



FACTORS INFLUENCING IMPLEMENTATION OF E-PROCUREMENT IN THE NATIONAL GOVERNMENT: A CASE OF THE MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT

PATRICIA NJERI MAMBO

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Mambo P., Jomo Kenyatta University of Agriculture & Technology (JKUAT), Kenya

Ombui K., Jomo Kenyatta University of Agriculture & Technology (JKUAT), Kenya

Kagiri A., Jomo Kenyatta University of Agriculture & Technology (JKUAT), Kenya

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ABSTRACT

Over the last few years, the internet has changed the way business is done in every industry. E-procurement has dramatically changed the way purchasing is done. Both public and private sector institutions have embraced the benefits accrued from E-procurement practices. The Kenyan government has recognized adoption of ICT in service delivery to the public and its citizens in the Constitution. However, even given the potential benefits of e-procurement, most of the government ministries have not effectively implemented the e-procurement practices. This study sought to investigate the factors influencing the implementation of e-procurement in the Ministry of Interior and Co-ordination of National Government. The target population of this study was staff working in various Departments of the Ministry of Interior and Co-ordination of National Government and whose head office is in Nairobi. The study employed the stratified random sampling technique to come up with a sample size of 67 respondents from a population of 168. This study relied mostly on primary data collected by use of questionnaires. The study generated both qualitative and quantitative data.

Keywords: *top management commitment, ICT infrastructure*

Background of the Study

Over the last few years, the internet has evolved from being a scientific network only, to a platform that is enabling a new generation of business (Jeyaraj, Rottman & Laicity, 2006). The internet is changing the way business is done in every industry. The World Wide Web has become a source of information, goods and services. E-procurement has emerged as one of the most discussed topic in material procurement. Without doubt, it will dramatically change the way purchasing is done in the near future (Rankin, Chen & Christian, 2006). Governments of both developed and developing countries have embraced ICT to improve the quality of public service, increase public access to information and to energize more participation in civic affairs. As a result, most countries have recognized public participation in government tendering process by enhancing access to opportunities available in the government authorities such as procurement activity.

Due to ICT advancement, governments across the world have adopted e-procurement as a way to ease access to the information. E-procurement is the application of internet technology in works, material and service procurement. E-Procurement systems also allow more efficient integration of supply chains and provide better organization and tracking of transaction records for easier data acquisition (Ogot, 2009). According to Bialy

(2008) E-Procurement is an online system by which companies can be connected directly to suppliers for the purpose of buying products and services at the lowest cost possible. E- Procurement essentially replaces its offline version, called tendering. The advantages and disadvantages of E-Procurement mostly parallel the universal benefits and disadvantages of the internet. According to Bialy (2008) E-Procurement is done with a software application that includes features for supplier management and complex auctions. The new generation of e- procurement is currently on demand or software as a service. The E-procurement value chain comprises indent management, E-tendering, E-auctioning, vendor management, catalogue management and contract management. Indent management is the workflow involved in the preparation of tenders. This part of value chain is optional, with each procuring department defining its indenting process. As concerns works procurement, administrative approvals and technical sanctions are obtained in electronic format. On the other hand, in goods procurement, indent generation activity is done online (Peter, 2012).

According to Acher (2005) the public sector organizations use E-Procurement for contracts to achieve such benefits as increased efficiency and cost savings, faster and cheaper in-government procurement and improved transparency, and to reduce corruption in procurement services by eliminating interaction with suppliers. E-

Procurement in the public sector has seen rapid growth in recent years. Transactions can be standardized and all bids for products and services can be tracked more easily, allowing business owners to use such knowledge to obtain better pricing. Due to faster exchanges of information and delivery of goods and services, e-procurement also promotes shorter product-development cycles. According to Wilson (2002) e-procurement is the amalgamation of sales and purchasing business models and calls for differentiation based on application and functions. Therefore suppliers form an integral part of the implementation process and their attitude, integrity; transparency, capacity and willingness to comply play a major role in the success of the process. These suppliers would also be using e-procurement systems for management of all processes relating to purchase.

Perspective of E-procurement in Africa

Kabaj (2008) contends that an efficient public procurement system is vital to the advancement of African countries economies and is a concrete expression of their national commitment to making the best possible use of public resources. Equally, Kakwezi and Nyeko (2010) argues that the procurement departments of public entities in Uganda are faced with the problem of not having enough information about the procurement procedure, its inputs, outputs, resource consumption and results, and are therefore unable to determine their efficiency and

effectiveness. This implies that such a problem requires establishment of clear procurement guidelines, procedures and performance standards.

Performance standards when adopted can provide the decision-makers in the procurement department with unbiased and objective information regarding the performance of the procurement function. In Uganda, procurement and disposal planning are central to proper procurement management. Public Procurement and Disposal of Public Assets (PPDA) Regulation 96(1) provides that a user department shall prepare a multi-annual, rolling work plan for procurement based on the approved budget, and which is submitted to the procurement and disposal unit to facilitate orderly execution of annual procurement plans.

An important issue in public sector management today is the increasing demand for transparency, efficiency and effectiveness in service quality (Ancarani, 2008). The advent of the internet, digital connectivity, the explosion and use of e-commerce and e-business models in the private sector are pressuring the public sector to rethink their hierarchical and bureaucratic organizational models. Customers, citizens and businesses faced every day with new innovative e-business and e-commerce models implemented by the private sector and made possible by ICT (Information and Communication Technologies) tools and applications, are requiring the same from Government entities. The introduction of Electronic

Government (e-Government) is becoming increasingly popular in both the developed and developing countries to increase the efficiency and effectiveness of Government service delivery.

Perspective of E-procurement in Kenya

In Kenya, the government has recognized the adoption of ICT in service delivery to the public and citizen in general. This has gained momentum with the current Government administration. Existing literature reveals that a number of organizations in Kenya have successfully adopted the use of e-procurement technology. Gitahi (2011) cited the example of Nation Media Group which through their digital platform commonly known as N-Soko has enabled their clients to purchase products online. There is however emerging evidence of the slow uptake of the technology despite the benefits that e-procurement offers (Segal and Taylor, 2001). In the public sector, several models have been tried by different public entities to implement e-procurement. These are seller centric, buyer centric, e-marketplaces or third-party managed models.

The Public Financial Reform Management (PFMR) Strategy Paper 2001-2006 recommended automation as well as integration of key government functions such as the human resources payroll, accounting, procurement and budgeting citing transparency, better financial management and easier reporting as some of the benefits (GoK, 2001). According to the E-government Strategy Paper 2004 e-procurement was one of the medium term

objectives which were supposed to be implemented by June 2007, but the implementation process was observed to be very slow (GoK, 2004). The National Treasury, is the Ministry in Government which is spearheading the public financial management reforms. Within the ministry, there is a department called the Integrated Financial Management Information System (IFMIS) Department which has the mandate of designing, spearheading and managing the Integrated Financial Management Information System re-engineering process in all central government ministries, county governments and all government agencies.

Through this department, the Integrated Financial Management Information System (IFMIS) was developed in 1998 and the deployment of the system to ten pilot ministries started in 2003. The deployment to the counties started in 2012 after promulgation of the new Constitution and as at the date of this study, only nineteen out of forty seven counties have started using the IFMIS system. At present the intended users of the IFMIS system at the counties are being trained on the same. The Strategic Plan for GoK IFMIS (2011- 2015) outlined the development of the Integrated Financial Management System (IFMIS). Currently, the system is being re-engineered with the aim of improving the systems for management and reporting of financial data and information for the Government of Kenya.

The IFMIS implementation requirement in Kenya originated from the Ministry of Finance and Economic Planning ICT Master

Plan 2001- 2005 that highlighted gaps and weaknesses within the SIBET system that was in use (Imbuye, 2013). The master plan proposed development of different modules comprising: accounting, revenue management, asset management among others and establishment of interfaces with the National Bank Payment Information System, Kenya Revenue Authority (KRA) and the Ministry of Labour for payroll and human resource management modules. The GoK IFMIS is an Oracle based Enterprise Resource Planning (ERP) software. ERPs are large scale computer software and hardware systems that attempt to integrate all data and processes of an organization into a unified system housed in a centralized database which is accessed through a secure network. ERPs have capabilities for handling enterprise wide business processes ranging from functions such as manufacturing, logistics, distribution, inventory, shipping, invoicing and accounting.

PPOA Interim Report (2009) outlined plans to introduce e-procurement in all Kenya's public entities as a way of curbing corruption and reducing tendering delays. According to the report, the programme was set to be rolled out in 2013 after the completion of a pilot study. The system is anchored on the Integrated Financial Management System (IFMIS). The PPOA Interim Report (2009) highlighted the objectives which the Government of Kenya aims to achieve through the implementation of an e-procurement system. The objectives include the

following: First is to enhance transparency in public procurement by making the required information available in the internet. Second, according to the PPOA Interim Report (2009), cost savings can be sought through demand aggregation and higher competition as a result of wider publicity to Government procurement opportunities. Through e-procurement this can be achieved through aggregating Government departments' demand to leverage buying power with the supply market. Thirdly; through e-procurement, the objective of reduced inventory costs can be achieved through improved planning and management of inventory leading to lower levels of inventory. Fourthly; by using e-procurement, the objective of internal arbitrage can be achieved by ensuring consistency in goods and services costs at the best price across all departments at item level. Through the e-procurement system, the objective of consistent and sustainable contract development can be achieved by enabling pre-qualified vendors the opportunity to access other government departments. E-procurement can enable transactional effectiveness through automation and eliminating of non-value adding steps within the procurement to enable efficient and effective processes.

The Government of Kenya's economic blueprint for 2013-2017 notes that the ICT sector is important in the realization of the required improvement in productivity and empowerment of the citizenry. Hence a national ICT policy has been developed to enable and guide the growth of the

country's ICT sector and integrate the sector into Kenya's development, help in creation of jobs, improve productivity, increase access to professional and government services, especially for disadvantaged individuals and communities, and allow communities to make informed decisions about local resource use (Government of Kenya 2003).

Vision 2030 has placed a very high premium on the use of ICT in improving and internationalizing professional services offered in Kenya. In this regard, business process off-shoring (BPO) is proposed to be promoted with the aim of making Kenya one of the top BPO destinations in Africa. The Government has, thus, undertaken to offer world class ICT infrastructure developed by top international IT suppliers to ensure Kenyan professionals compete effectively in the international outsourcing market (National Economic and Social Council of Kenya 2013).

Statement of the Problem

The basic principle of procurement is to purchase the right quantity, at the right quality, the right price, at the right time and from the right price. Public sector buying in Kenya however places a premium on buying at the right price. Chapter 6, (227) (1) of the Kenyan Constitution, 2010, states that 'When a State organ or any other public entity contracts for goods or services, it shall do so in accordance with a system that is fair, equitable, transparent, competitive and cost-effective.' However, corruption in public procurement processes leads to

problems such as lack of accountability and transparency, lack of political control and proper audit trails, weak professionalization of the bureaucracy and many more (RoK, 2012). With the need to integrate key functions such as procurement and accounting and to streamline and enhance transparency in management of public funds as well as to provide a framework for standardized reporting, the government has adopted the policy requiring all government procuring entities to use the Integrated Financial Management Information System (IFMIS). According to CRA (2013), in the 2013/2014 financial year a total of 210 billion Kenya shillings was disbursed to the counties government to facilitate their operations. This resulted in a remarkable achievement when the government ministries reported a 42.7% drop in their procurement operating cost amounting to Ksh629 million down from KSh1.64billion in the previous year (GoK, 2014). According to Malela (2012) more than 50% of procurement processes in Kenyas public procuring entities are carried out manually. The manual processes are costly, slow, inefficient and data storage and retrieval is poor (Malela, 2010).

According to the e-government strategy paper (2004), e-procurement was one of the medium term objectives which was to be implemented by June 2007, but the process has been very slow and findings show that most of the procurement processes in public institutions are still manual with the internet only being used for e-mails and web browsing (PPOA, 2013).

This slow implementation of e-procurement in the public sector raises concern as to what factors influence the implementation of e-procurement in the Kenyan public sector particularly in government ministries. Osore (2013) pointed that introduction of e-procurement is aimed at introducing a procurement and payment System (P2P) which fully automates the procurement and payment process. The process may reduce the workload involved in the process of tendering, costs and time involved as suppliers will not have to travel long distances to place tenders in different counties and/or ministries head offices. According to Bwoga (2011) effective e-procurement processes will provide a smoke screen between the supplier and the panels dealing with the respective bids making it hard for one to try and compromise the involved procurement officials.

Mose, Njihia and Magutu (2013) conducted a study on the critical success factors and challenges in e-procurement implementation among large scale manufacturers in Nairobi, Kenya. The study concluded that most of the large scale manufacturing firms have adopted e-procurement. However these studies did not address E-procurement adoption in public sectors. Odago and Mwajuma (2013) did a study on factors affecting effective implementation of e-procurement in county governments with a focus on Kajiado County, Kenya. The study found that management support is very crucial in implementing e-procurement in the county

governments, top management is so important because it acts as the driving force behind the whole implementation process. Otieno, Muthoni and Mungai (2013) did a survey on factors affecting use of e-procurement: a survey in selected firms in Kisii Town, Kenya. The study concluded that the value of e-procurement affects the use of e-procurement being a driving force in use of e-procurement in terms of on-time delivery, reduced cost of procurement, wide source of suppliers, improved buyer-supplier relationship, high profitability and increased firms' competitiveness.

Despite the Government's sustained and incremental efforts in laying down ICT strategies in the area of Public Financial Management Reforms in order to boost transparency, efficiency and effectiveness, it is still apparent that the implementation of e-procurement is still very slow. In addition, no study has yet focused on factors influencing implementation of e-procurement in central government ministries in Kenya. This study therefore sought to investigate factors influencing implementation of e-procurement in the national government and particularly in the Ministry of Interior and Co-ordination of National Government.

Objectives of the Study

The general objective of this study was to investigate the factors influencing the implementation of e-procurement in the national government with a focus on the Ministry of Interior and Co-ordination of

National Government. Specifically the study aimed to:

1. To determine the influence of top management commitment on the implementation of e-procurement in the national government, a case of the Ministry of Interior and Co-ordination of National Government.
2. To establish the influence of information technology infrastructure on implementation of e-procurement in the national government, a case of the Ministry of Interior and Co-ordination of National Government.
3. To examine how staff training influences implementation of e-procurement in the national government, a case of the Ministry of Interior and Co-ordination of National Government.
4. To determine the influence of supplier capacity on implementation of e-procurement in the national government, a case of the Ministry of Interior and Co-ordination of National Government.

Research Questions

From the specific objectives the following research questions were answered:

1. How does top management commitment influence implementation of e-procurement in the Ministry of Interior and Co-ordination of National Government?
2. How does information technology infrastructure influence implementation of e-procurement in the Ministry of

Interior and Co-ordination of National Government?

3. What is the influence of staff training on implementation of e-procurement in the Ministry of Interior and Co-ordination of National Government?
4. How does supplies capacity influence implementation of e-procurement in the Ministry of Interior and Co-ordination of National Government?

Scope of the Study

This study focused on the factors influencing implementation of e-procurement in the national government, a case of the Ministry of Interior and Co-ordination of National Government. This study was limited to the Ministry of Interior and Co-ordination of National Government where special focus was on the various departments, under the Ministry that are headquartered in Nairobi. This involved collecting information from the staff from within the Ministry on e-procurement implementation. This was relevant in collecting the data required as time was the main limiting factor that inhibited collecting the data from all the MICNG departments across the country. The study focused both on the available literature on e-procurement adoption and primary data collected using questionnaires.

LITERATURE REVIEW

Studies done have identified a number of drivers and identified a number of benefits or drivers for e-procurement implementation and maps the progress of

usage of e-procurement across all sectors in private and public sectors. Hawking, Stein, Wyld and Forster (2004) investigated the barriers to e-procurement implementation in Australia identifying and ranking these in order of importance as inadequate technical infrastructure, lack of skilled personnel, inadequate technological infrastructure of business partners, lack of integration with business partners, implementation costs, company culture, inadequate business processes to support e-procurement, regulatory and legal controls, security, cooperation of business partners, inadequate e-procurement solutions and upper management support. Kennedy and Deeter-Schmelz (2001) concluded that organizational characteristics and organizational influences were significant motivators to the implementation of e-procurement.

According to Wu (2007) e-procurement applications focus on creating efficiencies where their goal is to make the traditional purchasing procedures more efficient and cost effective. Larsen (2008) noted that implementation of electronic commerce business models such as a procurement portal in organizations is a challenge that goes beyond mere technological functionality. Top management support organizational adaptation and training of employees are examples of issues for the successful implementation of e-business (Kawalek, 2003). Chapman (2000) pointed that e-procurement adoption in any organization is frequently determined by technical capabilities and experience with

ICT. Lin and Lee (2005) in their study illustrated that implementing a new technology such as e-procurement needs skill and knowledge to operate in the organizations and most organizations do not implement it because organizations' employees are not familiar with new technology.

In the study on e-procurement adaptation in Greece, Panayiotou (2004) pointed out e-procurement strategy, re-engineering of procurement processes and management of expectations as key success factors in an e-procurement adaptation strategy. Their conclusion was that implementation must be achieved in a manner of "incremental change" where technological solutions apply to regulations and policies. An investigation into the implementation strategy of e-Procurement in the Irish public sector concluded that fundamental changes are required in the public sector procurement environment to achieve the benefits of e-procurement approach (Lee, 2007). It was found that the key issues could be grouped into a number of areas: procurement framework and practices, organizational arrangement, e-procurement technology framework, and the legal and economic environment. Among these issues, a strong and efficient organizational aspect was identified as a very critical success factor for efficient e-procurement implementation

Technology-Organization-Environment

Technology-Organization-Environment (TOE) framework of Tornatzky and Fleischer (1990) assumes a generic set of factors to

predict the likelihood of IT adoption. The theory suggests that adoption is influenced by technology development (Kauffman & Walden, 2001), organizational conditions, business and organizational reconfiguration (Chatterjee, Grewal, & Sambamurthy, 2002), and industry environment (Kewtha and Choon, 2001). Technological context describes that adoption depends on the pool of technologies inside and outside the firm as well as the application's perceived relative advantage (gains), compatibility (both technical and organizational), complexity (learning curve), trialability (pilot test/experimentation), and observability (visibility/imagination).

Organizational context captures firm's business scope, top management support, organizational culture, complexity of managerial structure measured in terms of centralization, formalization, and vertical differentiation, the quality of human resource, and size and size related issues such as internal slack resources and specialization (Jeyaraj, Rottman, & Lacity, 2006; Sabherwal, Jeyaraj, & Chowa, 2006; Tornatzky & Fleischer, 1990). Environmental context relates to facilitating and inhibiting factors in areas of operations. Significant amongst them are competitive pressure, trading partners' readiness, socio-cultural issues, government encouragement, and technology support infrastructures such as access to quality ICT consulting services (Scupola, 2009).

TOE framework underscores Rogers' (1995) three groups of adoption predictors-leader characteristics relating to change;

internal characteristics (centralization, complexity, formalization, interconnectedness, organizational slack and size), and external characteristics (system's openness). The major snag of T-O-E is that some of the constructs in the adoption predictors are assumed to apply more to large organizations, where clients are sure of continuity and less complaints, than to SMEs. However, integrating T-O-E with other models such as TAM, with each adoption predictor offering larger number of constructs than the original provides richer theoretical lenses to the understanding of adoption behavior.

Top Management Commitment

The top management team is responsible for setting the vision and goals, bringing about collective commitment for change in processes and organizational structures, and formulating the policies and strategies necessary to put an e-procurement initiative in place (WB, 2003). If the e-procurement system does not have the full support of the top management team, there is every reason for it to fail. It is important to make sure that the top management has given full support for the adoption of e-procurement. Considerable attention and support should be provided by senior management to ensure that procurement reforms have been well understood in the agency (S & A, 2003).

Chatterjee (2006) used the term top management championship to define managerial beliefs about e-commerce initiatives in firms and participation in those initiatives. The results of quantitative

research by Chatterjee et al. (2006) prove that top management championship positively influences extent of organizational assimilation of web technologies in e-commerce strategies and activities. Managerial productivity and strategic decision aids are defined in the article of Grandon and Pearson (2004) as important factors in e-commerce adoption in organizations. Managerial productivity refers to managers' perception that e-commerce provides better access to information, helps in the management of time, improves communication among managers.

Top management can stimulate change by communicating and reinforcing values through an articulated vision for the organization. Top management support is critical for creating a supportive climate for the adoption of new technologies. Top management support, organizational adaptation, and training of employees are examples of issues for the successful implementation of organization IT system (Kawalek, 2003). Jeyaraj (2006) found that top management support to be one of the best predictors of organization adoption of Information System innovations. Top management can stimulate change by communicating and reinforcing.

According to Chatterjee (2006) top managers nowadays continuously emphasize to adapt to the Internet applications; they often advise employees to be sensitive to competitors' initiatives with regard to e-business; top managers insist that their employees must bring more

of their business practices online in order to meet customers' future needs; they are willing to try to provide the necessary resources for implementing e-business practices; they often advise employees to keep track of the latest developments in Internet technology and Internet related business practices, and incorporating e-business practices in company. Top manager emphasis on e-business, would facilitate performance gains from e-business adoption.

Supply managers and internal stakeholders can easily drive user adoption and system compliance through significant change management efforts and ongoing education of end users. This is because of the interactions made by suppliers and businesses who they supply to and those that manufacture or supply to them. Suppliers therefore become highly active internal marketers of e-procurement systems because of several interactions especially in the case of public procurement. Suppliers if involved early in e-procurement initiatives are therefore able to play an active role in the process's refinement and efforts in change management (Aberdeen, 2005). Particular benefits of e-procurement in the public sector are thought to include greater transparency in procurement through electronic publishing of tender notices and contract awards. This in turn is likely to enhance accountability and reduce the instances of corruption. When developing a business case for adopting e-procurement, it is important to assess the baseline

benefits and costs associated with the process or processes to be automated in order to understand the probable outcomes of e-procurement adoption or enhancement (Scupola, 2009).

Senior executives have traditionally viewed IT as a back office function that is a “necessary cost” of doing business, without any strategic implications. In the recent years senior managers are now looking at IT as a strategic resource and key enabler of growth. Throughout negotiations the procurement manager can further credibly guarantee the supplier a level of prompt payment, which was not possible prior to e-procurement, David Eakin (2002).

Information Technology Infrastructure

Technological resources have been consistently identified as an important factor for successful information systems adoption. Technologies have changed and redefined the way organizations and government corporations operate. Organizations adopt new technologies to improve the efficiency and effectiveness of various work processes. Unfortunately, many technology-based products and services never reach their full potential, and some are simply rejected (Burton-Jones & Hubona, 2006). Failed investments in technology may not only cause financial losses, but also lead to dissatisfaction among employees (Venkatesh, 2000). Hence, explaining and predicting user adoption of new technology is important. New technology adoption by service employees is affected by various factors. Some of them include; technology

readiness, technology integration and interoperability with the existing IT systems and the IT security applications. Research by Parasuraman and Colby (2009) pointed that technology readiness (TR) is a key factor in the adoption of innovative products and services. TR refers to the propensity to adopt and embrace technology in home life or work. It reflects a set of beliefs about technology and is not an indicator of competence. TR is highly predictive of the speed of technology adoption and level of usage of technology in consumer households and organizations. TR is multifaceted, with some factors being contributors and some factors behind inhibitors.

According to Mose, Njihia & Magutu (2013) private and public sector organizations have been utilizing information technology (IT) systems to streamline and automate their purchasing and other processes over the past years. Chaffey (2009) states there have been many attempts to automate the process of procurement for the buyer using electronic procurement systems (EPS), workflow systems and links with suppliers through electronic data interchange (EDI). Further, not all the technology is in place yet to enable the Government to take full advantage of internet commerce (PPOA, 2009). The PPOA in 2009 identified issues in identification of parties in a transaction, synchronization, confidentiality, data integrity and bandwidth as the major considerations that the government had to make before taking full advantage of the benefits of e-procurement.

Similarly, drawing attention to the fact that the effects of ICT work in favor of both market and hierarchies, Baker et al., (2004) argue that due to the complexity of business activities and interdependence between various factors determining the organizational form, the final outcome might not depend solely on ICT. However, other studies indicate that ICT leads to a change in firm boundaries and encourages firms to depend less on hierarchies and conduct more transactions at arm's length. The arguments of Malone et al., (1987) are supported by Hitt et al., (1999) who found that, overall, increased use of ICT was associated with substantial decreases in vertical integration. Examining the relationship between firm size and ICT investment, Brynjolfsson et al., (2004) found evidence that increased ICT expenditures were correlated with decreasing firm size.

Dai and Kauffman (2008) argue that Internet-based e-procurement systems and B2B electronic market solutions need to be compatible to the greatest possible extent with the existing technologies, to have a reasonable chance to be widely adopted in the marketplace. Talluri et al., (2006) identify internal business risks arguing that implementing an e-procurement solution not only requires that the system itself successfully performs the purchasing process, but it integrates with the existing information infrastructure, in addition companies are uncertain about having the appropriate resources to successfully implement an e-procurement solution. For

E-procurement technologies to succeed, suppliers must be accessible via the Internet and must provide sufficient catalogue choices to satisfy the requirements of their customers. Suppliers, especially in low margin industries, may be hesitant even unable to meet such demands without guarantees of future revenue streams (Davila et al., 2003). Davila et al., (2003) also identify technology risks in e-procurement explaining that companies also fear the lack of a widely accepted standard and a clear understanding of which E-procurement technologies best suit the needs of each company. The significance of this risk factor seems to suggest the need for clear and open standards that would facilitate inter-organization e-procurement technologies. Without widely accepted standards for coding, technical, and process specifications, e-procurement technology adoption will be slow and fail to deliver the benefits as expected.

E-commerce technologies have a great potential to influence the direction of the productivity in an organization; however the willingness to adopt is determined by a number of factors, among them, reduction of transaction costs, improvement of customer service quality, defensive reaction to competitor's adoption, requirement by customers that their suppliers link their system as a condition for doing business, (Thong, 1999). Mukhopadhyay et al., (2002) argues that new technologies lower searching and filtering costs and by increasing the number of sourcing options

companies can therefore intensify the competition between suppliers and increase their bargaining position. E-procurement can therefore enable a company lower search and evaluation costs as well as increase the number of potential suppliers through e-informing.

E-commerce as one of the innovations provided for by the internet has been widely accepted by different sectors worldwide and is therefore not a new concept. E-Procurement applications focus on creating efficiencies with the goal being to make the traditional purchasing procedures more efficient and cost effective (Wu, 2007). The development and implementation of electronic commerce business models such as a procurement portal in organizations is a challenge that goes beyond mere technological functionality (Turban et al, 2006). Adopting of a new technology needs skill and knowledge to operate in the organizations and most organizations do not implement because organizations' employees are not familiar with new technology. Empirical evidence identifies that organization whose employees have the necessary skills and technical knowledge are more likely to implement e- Government applications (Lin and Lee, 2005).

Hittet (1999) notes that the use of ICT in a business is associated with less vertical integrations meaning that a business is able to conduct more transactions without the need to increasing or invest more in physical capacity. The concept of e-procurement can therefore be used to

improve transactions and reduce costs in a business. De Boer et al. (2002) indicate that various cost reductions and benefits have been already identified in the use of e-procurement. The concept of e-commerce in which e-procurement has a central function has become an avenue for improving effectiveness through cost savings and productivity improvements in business transactions that involve the purchase of goods, services and works (Neef, 2001). E-procurement solutions have widened the range of Business to Business (B2B) as well as Business to Government (B2G) transactions by introducing innovative processes in public administration based on information and communication technologies (Scupol, 2009). The move to e-procurement that is supported by internet technologies has been gradual.

Tonkin (2003) indicates that the public sector undertakes e-procurement initiatives because it is believed that certain cost reductions and benefits including those related to public policy imperatives will arise without the considerations of the implications. The items involved in public procurement range from simple items or services such as office clips or cleaning services to large commercial projects such as the development of infrastructure including roads, military equipment and airstrips. With government as a service provider, a basic measure of a successful or failed public e-procurement will be manifested through quality and magnitude of the services it provides.

Staff Training

Armstrong (2000) points out that training is the formal and systematic modification of behavior through learning which occurs as result of education instruction development and planned experience. The fundamental aim of training is to help the organization achieve its purpose by adding value to its key resources the people it employs. Training means investing in people to enable them to make the best use of their natural abilities. The objectives of training are to develop the skills and competence of employees and improve their performance, help people to grow within the organization in order that as far as possible in new job as appointment transfer or promote and ensure that they become fully competent as quickly and economically as possible. Effective training can minimize learning costs, improve individual, terms and co-operate performance in terms of output, quality speed and overall productivity. To improve operational flexibility by extending the shape of skills possessed by employees (multi-skilling) increases the commitment of employees by encouraging them to identify with the mission and objectives of the organization and to provide high level of services to customer.

According to Dessler (2000) it is important to evaluate training in order to assess its effectiveness in producing the learning outcomes specified when the training intervention was planned and to indicate where improvements or changes are required to make the training eve more effective. It is at the planning stage that the

basis upon which each category of training is to be evaluated should be determined. At the same time, it is necessary to consider how the information required evaluating events. Should be obtained and analyzed. The process of evaluating training has been defined by Habun (1974) as "Any attempt to obtain information (feedback) on the effects of a training programme and to assess the value of the training in the light of that information". Evaluation leads to control which means deciding whether or not the training was worthwhile. Preferably in cost benefit terms) and what improvement are required to make it even more cost effective.

Due to the increase of technological advancement, constant training on the skills to handle all kinds of problems in communication to achieve effective communication is essential. For example until recently office switchboard operator all the individual telephone was received and make calls controlled telephone system. But recent microelectronics has been introduced and so increased commercial competition. And so employees have to train to achieve the goal of organization. Training of staff plays quite an important role in the organization. It comprises of monitoring and planning, welcoming change and equipping people to adapt in any organization. Training ensures that an organization has people with the correct mix of attributes which is achieved by the provision of appropriate learning opportunities and enabling them to reform

to the highest levels of quality and service (Bentley 1994).

According to Saleemi (1997) training is the process of increasing knowledge and skills of an employee for doing particular jobs. It is an organized activity designed to create a change in the thinking and behavior of people and to enable them to carry out their jobs in a more efficient manner (Saleemi at el 1997). Laird (1985) defined training as the acquisition of the technology which permits employees to perform up to standard. Thus training may be defined as an experience, a discipline or a regimen which causes people to acquire new pre-determined behaviors. One of the most powerful benefits of collecting satisfaction data is the ability to analyze service down to the technician level. This gives companies the ability to offer targeted training to employees based on areas needing improvement.

Handling the customer entails everything from setting customer expectations properly to always looking at the situation from the customer's point of view. Companies that collect customer satisfaction data have come up with very creative ways to train and motivate employees using this information. This relatively effortless act can be a catalyst to train and motivate employees to improve service delivery. Training and awarding top performing service departments with things as simple as a trophy or a fun outing can create enthusiasm and teamwork. Allocating cash bonuses based on customer service satisfaction results achieved through

meeting various training targets can naturally increase employee satisfaction levels, suggesting that the higher the satisfaction scores, the bigger the bonuses (Render & Dugan, 2004).

Employees respond to positive feedback, and sharing positive customer comments and customer service improvement program satisfaction feedback with employees can enhance employee satisfaction levels. If positioned correctly with rewards for outstanding performance, comparing satisfaction results achieved by various training programs between different groups can create a natural competitiveness among peers and elevate service levels. It can also help employees better understand the importance of their jobs and how their individual performance correlates to higher customer satisfaction levels and service delivery. To achieve productivity in any sector including the security sector, employees should be analyzed to determine their training needs and the relevant training offered to enable them perform as required (Berman, 2005).

Supplier Capacity

Given the benefits of e-procurement, there still exist many organizations that have not effectively embraced the practice (Arasa & Achuora, 2012). Kinyanjui and McCormick (2002) note that Kenya has a wide range of organizations struggling to adopt information and communication technology in their procurement functions. According to Wilson (2002), e-procurement is the amalgamation of sales and purchasing

business models and calls for differentiation based on application and functions.

The first application is the buy-side procurement which refers to an organization using electronic systems to purchase goods, such as office stationary, from contracted suppliers. These suppliers are also using e-procurement systems for management of all processes relating to purchase. This is simply coalescing of the corporate procurement portals and business to employees (B2E) applications. The second application is sell-side procurement. This model is used to describe how one supplier sells to a number of buying organizations using electronic systems such as, using e-procurement systems and-commerce technology. Sell-side procurement model is often used extensively in B2C (business to consumers). Well-designed sell-side solution is usually offering a higher level of customizations for each buyer than their B2C retail counterparts. This type of model attracts big supplier firms that have a stronger position in relationship with their buyers. The last application is e-marketplace and trading hubs which is a combination of industry consortium and the trading exchanges. The marketplace model brings together many different buying and selling organizations in one trading community. The most popular e-marketplace function is auction used for variety of product category. This type of model often helps to increase collaboration between companies in a single industry sector or providing the opportunity of e-procurement to

companies, who would normally be too small to benefit (Parida & Sophonthummapharn, 2008).

Sigala (2003) indicates that e-purchasing adoption can be influenced by a large firm size and purchasing workforce. The rationale is that a buying firm with a larger purchasing unit is more likely to adopt e-purchasing, as it has greater information processing capacity, needs and organizational power than smaller firms. Moreover, a buying firm with a large purchasing unit is also more likely to possess the financial, skill resources and bargaining power to achieve the economies of scale required. On the other hand, small scale suppliers also lack in ICT knowledge and technical skills. Walczuch, Van Braven and Lundgren (2000) attributed the failure of European small and medium enterprises (SMEs) to utilize e-commerce to their lack of e-commerce and Internet knowledge. Because of the obstacles in developing the necessary skills and technical knowledge, many firms postpone ICT adoption until they gain sufficient internal expertise.

Khanapuri (2011) asserts that there are a number of requirements relating to the adoption of e-procurement system, including technology, objectives, information, staffing and skills. The requirements make the adoption process face a number of challenges such as compatibility, integration, adoption and regular use by employees and lack of capacity by small suppliers. Companies require investing in a good IT system with access to the web and integration to the

customers. In addition the staff handling the system will require to be empowered. According to World Bank (2013) the cost of purchasing e-procurement software can be huge and may be prohibitively expensive for smaller organizations. They must consider not only the price of the software itself but other costs associated with the system and its implementation. Those additional costs include networking infrastructure, information technology hardware and software, application design, development and implementation, training, and maintenance of equipment. There is also the time required for employees to learn the new system.

E-Procurement Implementation

E-procurement is the acquisition of goods and services without the use of paper processes (Panayiotou, Sotiris & Tatiopoulos 2004). Procurement activities can be grouped and defined in three different ways: indirect procurement, direct procurement and sourcing (Minahan & Degan, 2001). Indirect procurement involves selecting, buying and management of supplies for the day to day running of the company. Direct procurement may sometimes be called supply chain management and involves buying goods and organizing activities to manufacture finished products. Sourcing can apply to both indirect and direct procurement and involves a four phase model (information, negotiation, settlement and after-sales) (Kim & Shunk, 2003).

Electronic procurement / tendering is not a strategy in itself but the use of electronic

means to carry out the procurement / tendering process (Minahan & Degan, 2001). The buying process has considerably changed with the introduction of the internet and e-procurement removing lost time and errors resulting from the exchange of paper and retyping of data (Egbu, Vines & Tookey, 2004). Although the opportunities for improvement seem abundant, both private and public sector are still cautious as far as the adoption of electronic technologies is concerned (Zheng, Caldwell, Harland, Powell, Woerndl, and Xu, 2004). Private and public sector organizations have been utilizing Information Technology (IT) systems to streamline and automate their purchasing and other processes over the past years. It is only in the past decade that e-Procurement systems have attracted attention. While there is debate about how recently e-Procurement has emerged, (Dai & Kauffman, 2001; Koorn, Smith & Mueller, 2001), there is no doubt that the use of the internet in e-procurement provides several advantages over earlier inter-organizational manual processes and tools.

The study looked at the following model :

Technology Acceptance Model

Davis (1993) developed and validated the Technology Acceptance Model (TAM) to explain the mechanisms that influence and shape users' acceptance of new information technology. According to TAM, there are two specific variables that are fundamental determinants of users' attitude toward using information technology and actual use of the system: perceived usefulness and

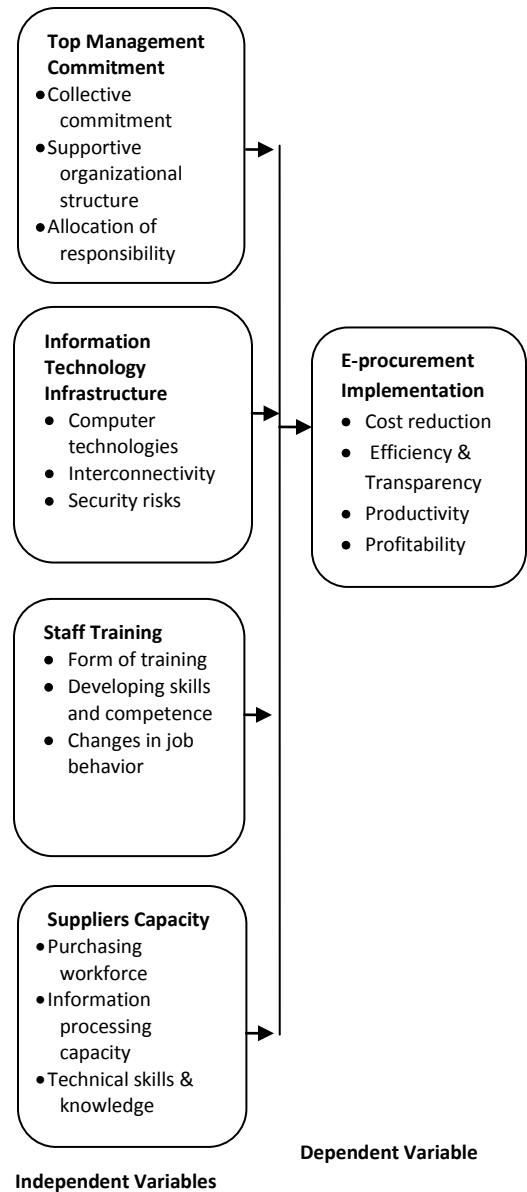
perceived ease of use relatively to new information system design features.

Usefulness is defined as the degree to which someone believes that using a system will enhance his performance and ease of use is defined as the degree to which user believes that benefits of systems' use are outweighed the efforts for using it. Before e-procurement adoption, administrators have to assess employees' attitude across to this new information technology, in order to prevent a failure in implementation and waste of resources. Administrators have to provide safe and high quality services under the pressure of limited resources. Computers, information systems and technologies have penetrated to public organizations and enhanced their performance by providing better communication, access to information and knowledge and promoting innovation and efficiency (Dewett& Jones, 2001).

A well designed process and policy willing can be essential pre-conditions for e-procurement implementation. However, there is a crucial variable which put at risk the success of the implementation. This variable tends to be users' acceptance of the new process. E-procurement consists of change for the organization and specifically for the employees of the procurement unit (Kaliannan, Awang, Raman & Dorasamy, 2008). Abolition of the traditional handwritten procedure and its replacement of new procedures based on the use of computer and information technology consist some of the major changes. Resistance to change is a barrier for e-

procurement process construction and users' acceptance isn't considered given (Rahim, 2008).

Figure 1:Conceptual Framework



Most developing and developed countries governments would like to implement public e-procurement technology in such a

way, as to enhance transparency and accountability in government procurement processes. The basic principle of the government procurement is straightforward: to acquire the right item at the right time and at the right price. The process should be open, objective and transparent. However, corruption in public procurement processes has led to problems such as lack of accountability and transparency, political interference, weak internal controls, abuse of office, red tape and many more.

To overcome these concerns relating to corruption in government procurement, information and communication technology (ICT) can play an important role to reduce financial wastage by promoting good governance (Jennings D, 2001) enhancing relationships between government employees and citizens, tracking activities, monitoring and controlling the government employees and reducing potentiality of corrupt behaviors. ICT enabled technology and especially public e-procurement plays an important role in minimizing the risk of corruption in public procurement processes (OECD, 2008).

Recently, many least developed countries have focused on e-procurement systems as a key tool to reduce corruption by opening competition in government procurement processes to the public. The public procurement in the Kenyan public sector 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, but the process was very slow. The manual processes are costly, slow, inefficient and data storage and retrieval poor (Malela, 2010).

In Kenya, though electronic commerce is viewed as involving many ministries, Communication Commission of Kenya (CCK) is responsible for revitalizing and transforming the economy into modern market oriented through e-commerce (Republic of Kenya, 2006). Many firms have registered dismal performance in terms of business growth and profit making because of insufficient and unsustainable procurement procedures. Employees have been fired because of low performance rate persistent lateness and wrong attitude towards work (Johnson, 2008).

Research Gaps

There have been various developments in public procurement and disposal which had for long been challenged by a lack of a clear legal framework and inefficiencies in the entire process of procurement. A process of continuous reforms in the sector since the late 90's has resulted in a better regulated public process through the Public Procurement and Disposal Act (2005), The Public Procurement and Disposal Regulations (2006) and the Suppliers Practitioners Management Act (2007). The regulations have created several autonomous bodies that also form part of

the developments of the public procurement system in Kenya over the years. Part of the developments in the government procurement system has been the adoption of the Integrated Financial Management Information System (IFMIS) since the year 2005 as its sole accounting and resource management system. The government uses IFMIS for several initiatives including Electronic Payment System, e-Government Receipt Accounting System, State Public Procurement Portal and Integrated Human Resource Management system among others.

According to e-government strategy paper (2004), e-procurement was one of the medium term objectives which was to be implemented by June 2007, but the process has been very slow and findings show that most of the procurement processes in public sector are still manual with the internet only being used for e-mails and web browsing (PPOA, 2013). This slowed adoption of e procurement in the public sector raises concern as to what challenges face adoption of e-procurement in the government ministries in Kenya. Regardless of the recognition of the value of e-procurement, it is clear from the study by Gunasekaran and Ngai (2008) that the adoption of e-procurement is still very slow. It is against this background that the study sought to find out what factors affect the implementation of e- procurement in the national Government ministries in Kenya.

RESEARCH METHODOLOGY

Research Design

Orodho (2003) defines a research design as the scheme, outline or plan that is used to generate answers to research problems. The study adopted a descriptive research design. According to Cooper and Schindler (2003) a descriptive study is concerned with finding out the what, where and how of a phenomenon. This study was therefore able to generalize the findings to all other national Government Ministries involved in procurement practices.

Population

According to Mugenda and Mugenda (2003) population refers to an entire group of individuals, events or objects having a common observable characteristic. The population in this study was the Ministry of Interior & Co-ordination of National Government. The target population of this study was the employees working in departments under the Ministry of Interior & Co-ordination of National Government whose head office is in Nairobi. Mugenda and Mugenda (2003) explains that the target population should have observable characteristics to which the researcher intends to generalize the result of the study. This definition assumes that the population is not homogeneous.

Table 1 Target Population

Target Population	Frequency
Procurement Officers	40
HR officers	40
Finance/Accounts Officers	24
ICT Officers	40
Administrators	24
Total	168

Sample and Sampling Techniques

The sampling plan describes the sampling unit, sampling frame, sampling procedures and the sample size for the study. The sampling frame describes the list of all population units from which the sample was selected (Cooper and Schindler, 2003). The list of employees was obtained from the respective Ministry departments' personnel sections. The study employed stratified random sampling technique in coming up with a sample size of 67 respondents from a total of 168 from the specific departments within the Ministry whose head office is in Nairobi, this represents 40% of the total population. Mugenda and Mugenda (2003) states that for descriptive studies 10%-40% of the accessible population is a representative sample.

Table 2 Sampling and Sample Size

Population	Population	Sample Population	Sample size	Sample (%)
Procurement Officers	40	40	16	24
HR Officers	40	40	16	24
Finance/Accountants	24	40	10	14
ICT Officers	40	40	16	24
Administrators	24	40	10	14
Total	168	40	67	100

Data Collection Instruments

The study adopted a questionnaire to collect primary data. Questionnaires are appropriate for the study since they collect information that was not directly be observable as they inquire about feelings,

motivations, attitudes, accomplishments as well as experiences of individuals (Mellenbergh, 2008). The questionnaire comprised of both pen and close-ended questions. Franker (2006) stated that a questionnaire is useful in obtaining objective data because participants are not manipulated in any way by the researcher. Further, a questionnaire has the added advantage of being less costly and using less time as an instrument of data collection. The data instrument addressed the four research objectives while it was sub-divided into two sections. The first section of the questionnaire enquired on general information about the respondents, while the next sections sought to answer the four objectives, that is, top management commitment, information technology infrastructure, staff training and suppliers' capacity.

Data Collection Procedures

After consent was given by the University administration to collect data, the researcher coordinated the data collection process after seeking permission from the Ministry. The researcher engaged three research assistants who assisted in data collection. The research assistants were taken through training to clearly understand the research instruments, purpose of the study and ethics of research. The researcher and research assistants administered the questionnaires to the respondents face to face.

Pilot Testing

Cooper and Schindler (2010) indicate that a pilot test is conducted to detect

weaknesses in design and instrumentation and to provide proxy data for selection of a probability sample. The pilot testing was conducted using the questionnaire on 10 staff in the same institution. The rule of thumb is that 10% of the sample should constitute the pilot test (Cooper & Schilder, 2011). The proposed pilot test was within the recommendation. The pilot testing group was selected through random sampling. The purpose of the pilot testing was to establish the validity and reliability of the research instruments and hence enhance face validity (Joppe, 2000).

Reliability

Reliability of the questionnaire was evaluated through administration of the said instrument to the pilot group. A construct composite reliability co-efficient (Cronbach alpha) of 0.6 or above, for all the constructs, was considered adequate for this study. The acceptable reliability coefficient is 0.6 and above (Rousson, Gasser and Seifer, 2002). Cronbach Alpha was used to test the reliability of the research instrument.

Validity

According to Mugenda and Mugenda (2003) validity is the accuracy and meaningfulness of inferences, based on the research results. One of the main reasons for conducting the pilot study was to ascertain the validity of the questionnaire. The study used both face and content validity to ascertain the validity of the questionnaires. Content validity draws an inference from test scores to a large domain of items similar to those on

the test. Content validity is concerned with sample-population representativeness. Gillham (2008) stated that the knowledge and skills covered by the test items should be representative to the larger domain of knowledge and skills.

RESEARCH FINDINGS AND DISCUSSION

Response Rate

The study targeted a sample of 67 respondents from the Ministry of Interior and Co-Ordination of National Government. However, out of 67 questionnaires distributed 53 respondents completely filled in and returned the questionnaires, this represented a 79% response rate. This is a reliable response rate for data analysis as Mugenda and Mugenda (2003) pointed that for generalization a response rate of 50% is adequate for analysis and reporting, 60% is good and a response rate of 70% and over is excellent. However, 21% of the respondents were reluctant to fill out the questionnaire. This was partly due to reasons such as the respondents being unavailable to fill the questionnaires at the required time despite persistent follow-ups. However, the response rate demonstrates enthusiasm of the respondents' to partake in the survey that the study sought.

Table.1 Response Rate

Response	Frequency	Percentage (%)
Filled in questionnaires	53	79
Un returned questionnaires	14	21
Total	67	100

Demographic Characterization of the Respondents

The study sought to establish the background information of the respondents. This is vital as it would reflect on the reliability of information based on information given by the respondents. As part of the general information, the researcher requested the respondents to indicate the Department where they work, position held by the respondents in the department, highest level of education qualification, how long the respondents had worked in the organization and the extent to which e-procurement is applied in that particular department of the Ministry.

Department where Respondents Work

Table 4.2 indicates the departments where respondents work within the Ministry. From the findings most (36%) of the respondents work in procurement, 21% work as administrators, 19% were from the HR section, 17% were working at ICT, 8% were working within the finance/accounts section while 6% were from other departments within the Ministry. This implies that all departments that were targeted by the study were involved in the study and that the findings are not biased.

Table 2 Department where Respondent Work

Population	Frequency	Percentage
Procurement	19	36
Human resource	10	19
Finance/Accounts	4	8
ICT	9	17
Administration	11	16

Others	3	6
Total	53	100

Position Held by the Respondents

The study aimed at investigating the positions held by the respondents within their department. From the findings (33%) of the respondents were unit heads, 22% were their assistants, 18% were technical personnel, 14% were departmental heads while 4% were administrators. This depicts that all participants of the study were under the level at which the study targeted as stipulated herein.

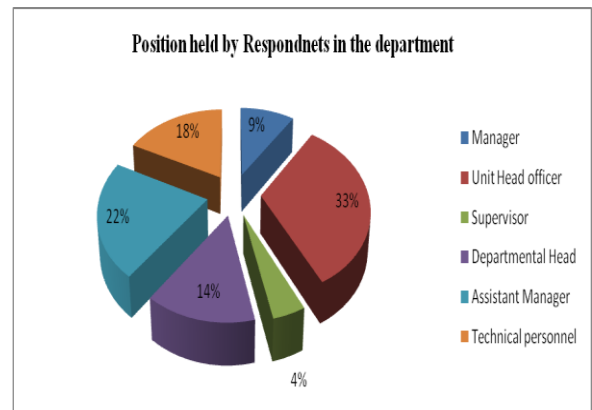


Figure 2 Position held by the Respondents in their Respective Department

4.3.3 Education Level of the Respondents

The researcher was also inquisitive to determine the highest level of academic qualification that the respondent held. Table 3 shows the findings of the result, majority (53%) of the respondents were undergraduates, 36% of the respondents were postgraduates while the rest (11%) held a diploma as their highest level of education. This depicts that most of the

staff working at the Ministry of Interior and Co-ordination of National Government are literate and hence they are capable of understanding any strategic decision that the Ministry formulated with the aim of delivering quality services to the public.

Table 3 Education Level of the Respondents

Respondents	Frequency	Percentage
Post graduate	19	36
Undergraduate	28	53
Diploma	6	11
Total	53	100

Duration of Service

Figure 3 illustrates working duration of the respondents in their respective departments in the government ministry, from the findings most (48%) of the respondents had worked in the government ministry for a period of 1-5 years, 27% had worked for a period of above 16 years, 15% had worked for a period of 11-15 years while the rest (10%) had served in the government ministry for a period of 6-10 years. This implies that most of the respondents of this study had worked for an ample time thus they were conversant with the information that the study sought pertaining to the Ministry.

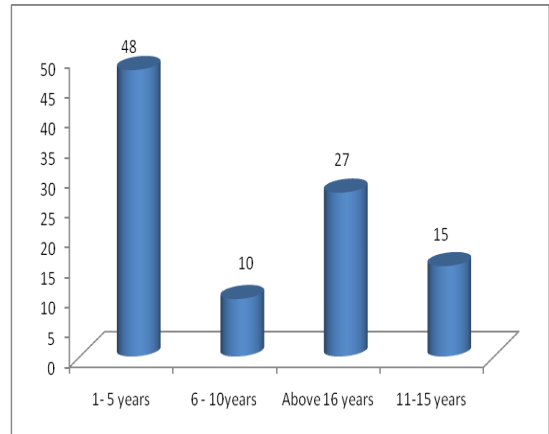


Figure 3 Duration of Service

Implementation of E-procurement

Table 4 illustrates the summary of the findings on implementation of e-procurement in procurement practices. According to the findings, majority (72%) of the respondents pointed that the ministry had adopted e-procurement in its procurement practices in their respective departments, 23% indicated that their department had not adopted e-procurement while the rest (6%) alleged that the ministry had adopted e-procurement only partially. This implies that the ministry had recognized the advancement of ICT in tendering and service delivery to the public.

Table 4 Implementation of E-procurement

Extent of Implementation	Frequency	Percentage
Yes	38	72
No	12	23
Partially	3	6
Total	53	100

4.4 Top Management Commitment

The study sought to establish whether top management was committed to e-procurement implementation. Figure 4 presents the results of the findings on whether top management was committed to e-procurement adoption. Majority (77%) of the respondents indicated that the top management is extremely committed on e-procurement implementation while 23% diverged with the majority opinions. If the e-procurement system does not have the full support of the top management team, there is every reason for it to fail. Considerable attention and support should be provided by senior management to ensure that the procurement reform has been well understood in the agency (Grandon & Pearson, 2004).

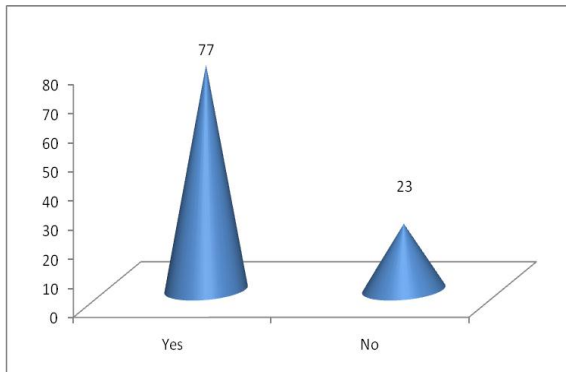


Figure 4. Top Management Commitment and E-procurement Implementation

4.4.2 Aspects of Top Management Commitment on E-procurement Implementation

Table 5 illustrates the finding of the study on the extent to which aspects of top management commitment influences e-

procurement implementation. From the findings, most of the respondent agreed that monitoring processes set by the top management influences e-procurement to a great extent as indicated by a mean of 4.01, respondents also agreed that supportive organizational structure and allocation of responsibility to individuals influences e-procurement to a great extent as depicted by mean of 3.77 and 3.70 respectively. Further, respondents agreed that set goals, strategies and baseline influence e-procurement to a great extent as shown by mean score of 3.64, lastly respondents agreed that coordination of activities and collective commitment influences e-procurement to a great extent as depicted by the mean score of 3.52. World Bank (2003) illustrated that the executive management team is responsible for setting the vision and goals, bringing about collective commitment for change in process and organizational structures and formulating the policies and strategies necessary to put an e-Procurement initiative in place.

Table 4 Top Management Commitment to E-procurement Implementation

Aspects of Top Management	Mean	STDev
Collective commitment	3.52	0.168
Supportive organizational structure	3.77	0.297
Allocation of responsibility	3.70	0.198
Monitoring processes	4.01	0.196
Set goals, strategies and baseline	3.64	0.284
Coordination of activities	3.53	0.325

Influence of Top Management Commitment on E-procurement Implementation

Figure 5 illustrates the findings of the study on the influence of top management commitment on e-procurement implementation. Majority (57.5%) of the respondents' purported that top management commitment influences e-procurement implementation to a great extent, 23% were of the opinion that top management commitment influences e-procurement implementation to a very large extent while 19% argued that top management commitment influences e-procurement implementation to a moderate extent. According to Chatterjee et al. (2006) pointed that top management championship positively influences extent of organizational assimilation of Web technologies in e-commerce strategies and activities. Likewise, Jeyaraj (2006) found that top management support to be one of the best predictors of organization adoption of Information System innovations.

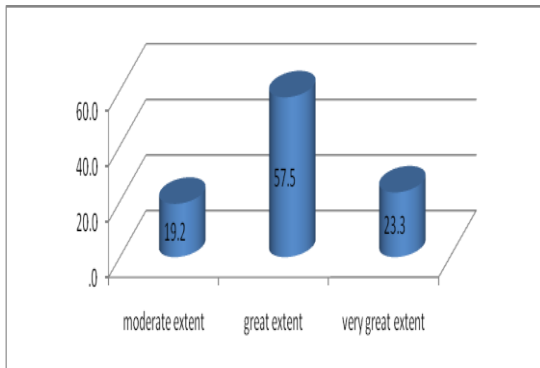


Figure 5 Influence of Top Management Commitment on E-procurement Implementation

Adequate Information Technology Infrastructure

The study requested the respondent to indicate whether their department had adequate IT infrastructure. From the findings, 77% of the respondents pointed out that their department had adequate IT Infrastructure while the rest (23%) indicted that their department did not have adequate infrastructure that can handle the volume of the work required in e-procurement implementation. This implies that technological resources are an important factor for successful adoption and implementation of innovation systems. Failed investments in technology infrastructure may cause operation breakdown and also lead to dissatisfaction among employees or the targeted group (Venkatesh, 2000). On the other hand, Turban et al, (2006) pointed that the development and implementation of electronic commerce business models such as a procurement portal in organizations is a challenge that goes beyond mere technological functionality.

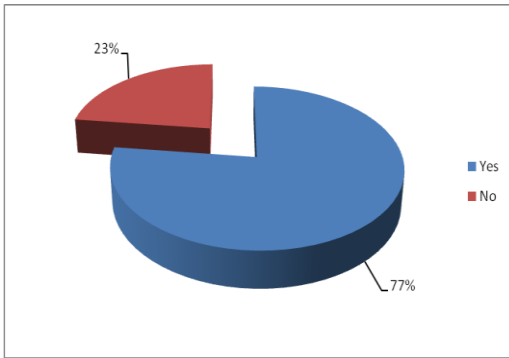


Figure 6. Adequate Information Technology Infrastructure

Aspects of IT Infrastructure on E-procurement Implementation

The researcher requested the respondent to indicate their level of agreement on the aspects relating to information technology infrastructures that influence e-procurement implementation. From the findings most of the respondents agreed that computer technologies and rapid technology changes influences e-procurement implementation to a great extent as shown by mean score of 3.74 and 3.73 respectively. Likewise, respondents pointed that information security risks and networking infrastructure influences e-procurement implementation to a moderate extent as illustrated by mean score of 3.47 and 3.44 respectively. The finding illustrates that availability of Information technology infrastructure lower searching and filtering costs hence increasing the number of sourcing options beneficiary can access from the service provider. According to Mose, Njihia & Magutu (2013) private and public sector organizations have been utilizing information technology (IT) systems to

streamline and automate their purchasing and other processes over the past years.

Table 5 Aspects of IT Infrastructure on E-procurement Implementation

Aspects of IT Infrastructure	Mean	STDev
Computer technologies	3.74	1.041
Information security risks	3.47	0.899
Rapid technology changes	3.73	0.87
Networking infrastructure	3.44	0.943

Extent that Information Technology Infrastructure influence E-procurement Implementation

Figure 7 illustrates the findings of the study on the influence of IT infrastructure on implementation of e-procurement. Majority (34%) of the respondents' purported that IT infrastructure influences implementation of e-procurement to a great extent, 23% were of the opinion that IT infrastructure influences implementation of e-procurement to a very large extent while 19% argued that IT infrastructure influences implementation of e-procurement to a moderate extent. This illustrates that IT infrastructure had a great influences on implementation of e-procurement within government ministries. E-commerce technologies have great potential to influence the direction of the productivity in an organization (Thong, 1999).

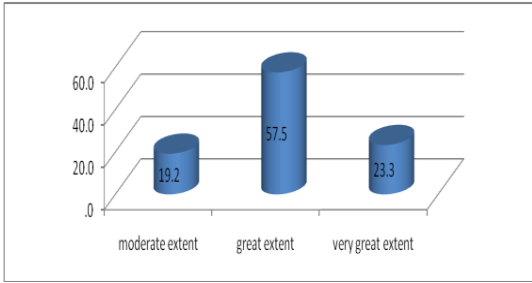


Figure7. Extent that Information Technology Infrastructure influence E-procurement

Procedure of Staff Training on Implementing E-procurement process

Figure 8 shows the result of the findings on the existence of procedural staff training on implementation of e-procurement. Majority (60%) pointed that there were set procedures on training staff on e-procurement implementation while the rest 40% were of the opinion that there were no set procedures of training staff on e-procurement implementation. To achieve productivity in any sector, employees should be analyzed to determine their training needs and the relevant training offered to enable them perform as required (Berman, 2005). The finding implies that the fundamental aim of training is to help the organization achieve its purpose by adding value to its key resources the people it employs.

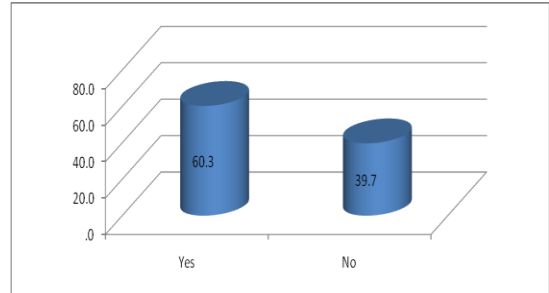


Figure 8. Existence of Procedure for Training Staff on Implementing Strategy

Aspects of Staff Training that Influence Implementation of E-procurement

The researcher requested the respondents to indicate the extent to which staff training influences e-procurement implementation. Most of the respondents agreed that developing skills and competence influences e-procurement implementation to a great extent as depicted by mean score of 3.84, respondents also agreed that operational flexibility and form of training influences e-procurement implementation to a great extent as shown by the mean score of 3.67 and 3.63 respectively. Further respondents agreed that monitoring and planning influences e-procurement implementation to a great extent as illustrated by a mean score of 3.56, few of the respondents pointed that changes in job behavior influence e-procurement implementation to a moderate extent as shown by mean score of 3.18. Armstrong (2000) effective process and procedure of staff training can minimize learning costs, improve individual, terms and co-operate performance in terms of output, quality speed and overall productivity.

Table 7. Aspects of Staff Training on Implementation of E-procurement

Aspects of Staff Training	Mean	STDev
Operational flexibility	3.67	1.131
Monitoring and planning	3.56	0.913
Changes in job behavior	3.18	0.948
Developing skills and competence	3.84	0.746
Form of training	3.63	0.808

Extent that Staff Training Influences Implementation of E-procurement

The study sought to establish the extent to which staff training influences implementation of e-procurement. Most (41%) of the respondents alleged that staff training influences implementation of e-procurement to a very great extent, 36% to a great extent, 14% to a moderate extent, 6% to a very low extent while the rest affirmed that staff training influences implementation of e-procurement to a low extent. Training ensures that an organization has people with the correct mix of attributes which is achieved by the provision of appropriate learning opportunities and enabling them to reform to the highest levels of quality and service (Bentley 1994).

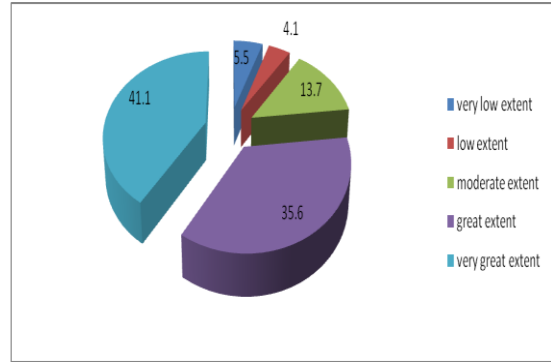


Figure 9. Extent that Staff Training Influences Implementation of E-procurement

Suppliers Capacity and its influence on E-procurement Implementation

The study further sought to establish whether suppliers' capacity had an influence on e-procurement implementation. Figure 10 shows the results of the findings, majority (63%) of the respondents indicated that supplier capacity influences e-procurement implementation while the rest 37% were of the opinion that supplier capacity does not influence e-procurement implementation. According to Wilson (2002), suppliers capability to implement e-procurement brings with it a host of benefits that improve process efficiency, increase organizational effectiveness, facilitate collaboration with suppliers, and optimize control over demand and spend.

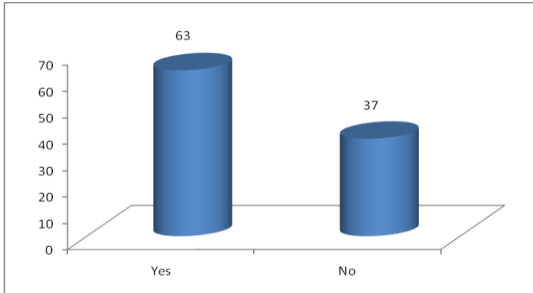


Figure 10. Suppliers Capacity and its influence on E-procurement implementation

4.7.2 Aspects of Suppliers' Capacity on E-procurement Implementation

Table 8 summarizes the findings of the study on the extent that suppliers' capacity influences e-procurement implementation. Most of the respondents agreed that supplier's ability to adopt ICT, supplier information processing capacity and supplier early involvement influence e-procurement implementation to a great extent as depicted by the mean scores of 3.71, 3.66 and 3.62 respectively. Further, respondents agreed that supplier technical skills and knowledge influences e-procurement implementation to a great extent as depicted by mean score of 3.54. On the other hand respondents pointed that supplier's purchasing workforce and the networking infrastructure available to suppliers influence e-procurement implementation to a great extent as shown by the mean score of 3.25 and 3.14 respectively. Braven and Lundgren (2000) attributed that the failure to utilize e-commerce is due to the lack of e-commerce and internet knowledge by the suppliers and the targeted population.

Table 6 Aspects of Suppliers' Capacity on E-procurement Implementation

Aspects of Suppliers' Capacity	Mean	STDev
Adoption of ICT	3.71	1.067
Supplier Involvement	3.62	1.133
Purchasing Workforce	3.25	0.91
Information Processing Capacity	3.66	1.027
Technical Skills & Knowledge	3.54	1.121
Networking Infrastructure	3.14	0.947

Extent that Suppliers Capability influence E-procurement Implementation

Figure 11 shows results of the findings on the extent to which suppliers' capability influence e-procurement implementation. From the findings, (58%) of the respondents were of the opinion that suppliers' capability influences e-procurement implementation to a great extent, 23% purported that suppliers' capability influences e-procurement implementation to a very great extent while 19% alleged that suppliers' capability influences e-procurement implementation to a moderate extent. World Bank (2013) opined that without an integrated end-to-end e-procurement system, one cannot track and identify the potential of the suppliers who can offer the expected service.

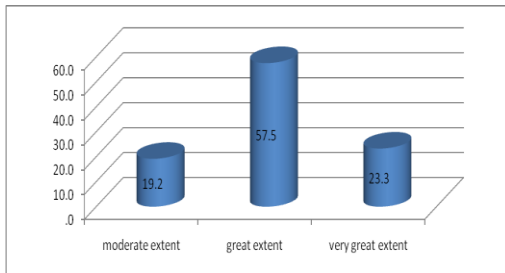


Figure 11 Extent that Suppliers Capability influences E-procurement Implementation

E-procurement Implementation

Table 9 summarizes the benefits that would accrue from the implementation of e-procurement. Most of the respondents pointed that cost reduction, access to information, confidentiality and improved operational efficiency were some of the benefits that would accrue to their respective departments with the implementation of e-procurement as depicted by the mean scores of 3.71, 3.66, 3.62 and 3.54 respectively. Further, respondents alleged that improved production, professional service delivery and increased operational effectiveness were also some of the benefits that would accrue from the implementation of e-procurement as shown by the mean scores of 3.56, 3.53 and 3.50 respectively.

Table 7 Benefits of E-procurement implementation

Benefits of E-procurement implementation	Mean	STDev
Cost reduction	3.71	0.067
Improved operation efficiency	3.62	0.133
Improve production	3.56	0.191
Access to information	3.66	0.027
Improved service delivery	3.53	0.121

Increased operational effectiveness	3.50	0.942
Confidentiality	3.64	0.947

Coefficient of Correlation

To compute the correlation (relationship) between the study variables and their findings the researcher used the Karl Pearson's coefficient of correlation (r). From the findings, it was clear that there was a positive correlation between e-procurement implementation and top management commitment as shown by a correlation figure of 0.523, it was also clear that there was a positive correlation between e-procurement implementation and IT infrastructure with a correlation figure of 0.6140, there was also a positive correlation between e-procurement implementation and staff training with a correlation value of 0.7460 and a positive correlation between e-procurement implementation and suppliers' capacity with a correlation value of 0.5210. In general, this shows that there was a positive correlation between e-procurement implementation and top management commitment, IT infrastructure, staff training and suppliers' capacity.

Table 8 Coefficient of Correlation

		E-procurement	top management commitment	IT infrastructure	Staff training	Suppliers' capacity
E-procurement implementation	Pearson	1				
	Correlation					
	Sig. (2-tailed)					
Top Management Commitment	Pearson	.52	1			
	Correlation					
	Sig. (2-tailed)	.0032				
IT Infrastructure	Pearson	.6140	.3421	1		
	Correlation					
	Sig. (2-tailed)	.0021	.0014			
Staff Training	Pearson	.7460	.1240	.0621	1	
	Correlation					
	Sig. (2-tailed)	.0043	.0120	.0043		
Suppliers' Capacity	Pearson	.5210	.3420	.0000	.1660	1
	Correlation					
	Sig. (2-tailed)	.0172	.0031	1.0000	.0031	

Coefficient of Determination

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (implementation of e-procurement) that is explained by all the four independent variables (top management commitment, IT infrastructure, staff training and suppliers' capacity).

The four independent variables that were studied, explain only 83.4% of the factors influencing implementation of e-procurement as represented by the adjusted R². This therefore means that other factors not studied in this research explain 16.6% of the factors that influence the implementation of e-procurement. Therefore, further research should be conducted to investigate the other factors (16.6%) that influence implementation of e-procurement in the national government ministries.

Table 9 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.913	0.834	0.751	0.4538

4.8.3 Regression Coefficient

Multiple regression analysis was conducted so as to determine the relationship between the dependent variable and the independent variables. As per the SPSS version 21.0 generated table 4.12, the equation

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

becomes:

$$Y = 1.308 + 0.558X_1 + 0.731X_2 + 0.785X_3 + 0.620X_4$$

The regression equation above has established that taking all factors into account (top management commitment, IT infrastructure, staff training and suppliers' capacity) constant at zero, implementation of e-procurement will be 1.308. The findings presented also shows that taking all other independent variables at zero, a unit increase in top management commitment will lead to a 0.558 increase of e-procurement implementation; a unit increase in IT infrastructure will lead to a 0.731 increase of e-procurement implementation; a unit increase in staff training will lead to a 0.785 increase in e-procurement implementation and a unit increase in suppliers' capacity will lead to a

0.620 increase in e-procurement implementation. This infers that staff training contributes the most to implementation of e-procurement followed by IT infrastructure then suppliers capacity while top management contributed the least to implementation of e-procurement.

Table 4.10 Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	1.308	0.4538		2.88	.007
Top Management Commitment	0.558	0.172	0.318	3.24	.002
IT Infrastructure	0.731	0.210	0.348	3.48	.001
Staff Training	0.785	0.067	0.918	11.56	<.001
Suppliers' Capacity	0.620	0.148	0.419	4.19	<.001

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary of Major Findings

The objectives of this study were to determine the influence of top management commitment on the implementation of e-procurement in the Ministry of Interior and Co-ordination of National Government, to establish the influence of information technology infrastructure on implementation of e-

procurement in the Ministry of Interior and Co-ordination of National Government, to establish the influence of staff training on implementation of e-procurement in the Ministry of Interior and Co-ordination of National Government and to determine the influence of supplier capacity on implementation of e-procurement in the Ministry of Interior and Co-ordination of National Government.

Influence of Top Management Commitment on the Implementation of e-Procurement

From the study findings, top management in most of the department under the ministry are extremely committed to e-procurement implementation with monitoring processes, supportive organizational structure, set goals, strategies and baseline, coordination of activities and collective commitment influencing e-procurement implementation to a great extent.

Influence of Information Technology Infrastructure on Implementation of e-Procurement

In regard to information technology infrastructures, the study established that computer technologies and rapid technology changes, information security risks and availability of robust networking infrastructure influences e-procurement implementation to a great extent.

Influence of Staff Training on Implementation of e-Procurement

In the area of staff training, the study established that developing the skills, competences of employees, operational flexibility and the form of training, proper monitoring and planning of training influences e-procurement implementation to a great extent.

Influence of Supplier Capacity on Implementation of e-Procurement

In regard to suppliers' capacity, the study established that majority of the respondents indicated that supplier capacity had an influence on e-procurement implementation. Supplier' ability to adopt ICT, their information processing capacity and early supplier involvement influenced e-procurement implementation to a great extent.

E- Procurement Implementation

On the benefits of e-procurement implementation, the study established that cost reduction, access to information, confidentiality, improved operational efficiency, improved production, professional service delivery and improved operational effectiveness were some of the benefits that would accrue to the respective departments under the Ministry of Interior and Co-ordination of National Government with implementation of e-procurement.

Conclusion

The study sought to establish the factors that influence implementation of e-procurement in the national government with a focus on the Ministry of Interior and Co-ordination of National Government.

Based on the findings, the study concluded that top management in most departments is extremely committed to e-procurement implementation. In addition, aspects of top management such as monitoring processes, supportive organizational structure, set goals, strategies and the baseline, coordination of activities and collective commitment influences e-procurement implementation to a great extent.

In the area information technology infrastructure, the study concluded that computer technologies and rapid technology change, information security risks and availability of robust networking infrastructure influences e-procurement implementation to a great extent.

In regard to staff training, the study established that developing employee skills, competences, operational flexibility and form of training and monitoring and planning staff training influences e-procurement implementation to a great extent.

In regard to supplier capacity, the study illustrated that majority of the respondents indicated that suppliers capacity had an influence on e-procurement implementation. Supplier capability to adopt ICT, supplier information processing capacity and early supplier involvement influences e-procurement implementation to a great extent.

5.3 Recommendations

The study recommends that for e-procurement to be effective and become an important part of supply chain management top management need to own and spearhead the e-procurement implementation process in order to reduce perceptions of risk and enhance employee buy-in. E-procurement initiatives only deliver the planned benefits if the users and buyers make changes to the way they work, which requires championing the project and senior management sponsorship.

The study recommends that the government should adopt progressive ICT policies to ensure supportive IT infrastructure are in place complete with protective measures against IS security risks. Government should play a crucial role in ensuring that IT infrastructure and thus technology is available to the public institutions so as to support e procurement strategies. This can be done through increased ICT budget allocations and consultative stakeholder roundtables.

There is also need for the government to provide continuous learning and education with comparative benchmarking opportunities to ensure the optimum use of the implemented e-procurement system. There is also need to establish and develop the IT competences of supply chain staff so as to acquire the requisite knowledge and skills which are necessary for the successful implementation of a public e-procurement system. This can be done through periodic comprehensive training need analysis.

The study recommended that suppliers be involved early in the e-procurement implementation process in order to allow them play an active and defining role in the improvement of the public procurement process. This would also help in the change management.

Particular benefits of e-procurement in the public sector are thought to include greater transparency in procurement through electronic publishing of tender notices and contract awards. This in turn is likely to enhance accountability and reduce the instances of corruption and abuse of office. This study therefore recommends that the government critically assess the baseline benefits and costs associated with the process of e-procurement implementation in order to understand and proactively

develop the necessary strategies to deal with the probable outcomes of the process.

Areas of Further Study

The study sought to establish the factors that influence implementation of e-procurement in national government ministries with a focus on the Ministry of Interior and Co-ordination of National Government. The researcher thus recommends further comparative research studies on the factors that influence implementation of e-procurement in the devolved county governments. Further, research studies in this area of e-procurement implementation would improve literature on the topic as well as improve the capacity of government ministries, departments and agencies to fast track the implementation of e-procurement.

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