of the respondents had worked for between 6 and 10 years in their institutions while 33% had worked for between 11 and 20 years. The respondents had been in the organization long enough and therefore would be in position to provide actual information for this study. On position in the organization, majority (63%) of the respondents were in non-management functions, while 37% were in managerial functions. The interpretation here was that all the respondents were from the right target group thus understood the questions in the questionnaire well thus providing credible responses.

On adoption of E-Procurement, the question sought to determine whether institutions represented by the respondents had already adopted e-procurement. From the results, 89% of these organizations had adopted e-procurement while 11% had not adopted.

**Skills in E-Procurement**

**Attendance of any Training Related to E-Procurement**

This question sought to establish whether respondents had attended any form of training related to e-procurement. From the results, majority (57%) of the respondents had attended e-procurement related training while 43% had not attended any training. For those who had attended training, all said that the training helped in improving their skills on e-procurement.

**Commitment by the organization to provide e-procurement competencies**

The intent of this question was to determine whether these organizations were committed to providing their staff with the necessary competencies and skills to ensure the success of e-procurement. The results showed that 88% of respondents saying that their organizations were committed while 12% saying there was no commitment to e-procurement skills development.

**Extent to which staff competencies are a challenge to e-procurement adoption**

This was intended to determine from the respondents their opinion on the extent to which they think staff competencies have been a hindrance to e-procurement adoption in their organizations. From the results, most (41%) respondents said that staff competencies hindered e-procurement adoption to a small extent, 36% said it was to a moderate extent while 23% said it was to a great extent.

**Policies in E-Procurement Adoption**

**Policies Governing E-Procurement in Kenya**

This section sought to establish from the respondents their opinions on the Policiess governing e-procurement in Kenya. In this section a

scale of 1-5 was used. The scores "strongly disagreed" and "disagreed" were represented by mean score, equivalent to 1 to 2.5 on the continuous Likert scale (1 ≤ disagree≤ 2.5). The scores of 'neutral' represented in decision by the respondents. This was equivalent to 2.6 to 3.5 on the Likert scale (2.6 ≤ neutral ≤ 3.5). The score of "agree" and "strongly agree" represented 'agree' with the statements provided. This was equivalent to 3.6 to 5.0 on the Likert Scale (3.6 ≤agree≤ 5.0). Data was presented in means and standard deviation.

Majority respondents disagreed (mean=1.9855) that email contracts were legal in their organizations. In addition, majority respondents also disagreed (mean=1.2391) that electronic signatures were enforceable in their organization. Majority of respondents also disagreed (mean=1.2754) that electronic signatures were enforceable in the organizations. Finally, majority disagreed (mean=2.2319) that PPOA had adequately addressed the legality of e procurement in the public sector. This is in line with Kheng and Al-Hawandeh (2002) who found that the laws governing B2B commerce, crossing over to e-procurement, are still undeveloped. For instance, questions concerning the legality and force of e-mail contracts, role of electronic signatures, and application of copyright laws to electronically copied documents are still unresolved.

**Extent to which Policies is a challenge to e-procurement adoption**

This question intended to establish the extent to which inadequacy of Policies was a challenge to e-procurement adoption. From the results, majority (63%) of respondents said that inadequacy of Policies was to a great extent a challenge to e-procurement adoption in their organizations, with 20% saying it was to a very great extent. The Public Procurement and Disposal Authority recognize that the existing PPDA 2005 and PPDR 2006 Policies in Kenya may not have adequately covered aspects of e-procurement transaction.

## SUMMARY FINDINGS,CONCLUSION AND RECOMMENDATIONS

### Objectives Summary

#### Skills

From the results, majority of the respondents had attended e-procurement related training. For those who had attended training, all said that the training helped in improving their skills on e-procurement. The results showed that majority of respondents saying that their organizations were committed to e-procurement skills development. From the results, most respondents said that staff competencies hindered e-procurement adoption to a small extent, while others thought it was to a moderate extent.

#### Policies

Results indicated that majority respondents disagreed that email contracts were legal in their organizations. In addition, majority respondents also disagreed that electronic signatures were enforceable in their organization. Majority of respondents also disagreed that electronic signatures were enforceable in the organizations. Finally, majority disagreed that PPOA had adequately addressed the legality of e procurement in the public sector. From the results, majority of respondents said that inadequacy of a Policies was to a great extent a challenge to e-procurement adoption in their organizations.

### Conclusions

From the findings of this study, it was concluded that lack of Skills hindered smooth adoption of e-procurement in the public sector. Although majority

of organizations were committed to e-procurement skills development, training was still not at 100%. It was evident that employees had a great role in adoption of e-procurement and their skills, competencies and training may influence to a large extent how e-procurement is adopted and implement in an organization.

In addition, inadequate Policies was also a challenge in the implementation of e-procurement in the public sector. Although a new legal and regulatory framework in public procurement in Kenya had been developed, it had done little to enhance uptake of e-procurement in the public sector. In general, PPOA had not so far adequately addressed the legality of e procurement in the public sector.

**Recommendations**

On the extent to which Skills was a challenge in E-Procurement adoption, this study recommends that due to continuous turnover of the employees', continuous training for the incoming staff is required. In addition, for those organizations that have already been ISO accredited, training is compulsory and should be implemented. This should cover e-procurement and therefore mitigate the effects of this barrier.

On the extent to which inadequate Policies was a challenge to e-procurement adoption, formal recognition backed by legislation of the electronic procurement transactions should be encouraged to accelerate the' rate of Implementation of the System within the public sector.

**Suggested Areas for further study**

This study was carried out in the Ministry of Finance State Corporations. There is need to carry out further studies in other state corporations in other ministries to compare the results with those found in this study. In addition there is need to determine other factors that pose a challenge in e-procurement adoption other than those covered in this study.

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