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**DETERMINANTS OF E-PROCUREMENT IMPLEMENTATION IN KENYAN STATE CORPORATIONS WITHIN THE
MINISTRY OF FINANCE**

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Abstract

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. This study sought to examine the determinants of e-procurement implementation in Kenya state corporation specifically the Ministry of Finance. The study covered employee competency and legal frameworks as the main determinants. This study used descriptive research design. The total population of the study consisted of all the 16 state corporations under the Ministry of Finance. Both primary and secondary data was used for the study. The research study used a questionnaire as a key instrument for primary data collection. Pilot study was done by selecting five respondents from the population and issuing them with the questionnaire. The analysis was done with the help of Statistical Package for Social Science (SPSS). The results showed that staff competencies hindered e-procurement adoption. It also indicated that inadequate legal framework was also a challenge in the implementation of e-procurement in the public sector. From the results, inadequacy of a legal framework was to a great extent a challenge to e-procurement adoption in their organizations. The study recommends that continuous training for the incoming staff is required. It also recommend that 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. The study recommends a need to carry out further studies in other state corporations in other ministries to compare the results with those found in this study.

Key Words: Employee Competency, Legal Framework, E-Procurement, Ministry of Finance

INTRODUCTION

This chapter aims at providing sufficient information for better understanding of the study. The weakening global economic conditions are forcing organizations to reinvent their relations with customers and suppliers alike. Thus, costs must be lowered throughout the procurement process by focusing on value addition. Bottlenecks must be removed and performance measurements focus on total system efficiency and equitable reward distribution to key players in the process; to achieve win-win situations. The working principle is to create customer satisfaction at the end point of delivery and continuous improvement of process. For decades procurement performance has been attracting great attention from practitioners, academicians and researchers due to poor performance. Adoption of e-procurement has rapidly increased since 1990s; yet organisations still face challenges associated with its advent and use. Analysis by Wyld (2004) showed that in the United States only 30% of firms surveyed use e-procurement systems for request for quotations (RFQ), online auctions (25%) and e-markets (33%). Despite evidence showing advantages of e-procurement systems, many organisations are still reluctant to embrace it. Organisations need to know critical success factors in implementing e-procurement strategies, processes and systems. Due to limited vision, management of many organisations fails to appreciate the importance of system wide performance measures. Procurement professionals find that combinations of quality, service, and price are seldom exactly equal. Burt, Petcavage and Pinkerton (2010) postulated that if quality and price are equal, then supplier should be selected solely on the basis of service. Service is seldom equal and in many cases it is a supplier's capabilities that are being purchased, not commodities.

Government as a sovereign power is distinguished from commercial contracting process. In most cases, Government acts in the best interest of the public; to strive to guarantee transparency, accountability and facilitate easy access to information.

The procurement function has been particularly affected by this trend with a predicted growth in e-procurement applications covering both transactional buying and strategic sourcing activities (Croom S, 2000).

Procurement is an internal service provided by a dedicated team of professionals. It operates at the interface between the organizations, the external provider, marketplace and the organizations' operational processes (Knudsen D, 2003). This means that the procurement processes and information needs to be available to all actors in the supply chain to optimize the benefits of e procurement.

The applications which form the e-procurement landscape are designed to automate the buying cycle, optimize spend, improve process and workflow, support bidding and tendering and facilitate more effective search for products and services via the internet. It has also been suggested that such technologies will lead to closer collaboration and integration within the supply chain (Garcia-Dastugue and Lambert, 2003), although this is not necessarily an objective where applied to indirect or non-production spend.

The public procurement system in Kenya was governed by amorphous legal framework such as Treasury Circulars from 1969; then Government Supplies Manual of 1978. In 1997, Government initiated the Public Procurement Reform and Enhanced Capacity Project following recommendations of two procurement audits carried out by consultancy firm, Societe Generale de Surveillance (SGS). The audit disclosed serious shortcomings. Thus, Government decided to reform existing practices in order to achieve and enhance

economy, accountability and transparency. It harmonized all rules resulting in the Public Procurement Regulations, 2001.

An Independent Procurement Review (IPR), covering selected ministries, state corporations, and educational institutions, carried out in 2005 identified further key weaknesses. Thus, Government enacted the Public Procurement and Disposal Act 2005 and in December, 2006, the Public Procurement and Disposal Regulations 2006 were gazetted to operationalise the Act, effective from 1st January, 2007. The Act and Regulations set out rules and procedures that a procuring entity (PE) shall follow to implement procurement mandate. An effective public procurement system can contribute immensely to Kenya's socioeconomic development and particularly be the cornerstone of attaining the Vision 2030 Strategy.

Indeed Kenya's Public Procurement and Oversight Authority (PPDA 2005) (PPDR, 2006), indicate that public procurement entities are different stages of implementation whilst many have no form of e-procurement. That most of the Public Procuring and Disposing Entities' (PDE) tender notices, evaluations and award notices are either not at all or not well published and not all records of the procurement process are kept. The Public procurement in the Kenyan has been undergoing reforms starting with the Public Procurement and Disposal Act 2005 that saw the creation of Public Procurement Oversight Authority. The next step was the implementation of e-procurement for the public sector. According to e-government strategy paper 2004, e-procurement was one of the medium term objectives which were to be implemented by June 2007; however implementation of e-procurement has not significantly been visible over the period. A number of Public Procurement and Disposal entities may still be using manual procurement process and therefore may have not benefited from e-procurement. The adoption of e-procurement may have faced a number of challenges in its adoption

as well as its performance and this study sought to find out some these challenges.

Integrated Financial Management Information System (IFMIS) initial launch and development by Ministry of Finance began in 1998 and roll out to Ministries began in 2003. It has only played a partial role in the Public Finance Management (PFM). Out of ten modules targeted, only three have been configured and operating in 48 ministries/departments only. It was limited to the General Ledger (GL), Purchasing Order (PO) and Accounts Payable (AP) modules suffering from technical limitations with functionalities insufficiently interlinked; leading to fragmented approach to its use. Usage resistance was high leading to poor adoption. Design flaw prevents POs from being properly formatted and validated. Poor combination of automated and manual processes undermined quality and accuracy of data. Requisitions, POs, payment vouchers, delivery notes, invoices, and approvals were done manually. Re-engineering process can radically transform the system of SLO transactions.

E-procurement refers to the use of electronic methods in every stage of the purchasing process from identification of requirements through payment and potentially to contract management (Davila et al., 2003), There are six forms of e-procurement: e-ordering/e-maintenance repair operate, web-based enterprise resource planning, e-sourcing, e-tendering, e-reverse auctioning/e-auctioning and e-informing (de Boer et al.,2002). Some of the benefits of adopting e-procurement include savings in purchasing transaction cost resulted from less paperwork, less mistakes and more efficient purchasing process (Croom and Brandon-Jones, 2007).

Electronic procurement systems represent an important development for the purchasing process (Neef, 2001), offering benefits to the organization

through purchase process efficiency gains and price reductions (de Boer et al, 2002), enhanced collaborative relationships and significant opportunity for improving the internal service and statues of the purchasing function (Croom & Johnston, 2003).

Some of the commonly used tools in the public sector are e-Tendering, e-RFQ, e-Auctions, e-Catalogues, and e-Invoicing. These tools, including complete marketplace technologies, have been developed by the key players in the e-Procurement market such as Ariba, CommerceOne, Oracle, and SAP. Regardless of the various shapes and sizes of e-Procurement systems in the market, it has been argued that the basic procurement process is the same across the public sectors and can be addressed with straightforward technology to automate standard processes (NePP, 2007).

Procurement may be defined as the acquisition of goods and services (i.e. purchasing) and hiring of contractors and consultants to carry out works and services. Public sector procurement refers to procurement by or on behalf of ministries, departments of central government, organs of local government and state corporations (Arrowsmith et al., 2000). Procurement in the public sector aims to achieve multiple objectives. These include: economy, efficiency, fairness (i.e. nondiscrimination among potential suppliers), accountability, transparency and, where more than one country is involved, respect for international obligations (Odhiambo & Kamau, 2003). Besides its business objectives, public procurement is an instrument for the attainment of broader national socio-economic objectives such as supporting employment of citizens and income creation through preference for local suppliers; promotion of indigenous small, medium and micro enterprises (SMMEs); and, enhancement of regional integration through improvement of cross-border trade.

The subject of public procurement in Kenya has never been far from controversy (Ikiara, 2000). Many allegations of unscrupulous behaviour in public financial management in central and municipal governments or in state enterprises have been linked to procurement (GOK, 2004). The following are among the most recurring controversies with which public procurement has been associated over the last three or so decades: Corruption, rent-seeking and underhandedness between public officials and the business community; Making procurement commitments without funds and/or just because funds are available; Wasteful usage of government supplies, including fleets, and inadequate maintenance of equipment; Poor implementation of donor-funded projects due to procurement related inefficiencies; and Lack of procurement planning and absence of procurement records, including data and statistics. Future reforms in Kenya's public procurement are expected to focus on four principle areas: further institutional restructuring, training and capacity building, upgrading of procurement systems, and strengthening of operational activities (Odhiambo & Kamau, 2003). However upgrading of procurement systems may not be fully successful where use of Web technology and e-procurement are not adopted. According to e-government strategy paper 2004, e-procurement was one of the medium term objectives which were to be implemented by June 2007; however implementation of e-procurement has not significantly been visible over the period. A number of Public Procurement and disposal entities may still be using manual procurement process and faces lack of system integration and standardization issues; end-user behavior and resistance; difficulty in integrating e-commerce with other systems, and e-procurement business processes; and information and e-procurement infrastructure.

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 Ruppertsberger, 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 assess determinants of e-procurement in the Kenyan state corporations within Ministry of Finance. It was guided by the specific objectives of:

- To determine whether employee competency affects e-procurement implementation in Ministry of Finance State Corporations
- To assess how legal framework affects e-procurement implementation in Ministry of Finance State Corporations

LITERATURE REVIEW

This chapter presented the review of theoretical literature relating to technology adoption, empirical literature review, and conceptual framework of the study.

Theoretical Review

This study's theoretical framework draws on Croom and Brandon-Jones (2007), which is found useful to understand key challenges of e-procurement implementation in government sector. Their work presents evaluation of e-procurement implementation and operation from an 18-month study of e-procurement deployment across nine UK public sector organizations. The article explores key themes in e-procurement, namely system specification and implementation management. They explore the dynamic of e-procurement process in an organization and the transformational effect of e-procurement deployment. It is from this

theoretical framework that this project explored a comparative approach, Comparative analysis model, to link how the system specification and implementation management in the 18-month study of e-procurement deployment across nine UK public sector organizations with perceived challenges in adoption of e-procurement in the public sector under in this project.

Comparative analysis model assimilates best practices in areas of governance and uses the as benchmark for evaluating other government practices. The results from such evaluations are used for proposing positive changes to the desired government practices. Comparisons in this model can be used over a period to get a view of the past and present situation and compare two similar situations. This model is applicable for comparing the 18-month study of e-procurement deployment across nine UK public sector organizations and the perceived factors influencing adoption and performance of e-procurement in this study.

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 technological infrastructure 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).

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

Conceptual Framework

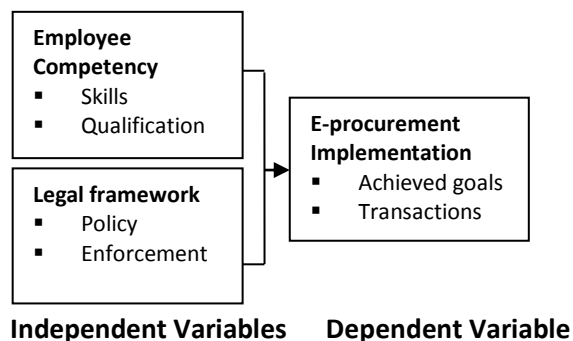


Figure 1 Conceptual Framework

Employee Competency

Procurement staff must be competent enough to use the applications of software that offers the

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.

Legal Framework

Legal framework 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 legal framework 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 initiatives. 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).

Empirical review

Research into the uptake and application of e-procurement has focused on a number of themes, as identified by Schoenherr & Tummala (2007) who noted that early research into e-procurement focused on EDI (Ramasehan, 1997), the automation of formerly manual to automated processes and the impact on the business environment (Orr, 2000). Articles appearing in 2001 dealt primarily with market transformation issues inherent in the electronic revolution, advantages of e-procurement, and recommendations and advice on successful implementations (Rajkumar, 2001).

From a sector perspective, Schoenherr & Tummala & Tummala (2007) noted that a diverse range of sectors have been researched, however, it is interesting to note that only 13% of articles relate to the government sector. Alongside these general inhibitors a number of specific inhibitors have been identified which relate to a specific sector. For example Panayiotou et al (2004) has noted that the inhibiting factors affecting the adoption of e-

procurement in the Greek public sector includes the complexity of goods/services procured, the need for transparency in procurement, the challenges posed by public policy and the regulatory and legal constraints faced by public sector organizations.

The literature (Henriksen & Mahnke, 2005) reveals that these barriers and requirements tend to increase within the public sector, mainly due the impact of different economic and social factors, which influence the public domain with respect to the private sector (Gichoya, 2005). These differences have resulted in a number of specific regulations and standards that have been developed for public e-Procurement: which requires that a bureaucratic procedure be followed due to the nature of the institutions involved (Leukel & Maniatopoulos, 2005) and embraces audit, accountability and compliance standards with national and international rules to ensure supply competition and transparency in the awarding of contracts (OGC, 2005). Croom & Johnston (2003), in their research of e-procurement in the UK public sector estimate that savings of the order of 5 – 20% are achievable in the cost of materials, with savings of the order of 50 – 70% can be achieved in relation to administration. More recent research by Puschmann & Alt (2005), in the private sector, noted that the introduction of e-procurement resulted in administrative savings of the order of 50 – 80%, however, they conclude that this range of potential savings may not be applicable to other sectors (e.g. the public sector) given the difficulties in reducing staff numbers.

Another example of the diversity of opinions regarding the scale of potential e-procurement cost savings relates to inventory. For example, Min & Galle (2002) estimated that inventory could be reduced by 20 – 25% and that order cycle times could be reduced to 5 days. Presutti (2003) concurs with this level of potential savings by noting that

sourcing cycle times could be reduced by 25 – 30%. However, Croom & Johnston (2003) suggest even greater savings in this area with processing times reduced from 5 days to 2 hours through the use of e-procurement.

RESEARCH METHODOLOGY

This study used descriptive research 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 this study was the public sector in Kenya. However, the study was limited to the Ministry of Finance in Kenya. The Ministry of Finance was of interest to this study since according to the report by Central bureau of statistics (2010) the Ministry has made great efforts to comply with e-government initiatives among them e-procurement. The total population of the study consisted of all the 16 state corporations under the Ministry of Finance. The study population was 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. The sampling frame for this study was from the list containing the names of the respondents that was sourced from the respective Human Resource Departments of the corporations. This study adopted a stratified sampling technique where the study population was stratified into management and non-management strata. Then simple random was used to select a sample of three from each corporation's department of procurement. For the sake of data collection, 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. Robson (1993) argued that piloting provides opportunity for researchers to test their confidence in identifying shortcomings that may affect the actual collection of useful data. 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. For

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 and II. 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. For data analysis, the study adopted a Fixed-effects model which assumed that the data came from normal populations which may differ only in their means. ANOVA is a data analysis procedure used to determine whether there is significant difference between two or more groups or samples at a selected probability level, (Hinkelmann, Klaus and Kempthorne, 2008).

A self-weighting estimating equation was developed out of the multiple regression analysis to help predict values for a criterion valuable from the values for several independent variables.

FINDINGS AND DISCUSSIONS

This chapter presents the data analysis and interpretations of the findings. Data was presented appropriately by use of pie charts, graphs and percentages. The general objective was to investigate the challenges of e-procurement adoption in the Kenyan Public Sector. The field responses were that out of the 48 respondents surveyed, 39 questionnaires administered were filled and returned giving a response rate of 81%. This good response rate can be attributed to the data collection procedure, where the researcher personally administered questionnaires and waited for the respondents to fill, and picked the filled questionnaires. 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. The variables of the study were found to be sufficient because all the constructs and composite reliability based on Cronbach's Alpha were above 0.75 set as the acceptable minimum by Nunnally, (1978). Demographically, respondents were asked about their gender. From the results, majority (58%) were male while 42% were female. Most (47%) of respondents had undergraduate degrees while 30% had masters degree and 23% had diplomas as their highest level of education. Based on duration worked in the organization, 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 were in position to provide actual information for this study. Majority (63%) of the respondents were in non-management functions, while 37% were in managerial functions. On adoption of E-Procurement 89% of these organizations had adopted e-procurement while 11% had not adopted.

Employee Competency in E-Procurement

On Attendance of any Training Related to E-Procurement 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. These findings are in line with World Bank survey which argued that since 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). On Commitment by the organization to provide e-procurement competencies the results showed that 88% of respondents said that their organizations were committed while 12% saying there was no commitment to e-procurement skills development. On the extent to which staff competencies was a challenge to e-procurement adoption 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.

Legal Framework in E-Procurement Adoption

This section sought to establish from the respondents their opinions on the legal frameworks governing e-procurement in Kenya. Majority of the 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. 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. On extent to which legal framework is a challenge to e-procurement adoption, majority (63%) of respondents said that inadequacy of a legal framework 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 legal framework in Kenya may not have adequately covered aspects of e-procurement transaction.

SUMMARY FINDINGS, CONCLUSION AND RECOMMENDATIONS

This chapter provides a summary of the findings of the research, the conclusions and recommendations of the study which sought to investigate the factors influencing e-procurement adoption in the Kenyan Public Sector.

Summary of Findings

From the study, it was revealed that employee competency and inadequate legal framework were a challenge to e-procurement adoption in the organizations under review.

Objectives Summary

Determining Whether Lack of Employee Competency Is a Challenge in E-Procurement Adoption among Ministry of Finance State Corporations

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.

Investigating Whether Inadequate Legal Framework Is a Challenge in E-Procurement Adoption among Ministry of Finance State Corporations

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 legal framework was to a great extent a challenge to e-procurement adoption in their organizations.

Conclusions

From the findings of this study, it is concluded that lack of employee competency hinders smooth

adoption of e-procurement in the public sector. Although majority of organizations were committed to e-procurement skills development, training is still not at 100%. 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.

In addition, inadequate legal framework is 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 has been developed, it has done little to enhance uptake of e-procurement in the public sector. In general, PPOA has not so far adequately addressed the legality of e procurement in the public sector.

Recommendations

On the extent to which employee competency 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 legal framework 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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