

**IMPLEMENTATION OF THE GOVERNMENT ELECTRONIC
PROCUREMENT SYSTEM IN THE COUNTY OF MOMBASA,
KENYA**

BY

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DECLARATION

This research project report is my original work and has not been submitted for any award in any other university.

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This research project report has been submitted for examination with my approval as University supervisor.

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The success of this research project is as a result of a substantial contribution from a large number of persons.

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May the Almighty God reward you accordingly.

DEDICATION

I find it worthy and justified to dedicate this research project to all adult learners who strive and toil hard in their educational pursuits. May the Almighty God give them courage and hope.

ABSTRACT

Over the years, procurement process has continued to evolve in both private and public sector. The traditional manual procurement process has recently received a facelift to electronic procurement process courtesy of the advancement in Information Communications Technology (ICT) that has been able to provide an electronic interphase in procurement processes. As part of the Government's initiative to reform the Public Finance Management (PFM) system and restore the public confidence in the use of public funds, the government of Kenya introduced an Integrated Financial Management Information System (IFMIS), e-procurement module that would enhance efficiency in planning, budgeting, procurement, expenditure management and reporting in the National and County Governments. The business case for implementing the e-procurement system has been said to include; the envisaged improvement in transparency, accountability, traceability of all transactions, prevention of corruption and fraud, provision of audit trail, reduced procurement time and enhanced value for money among others. This study was geared towards establishing the factors necessary for implementation of e-procurement in Mombasa County, the level of readiness of the County Government procurement to adopt the e-procurement system and the perceived level of improved efficiency upon implementation of such an initiative. The result from the research identified a number of infrastructural supports that the management has made to ensure successful implementation of the system. There has been tremendous progress on capacity building through equipping the procurement staff with knowledge, skills and tools necessary to adopt and implement the e-procurement system in order to reap its benefits fully upon implementation. The study nonetheless, established some gaps that may jeopardise the implementation process of the new system. It therefore recommended a need to have a project management team to spearhead system implementation. Further, all stakeholders need to be involved in implementation especially the suppliers who would eventually be directly affected by the new system in one way or the other. Since public procurement is governed by an Act of parliament, e-procurement processes need to be legislated as well. There should be an e-procurement manual/guide and other procurement documents in electronic form for reference. The study also recommends allocation of adequate funds for infrastructure and capacity building purposes for the successful implementation of the e-procurement. To this end, the County will be able to reap fully the benefits of the Government's e-procurement initiative.

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ABBREVIATIONS AND ACRONYMS

BACS	Bankers Automated Clearing System
CIPS	Chartered Institute of Purchasing and Supply
CPD	Continuous Professional Development
EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
ICT	Information Communications Technology
IFMIS	Integrated Financial Management Information System
IS	Information System
ISM	Institute for Supply Management
ISP	Internet service provider
IT	Information Technology
KISM	Kenya Institute of Supplies Management
KPI	Key Performance Indicator
MRO	Maintenance Repair and Operations
MRP	Material Requirement Planning
MRPII	Manufacturing Resource Planning
OGC	Office of Government Commerce
P&SM	Purchasing and Supplies Management

PFM	Public Finance Management
PPDA	Public Procurement and Disposal Act
RFQ	Request for Quotation
SAP	Systems Application Program
SPSS	Statistical Packages for Social Sciences
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
XML	Extensible Mark-up Language

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

In today's dynamic global business competition scenario, web based technology is no longer an afterthought, rather it is a must. With emergence of internet and information, communication technology (ICT) applications, business entities are strained to shift their operations from traditional way to the virtual e-business, e-procurement and e-supply chain philosophy (Lee, Ni & Koc, 2001). E-Procurement has been defined as the use of Internet-based (integrated) information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Croom & Brandon-Jones, 2004). Local Authority Strategy for e-procurement report (2003) identifies the three areas where e-procurement implementation strategy in the public sector should be focused to ensure that the required practices, processes and systems are developed and rolled out in a consistent manner across the public sector. These areas are organization and management, practices and processes and systems and technology.

E-procurement systems have been proven within various Government organizations as an effective tool for instituting procurement reforms and establishing a fully transparent and open procurement environment. However, e-procurement implementation particularly in Government sector has been faced with many challenges (OGC, 2003). Some of the challenges faced includes: lack of awareness and capacity building programs; lack of proper IT infrastructure and internet readiness

lack of cross-Governmental coordination and ineffective implementation of the system and resistance to convert to e-procurement. Past studies have identified Technology Acceptance Model (Davis, Bagozzi, & Warshaw, 1989) and Theory of Planned Behaviour (Ajzen, 1991) to predict and understand the adoption of an online system such as e-procurement system. Integrating the two theories provides a more comprehensive model of e-procurement adoption and contributes to the theoretical development of behaviour formatting toward e-procurement adoption.

The public sector procurement has been riddled with allegations of fraud, corruption and inefficiencies arising from weaker controls in procurement processes. E-Procurement has today become a common theme of many organizations for the promotion of transparency and good governance in procurement for many developed and developing nations. It has also become an effective tool for instituting procurement reforms and establishing a fully transparent and open procurement environment. To this end, the Kenyan Government through the Integrated Financial Management Information System (IFMIS) has established a platform through which e-procurement system will be conducted in order to automate procurement process all the way from requisition, tendering, contract award to payment. (CIO East Africa, 2014)

1.1.1 Electronic Procurement

E-Procurement refers to the use of internet-based (integrated) information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and

post-purchase review (Croom & Brandon-Jones, 2004). The concept of e-procurement gained popularity around the year 2000 with the emergence of the two competitors Ariba and Commerce One, companies that specialized in the support of electronic procurement for MRO products (Segev, Gebauer & Faber, 2000) With the help of 'buy-side solutions' large companies started to build up their own electronic multi-vendor catalogues. The introduction of Internet-based procurement applications induced a shift from a centrally organized procurement (central buying) department to a 'desktop procurement' environment, where the employee in need of a product would initiate the purchase transaction electronically. With these two trends, 'decentralized purchasing' and 'multi-vendor catalogues', the path toward increased electronic support of the MRO buying process was paved.

The traditional purchasing procedures which consisted mainly of three phases; identification phase, ordering phase and post-ordering phase, has been faulted for a number of inefficiencies including a sequence of non-value adding clerical activities; excessive documentation up to a minimum of seven different documents for a new purchase (requisition, enquiry, quotation, order acknowledgement, advise note, goods received note and invoice), excessive time in processing orders both internally and externally and excessive cost of purely transactional activities among others. (Lysons & Farrington, 2006)

With the evolution, adoption and implementation of e-procurement systems, both private and public have been able to enjoy hard, soft and intangible benefits that it brings along. The hard benefits include; automatic purchase to buy process,

automation of p-card purchasing, electronic payment of invoices, lower prices by means of strategic sourcing, average inventory reduction, reduce head count and supply base rationalisation. The soft benefits include; freeing up purchasing staff time, reduced maverick buying, improved supplier monitoring, improved order tracking and improved availability of management information and accounting. Intangible benefits include such things as cultural changes consequent on implementation of e-procurement. (Lysons & Farrington, 2006)

1.1.2 Implementation of Electronic Procurement System

Information Systems (IS) literature defines implementation as an effort beginning with the first thought of developing a system and not ending until the project is completed or abandoned (Ginzberg, 1979). However, Chan and Swatman (1998) state that IS implementation is best described as a process of organizational change that extends over a considerable period of time. Cooper and Zmud (1990) propose a five-stage framework of initiation, adoption, acceptance, routinization, and infusion explaining how IT solutions (application) can be implemented in organizations. Infusion is the stage at which the e-procurement solution is used within the organization to its full potential. As most e-procurement initiatives in various organisations are in their infancy stage, this approach can be a guide in the selection of specific e-procurement initiatives in the public sector.

A study by Consortium for Global Electronic Commerce (2002) indicate that a significant portion of the initial value proposition often is not ultimately delivered due to problems related to technology, business process, and people or organizational

issues. A report by Local Authority Strategy for e-procurement indicate that e-procurement implementation strategy should be focused to ensure that the required practices, processes and systems are developed and rolled out in a consistent manner across the public sector. Difficulty in establishing a single e-procurement adoption and implementation model stems from the diversity of e-procurement applications across various entities domains, diversity of e-procurement system's adoption and buyers as well as its impact on inter-public entity systems and internal business processes. Hence, public entities should ensure that implementation perspectives such as organization and management, practices and processes and systems and technology are incorporated due to their significance in the implementation of an e-procurement system. (Local Authority Strategy for e-procurement report IBM, 2003).

1.1.3 E-Procurement in the Public Sector

The public sector can be defined as that part of the economy concerned with providing various Government services. The composition of the public sector varies by country, but in most countries the public sector includes such services as the military, public transit and care of public roads, public education, along with healthcare and those working for the Government itself, such as elected Government officials. The public sector provides services which benefit all of society rather than just the individual who uses the service. Public e-procurement has been defined as the use of information and communication technology such as internet/web based system by Governments in conducting their procurement relationship with bidders for the acquisition of goods, works, services and other consulting services required by the public sectors. (Davila, Gupta & Palmer, 2003; Leipold, Klemow, Holloway & Vaidya, 2004).

According to Burton (2005) public procurement is the major instrument in aiding the efficient management of public resources. It ensures support for the works and services of the Government and covers all acquisitions, including stationery, furniture, and temporary office staff as complex and high cost areas such as construction project, aircraft carriers, and other private financial initiative projects. Governments including developed and developing ones are on the process to implement public e-procurement technology in a way to enhance transparency and accountability in Government procurement processes. The basic principle of the Government procurement is basically to acquire the right item at the right time with the right price through a process that is open, objective and transparent. However, corruption in public procurement processes leads to problems such as lack of accountability and transparency, lack of control and auditing, weak professionalization of the bureaucracy and many more. (Neupane, Soar, Vaidya, & Yong, 2012).

To overcome these concerns in the government procurement, information and communication technology (ICT) can play an important role by promoting good governance (Bertot, Jaeger & Grimes, 2010), enhancing relationships between Government employees and citizens, tracking activities, monitoring and controlling the Government employees and reducing potentiality of corrupt behaviours. ICT enabled technology especially public e-procurement plays an important role for minimizing the risk of corruption in public procurement processes (OECD, 2008). As such, the Government has called on the Government procuring entities and the Government suppliers for goods, works and services to embrace e-procurement

system as this is a system that increases visibility, transparency and accountability in requisition, tendering contract award and payment.

1.1.4 Public Entities in Mombasa County

Cap 416 describes public entity as the Government or any department of the Government; the courts; the commissions established under the constitution; a local authority; a state corporation; the Central Bank of Kenya; a co-operative society; a public school; a public university; a college or other educational institution maintained or assisted out of public funds. The Kenya public procurement process is established by the public procurement and disposal Act 2005. The act specifies the procedure to be followed by the public entities when making procurement or disposal of a public asset.

The promulgation of the new constitution brought in devolution which split the Government in to national and County Governments with each having ministries to ensure that Government resources are devolved to facilitate socio-economic development at both national and county levels. It's the responsibility of the ministries at both national and county levels to initiate and guide all departments to prepare their ministerial budgets.

Mombasa County is one of the 47 Counties of Kenya. It is the capital and city in the County of Mombasa. Initially it was one of the former districts of Kenya but in 2013 it was reconstituted as a County, on the same boundaries. The County is situated in the South Eastern part of the former Coast Province. It borders Kilifi County to the North, Kwale County to the South West and the Indian Ocean to the East. The County and

the city are divided into four divisions namely: Mombasa Island, Changamwe, Likoni and Kisauni. The County is composed of six parliamentary constituencies which include Changamwe, Jomvu, Kisauni, Nyali, Likoni and Mvita.

The County Government of Mombasa, whose headquarters is located in the Annex Wing on 4th Floor of Bima House in Mombasa town, was formed on 14th March, 2013 following the implementation of the new constitution clause forming the counties. The structure of the County Government of Mombasa is composed of the Governor, Deputy Governor, County Executives, County Secretary and County Officials. The County Government of Mombasa has eleven Departments which include: Agriculture Livestock and Fisheries, Education, Finance and Economic Planning, Health, Planning Land and Housing, Tourism Development, Trade, Energy and Industry, Transport and Infrastructure, Water and Environment, Youth, Gender and Sports and Inspectorate.

The Integrated Financial Management Information System (IFMIS) system was created by the Government to enhance efficiency in planning, budgeting, procurement, expenditure management and reporting in the National and County Governments in Kenya. IFMIS was born as a Government's initiative to reform the Public Finance Management (PFM) system and aimed at enhancing accountability and transparency. These reforms whose main objective was to strengthen PFM systems by enhancing transparency, accountability and responsiveness to public expenditure and to fight against wasteful spending and corruption, targeted the core PFM systems of budget formulation and execution, public procurement and revenue

collection among others. The IFMIS e-procurement module was launched by the Kenyan Government in August 2014 thereby mandating the public procurement personnel to implement it in their various entities (CIO East Africa, 2014)

1.2 Research Problem

Croom and Brandon-Jones (2004) define e-procurement as the use of internet-based (integrated) information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and post-purchase review. E-procurement systems have been proved within Government organizations as an effective tool for instituting procurement reforms and establishing a fully transparent and open procurement environment aimed at promoting transparency and good governance in procurement (United Nations, 2011). Some of the benefits of adopting e-procurement system are: In-built approvals at various levels of the procurement process to enhance accountability; Increase of visibility of all financial activities related to procurement of goods and services; Curtails risk of fraud and other errors like double payments created through manual purchasing environment; Provides electronic payment thereby eliminating payment delays; Eliminates paper work and reduces loss of documents and inconveniences being linked to item master which has indicative prices ensures curbing of price variations for similar products/services and reduces processing time and costs; curtails risks of errors.

The public sector spends over £150 billion a year on the goods and services needed to deliver public services (OGC, 2008). Public procurement being a Government

business system is concerned with the Government procurement process; hence the processes are expected to be more transparent and accountable. However, challenges such as unjustified or hidden procurement planning, lack of need assessments, lack of monitoring capacity of Government, inconsistent cost estimate are always experienced (Ware, Moss, Campos & Noone, 2012). Other challenges faced especially in the traditional purchasing procedures consisted mainly of three phases namely identification phase, ordering phase and post-ordering phase, have been faulted for a number of inefficiencies such as a sequence of non-value clerical activities, excessive time in processing orders and excessive costs of purely transactional activities among others (Lysons & Farrington, 2006).

E-procurement has become an effective tool for instituting procurement reforms and establishing a fully transparent and open procurement environment. Information and Communication Technology enabled technology especially public e-procurement plays an important role for minimizing the risk of corruption in public procurement processes by enabling transparency, accountability and efficiency (OECD, 2008). As such, the Government has called on the Government procuring entities and the Government suppliers for goods, works and services to automate their procurement processes all the way from requisition, tendering, contract award to payment. These reforms are aimed at strengthening the procurement systems by enhancing transparency, accountability and responsiveness to public expenditure and to fight against wasteful spending and corruption.

The study by Kinoti (2013) dwelt more on the supplier's preparedness to participate in the Government's e-procurement system. Therefore, it fell short of addressing the

Government entities readiness in successful implementation of electronic procurement system. Aman and Kasimin (2011) sought to find out the challenges in the implementation and how to overcome them but failed to address the readiness of the Government entities to implement in order to avoid the challenges that could arise.

A research by Doherty, McConnell and Ellis-Chadwick (2013) failed to seek the readiness of the public entities to implement e-procurement system in order to curb the challenges that affect the uptake and application. Orina (2013) failed to address e-procurement readiness by highlighting on the e-procurement system which was introduced by the Government to enhance transparency and accountability. There is also the element of time in that from the year 2013 to date, there has been a time lapse hence several factors have taken place such as the new Government. Also, the researcher's study was done in Kenya's public sector context in general without specifying a particular context. This study has focused on a specific context which is Mombasa County.

Therefore, this study aims at establishing the necessary factors for implementation of e-procurement and the level of readiness of the Government entities in Mombasa County to adopt e-procurement system together with its perceived improved efficiency upon implementation, since limited empirical studies to establish the same in Mombasa County has been carried out.

Key questions that the research endeavoured to address include; what are the factors necessary for adopting an e-procurement system? How ready are the Government entities in Mombasa County to adopt the electronic procurement system and how the

adoption of e-procurement will assist improve the level of efficiency in the procurement activities in the public entity?

1.3 Research Objectives

The objectives of the study are:

- i. To establish the factors necessary in the implementation of an e-procurement system in public entities in Mombasa County
- ii. To establish the readiness of Government institutions in Mombasa County to adopt the e-procurement system.
- iii. To establish the perceived improved level of efficiency in the implementation of electronic procurement system.

1.4 Value of the Study

The research can provide information about electronic procurement both for companies that wish to adopt and implement electronic procurement and for those already engaged in the practice to improve their business. Electronic procurement as a procurement strategy is meant to ease the procurement expenses for the organization so as to increase its revenue/profits. The study is expected to shade more light on the effects of electronic procurement in the public sector in the country.

The research can help universities and other learning institutions which offer procurement related courses to design appropriate curriculum tailor-made for procurement personnel in practice. This can enable them to link theoretical concepts to actual practice in the field and make necessary adjustments to suit the market. By so doing the strategy can be relevant to the business environment due to its dynamism.

To academicians and researchers the study can provide a base for further studies and also give a point of reference to broaden their view of electronic procurement and its contribution to the procurement department and the entire organization at large. This will definitely enhance their competitiveness to the benefits of their clients and society.

The study can help the Government formulate policies and regulations specifically on electronic procurement that can enable both private and public firms improve their performance through procurement process. This can ensure high service level at a lower cost. From the findings and recommendations of this research the Government can be able to appreciate the holistic approach to implementation of an ICT based procurement so as to give direction as to how the strategy can be successfully implemented in Kenya.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter consists of theoretical and empirical literatures. Theoretical literature consists of information regarding electronic procurement. It explains the meaning of electronic procurement, electronic procurement practices, factors necessary for the implementation of electronic procurement, enablers of electronic procurement system, challenges in implementing electronic procurement and benefits of electronic procurement. Empirical literature on the other hand shades light on a few past related studies. In conclusion, the chapter identifies the summary of literature review which forms the foundation for this study.

2.2 Theoretical Foundation

According to Batenburg (2007) the organizational decision to adopt a new system such as e-procurement is usually taken by top management who take information about both the alternatives and the consequences into account. Nonetheless, the adoption decision neglects important issues such as user acceptance of e-procurement system. (Batenburg, 2007; Bouwman, Hooff, Wijngaert & Dijk, 2005). This study provides a theoretical framework for examining the readiness of e-procurement adoption by procurement entities in Mombasa County by drawing on two schools of thought; Technology Acceptance Model (Davis et al, 1989) and Theory of Planned Behaviour (Ajzen, 1991). TAM and TPB theories can be used in this study to predict and understand the adoption of an online system i.e. e-procurement system. (Chen, Fan & Farn, 2007; Lee, 2009; Gefen, Karahanna, & Straub, 2003; Wu & Chen, 2005).

2.2.1 Technology Acceptance Model

Technology Acceptance Model (TAM) has been considered as a powerful model for explaining and predicting usage intention and acceptance behaviour (Yi and Hwang, 2003). Mathieson, Peacock & Chin (2001) argued that TAM's ability to explain attitude toward using an information system is better than the other multi-attribute models. In turn, attitude in TAM is influenced by two key elements determining technological behaviour; these are perceived ease of use and perceived usefulness (Davis, 1989; Igbaria, Parasuraman & Baroudi, 1996). Davis (1989) has defined perceived usefulness as the degree to which a person believes that using the system will enhance his or her performance and ease of use as the degree to which a person believes that using the system will be free of mental effort.

2.2.2 Theory of Planned Behaviour

Theory of Planned Behaviour (TPB), Ajzen (1991) and Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) are the popular theoretical models in the field of social psychology. According to theory of reasoned action, (Fishbein & Ajzen, 1975) an individual's actual behaviour is directly influenced by his/her behavioural intention to use. Behavioural intention is affected by individual's attitude towards that behaviour and subjective norm. Attitude is defined as an individual's positive or negative feelings about performing the target behaviour, whereas, subjective norms is defined as the individual's perception that most people who are important to him think he should not perform the behaviour in question (Fishbein & Ajzen, 1975).

Theory of Planned Behaviour (TPB) is an extension to theory of reasoned action which includes another important determinant of behaviour i.e. perceived behavioural control Ajzen (1991). According to TPB, perceived behaviour control refers to an individual's perception of the ease or difficulty of performing the behaviour of interest. According to TPB, the more favourable the attitude and subjective norm with respect to behaviour, and the greater the perceived behavioural control, the stronger should be an individual's intention to perform the behaviour under consideration (Ajzen, 1987; 1991). Most empirical applications of the TPB try to explain or predict newly introduced behaviour (Armitage & Connor, 2001).

Although several studies have focused on the factors that impact on the adoption of internet-based technology for the past decade (Heijden, 2003; McKechnie, Winklhofer, Ennew, (2006); Lederer, Maupin, Senza & Zhuang, 2000; Pavlou, 2003), there is limited empirical work on readiness of adoption of e-procurement system. Therefore, through integrating the two theories, this study can provide a more comprehensive model of e-procurement adoption. This study would contribute to the theoretical development of behaviour formatting toward e-procurement adoption.

2.3 E-procurement Practices in the Public Sector

The public sector spends over £150 billion a year on the goods and services needed to deliver public services (OGC, 2008). Public procurement being a Government business system, is concerned with the Government procurement process such as preparing project specification, requesting, receiving and evaluating bids, awarding contract and payment. Therefore, to achieve value for money for the taxpayer, well

effectively managed public procurement that are properly planned and executed are essential (United Nations, 2011).

Implementing an e-procurement system in public entities has been undeniable through: significant improvement in transparency and accountability, enhancement of value for money and improvement of work efficiency-: The public sector procurement has been riddled with allegations of fraud, corruptions and inefficiencies arising from weaker controls in procurement processes. E-Procurement has become a common theme of many organizations for the promotion of transparency and good governance in procurement for many developed and developing nations. It has also become an effective tool for instituting procurement reforms and establishing a fully transparent and open procurement environment.

Governments want processes that are more transparent and accountable. However, different issues such as unjustified or hidden procurement planning, lack of need assessments, political pressure, lack of monitoring capacity of Government, inconsistent cost estimate (Ware et.al, 2012) are always there to create the corruption in developing countries. (Spiller, 2008) notes that public sector procurement is often hidebound by formalised, bureaucratic and rigid procedures. Tendering and contract awarding is one of the most vulnerable stages of public procurement process where most corruption occurs in developing countries (McPheraon & Mac Searraigh, 2007).

Corruption in public procurement has negative effects on the wide range of public level including local, regional, and national (Ampratwum, 2008). Most importantly, it influences the public competence and wealth in a country, increase Government

operation cost, corrodes the social structure and trust in Government, distorts the composition of the Government expenditures on different services includes education, health, operation and maintenance.

The accounting and auditing phase is also a vulnerable area for corruption. Audits are not regularly and systematically performed which makes it harder to detect corruption. Government audit reporting mechanisms are not clear, are dependent, and lack co-operation with other relevant agencies and institution to ensure transparent and effective flow of information for the audit. To overcome these problems, public e-procurement can play an important role for minimizing the risk of corruption in public procurement process as it improves the transparency and integrity in public service such as tendering, sourcing, ordering, and auctioning (OECD, 2008).

To this end, the Government has established a platform through which e-procurement system will be conducted in order to automate procurement process all the way from requisition, tendering, contract award to payment.

2.4 Factors Necessary for Implementation of E-Procurement System

Thai, (2001) indicates that public procurement is an important function of Government and that it has to satisfy requirements for goods, works, systems, and services in a timely manner. He goes on to state that it has to meet the basic principles of good governance: transparency, accountability, and integrity (Wittig, 2003; Callender & Schapper, 2003). Another main principle of Governments is to achieve value for money in procurement (DOF, 2001). E-procurement has many operational and financial attractions, and these will only be realised, if the ground has already

been well set through the cultivation of facilitators and the elimination or dilution of all issues that pose challenges to it.

(Min & Galle, 2003; Hawking & Stein, 2004; Bartezzaghi & Ronchi, 2004), all concur that the success of an e-procurement initiative will ultimately rely on a range of factors, such as the organization's ability/inability to re-engineer its procurement processes, the presence/absence of the appropriate competencies among its employees, the appropriateness/inappropriateness of the organization's culture and the availability/unavailability of appropriate standards.

Vaidya, Sajeev & Callender (2006) on critical factors that influence e-procurement implementation success in the public sector have identified the factors such as:- User involvement, support/communication training; Supplier e-readiness, adoption strategy and communication plan, suppliers education, compliance to best practices with content and catalogue management; Information matching, sending and receiving of real time information to other information systems; Infrastructure authentication and authorization, confidentiality and integrity, security requirements; Transparency improvement, automated invoice payment and reconciliation, compliance with purchasing procedures and standard.

Management sponsor, involvement of the steering committee, investment in organizational change; Identification and management of key stakeholders, e-procurement impact assessment, potential barriers to implementation, organizational resistance; Sound procurement practices, opportunities for aggregation, a consistent approach to procurement, relationships with industry and small businesses; Technical

standards, process and procedural standards, compliance with the standards frameworks, interoperability.

Aman and Kasimin (2011) on e-procurement implementation in Malaysia Government suggest the importance of both system specification and implementation management as it gains impact on e-procurement system especially in changes to governance structure, changes to total cost of acquisition and changes to organizational characteristics. Software integration and data management in system is vital specification for the importance of roll-out strategy in implementation management. In system specification, there should be integration between current e-procurement with financial systems that are implemented. Data management should be related to multiple entry points and consistent product coding, data interchange and also related to limited data entry field.

The e-procurement should be customized to specific requirements of various public entities. They indicate that data management should be related to multiple entry points and consistent product coding, data interchange and also related to limited data entry field. The e-procurement should be customized to specific requirements. Staff should be well equipped with IT skills as e-procurement system requires Government staffs to perform their procurement roles through the internet.

According to Neef (2001) on e-procurement: from strategy to implementation, it is essential to:- Agree clear objectives with senior management; Define the value chain and then the key business and procurement processes; Agree on clear objectives and processes with customers and suppliers; Define the messages and data to be used;

Define the computer systems, applications and data bases involved; Define the computer networks, computers and software to support the above; Where a company or its trading partners includes an ERP system (Enterprise Resource Planning and Management) such as SAP or Oracle it will be essential to be aware of the particular structures and facilities; Examine carefully issues of security - e.g. potential data corruption, hacking, cyber-security among others and careful examination of issues relating to inter-operability especially where legacy databases are involved.

2.4.1 Enablers of E-Procurement Implementation

Public sector agencies worldwide have identified e-procurement as a priority e-Government agenda and have implemented or are in the process of implementing buy-side e-Procurement systems (Kishor &Vaidya, 2006). There is little on extensive use of e-procurement in the public sector. Therefore, public sector e-procurement implementation is critical hence procuring entities need to fully assess the e-procurement enablers that are likely to influence the success of e-procurement implementation in the public sector (Tonkin, 2003).

The e-procurement enablers include: End-user uptake and training: - E-procurement includes new technologies and changes in traditional procurement approaches, hence the need to train staff in procurement practices and the use of e-procurement tools are critical to the success of an e-procurement initiative (WB, 2003). The solution must attract end users to view e-procurement as the preferred means by which to purchase goods and services (KPMG, 2001). Supplier adoption: -E-procurement implementation success is closely related to early supplier involvement. The degree to

which the success of an e-procurement initiative can be realized may well be related to the level of e-readiness of suppliers, and appropriate communication with suppliers is therefore important (AOT, 2003).

System integration: It is very important to determine the level of integration required between the e-procurement solution and existing information systems (KPMG, 2001).

It is as well important to link the e-procurement system to the financial management system in order to facilitate the process of online payment to suppliers (WB, 2003).

Security and authentication:-Due to the sensitivity of the Government data and the legal nature of orders and payments, security of data is critical in e-procurement systems. The system must have mechanisms for identifying and authenticating the user who places an order so that the supplier knows it is safe to fulfil the order. In an e-procurement environment, (Birks, Bond, & Radford, 2001) relate the security requirements at the e-tendering stage to authentication, arguing that e-purchasing systems and processes need protection because they involve a financial transaction and may be vulnerable to fraud.

Re-engineering the process: - E-procurement should be viewed as an enabling mechanism to make the process of procurement more efficient in terms of cost, time, and achievement of value for money (ECOM, 2002). Birks et.al, (2001) suggest that the process of reengineering should not only address process but also supplier relationships and all the internal groups affected by procurement. **Top management support:** -Senior management leadership is critical to the success of an e-procurement implementation (AGV, 2003). The top management team (steering committee) must

involve the project manager, any consultants working with the committee, and agency staff to develop an implementation strategy (ECOM, 2002).

Change management program: - Changes required in supporting business processes are directly related to the speed of adoption of e-procurement. The OGC (2002) recommends that increasing change in underlying processes requires more learning and effort on the part of users. Consequently, the OGC suggest more attention should be given to change management issues, citing three ways to achieve successful change management for e-procurement: consultation, communication, and issue resolution (OGC, 2002). Communication Standards:-E-procurement requires various buyer-supplier systems to exchange information and electronic documents. There is agreement emerging on the adoption of eXtensible Markup Language (XML) as the basis for standards (S&A, 2003). The XML standard defines the content in communication and in the selection of general data formats (KPMG, 2001). In defining e-procurement requirements, Birks et al., (2001) claim a key concern is the standard for formatting electronic catalogues.

2.4.2 Challenges of E-Procurement Implementation

Understanding the challenges and limitations of e-procurement implementation particularly in Government sector is important due to the complexities of Government policies and bureaucracy. Without such understanding, Government may not be able to achieve those impacts on e-procurement system. Expert Group Meeting Report (2011) identified different challenges resulting from the experience. These challenges include: Lack of awareness and capacity building programs; Resistance to convert to

e-procurement; Lack of proper IT infrastructure and Internet readiness; Lack of cross-Governmental coordination and Ineffective implementation of the system.

In a research study by Aman and Kasimin (2011) on e-procurement implementation: a case study of Malaysia Government, legal and administration procedures were noted as the key challenges in system specification due to multiple legacy system, different data formats and complex processes (Subramaniam & Shaw, 2002). Legal, policy; economic foundations and long-term funding were the main barriers in e-government project according to Scholl and Klischewski (2007). Tight legal and administration procedures contributed to system incompatibility with the existing online procurement legal requirements (Kassim & Hussin, 2010).

Liao S.H., Cheng C.H., Liao W.B. and Chen I.L. (2003) in procurement in military organizations documented the challenges for e-procurement implementation in terms of changing established procurement processes and practices, and particularly highlighted the significance of 'human deficiencies and faults (corruption and inefficiency) in the implementation process. The IDC Report (2003) highlighted the slow uptake of e-procurement systems, emphasizing some of the information systems related issues that were inhibiting implementation such as software integration including discussion of XML related opportunities. Lin and Hsieh (2000) study highlighted the importance of both web content management and content rationalization as significant issues for e-procurement operation. They noted that constantly changing prices, specifications and account details across the (on-line) supply base caused major problems in the maintenance of supplier catalogues.

Neef (2001) on e-procurement: from strategy to implementation, notes that as much as benefits may be accrued in implementation of e-procurement, there are also issues to overcome when implementing e-procurement. These include:- Possible negative perception from suppliers; Website and information control lost to exchange administrators; Negotiated procurement benefits may be shared with other exchange users who may be competitors; Creation of catalogues can be a long process and costly to suppliers; Data and catalogue management has to be done well and can be costly; The cost of changing suppliers once they have invested in catalogue production may inhibit competition and lead to inertia; Culture profile within organisations (e.g. resistance to change); Security of data in e-procurement systems is very critical.

2.5 Benefits of Electronic Procurement Implementation

Croom and Brandon-Jones (2007) note that not only does the private sector likely to benefit from the adoption of e-procurement capabilities, as there is also the possibility for Government agencies to actually gain cost-effectiveness advantages. The internet has also created opportunities for Government to become more transparent as it facilitates the exchange of information between public sector agencies and their trading partners (McIvor, McHugh & Cadden, 2002).

United Nations Report (2011) agrees that the business case for implementing an e-procurement system has also been undeniable through: Significant improvement in transparency:- traceability of all transactions, effective for preventing fraud and corruption, provides audit trail; Enhances value for money:- enhances competition

through improved accessibility, reduces procurement costs and transaction costs, facilitates on- line catalogue based purchases such as framework contracts, improved market intelligence and resource allocation management.; Improved work efficiency:- reduces disputes, better enforcement of regulations, reduced procurement time, standardization and streamlining of procurement process.

Neupane, Soar, Vaidya, and Yong (2012) on the role of public e-procurement technology to reduce corruption in Government procurement have identified the various benefits of using public e-procurement in the public sector. These includes: Eliminates the direct human interaction on bidding and other work and services, corruption is decreased significantly, and internal efficiency increase in Government departments, (Ndou, 2004). Government can monitor all the works and services more easily and efficiently (Aman & Kasimin, 2011; Kaliannan & Awang, 2009), provide better status monitoring and tracking of applications; Increases transparency in works and services and improves better interaction between supplier and vendors and citizens through online system. Online bidding system automatically reduces the cartel, collusion and riggings among the bidders (Adebiyi, Ayo & Marion 2010).

Neef (2001) in his book on e-procurement: from strategy to implementation, agrees that e-procurement has changed the dynamics of the purchasing and supply management profession. This can be noted through benefits such as: The automatic processing and auctioning of orders and of related trading documents and data; Improved workflow of the internal procurement process; Use of potentially more efficient and cheaper connectivity methods; Connectivity to external sources of

information such as databases, catalogues and portals; Connectivity to external supply chains - for example, extranets and allowing shared real time information; Connectivity to internal systems and sources of information.

2.6 Empirical Review

A study by Aman and Kasimin (2011) on e-procurement implementation: a case study of Malaysia Government was carried out in order to understand the challenges of e-procurement implementation in the Government sector and the efforts taken to overcome the challenges using a Malaysia Government case. Findings show that challenges of e-procurement implementation in Government sector were not only related to software integration, data management and roll-out strategy, but also to legal and administration procedures, information technology (IT) infrastructure, outsourcing contract and IT skills. Findings show the importance of creating an IT facilities centre in rural areas and working closely with a third-party vendor for users' training and skills development.

Doherty, McConnell & Ellis-Chadwick (2013) carried out a research on Institutional responses to electronic procurement in the public sector with the aim of identifying those factors that affect the uptake and application of e-procurement within the public sector. Each of the case study organisations was a large, highly sophisticated, public sector agency, which constituted a sufficiently homogeneous group to allow meaningful comparisons and contrasts to be made. From the analysis of the results of this study, it is very clear that the level of uptake was still some way from the levels anticipated and recommended. However, overall progress had been slow. It also

showed that there was a high degree of agreement about the specific factors that had affected this level of adoption, of each individual technology. The organisations were all experiencing significant problems with their manual procurement processes, and could clearly see the benefits to be realised from the implementation of a more complete e-procurement infrastructure.

A research carried out by Kinoti (2013) on e-procurement adoption by Government parastatals in Kenya: the supplier perspective, sought to examine how the supplier attitudes, capacity, transparency and integrity affect their propensity to adopt it. The results indicated that the model examined in this study was significant with an R^2 of 95% and that two of the independent variables had a significant relationship individually with propensity to adopt e-procurement. The results further showed that there was a strong positive relationship between capacity and propensity to adopt. The study concluded that attitude and supplier capacity can lead to adoption or non-adoption of e-procurement

Orina (2013) did a study on e-procurement readiness factors in Kenya's Public sector to determine the extent of e-procurement levels in public institutions in Kenya. The results of the study indicate that resistance to change, lack of enthusiasm, staff skills, and to some extent procurement policies impacted the readiness of e-procurement in public institutions. With factor analysis done on the responses, the extracted factors from the rotated component factor matrix noted from the study were technology, organization's finance, leadership and integrity, legal framework and technical preparedness, international law and employee attitude, procurement policy and

national procurement law, e-procurement adoption and staff information technology adequacy and online marketplace and Government support.

Therefore, technology, legal framework and procurement policies were factors that respondents agreed to affect the readiness of public procurement institutions in Kenya. Also, the extent of procurement level in public procurement was low as there was no integration with other systems and low use in electronic commerce.

2.7 Summary of Literature Review

A lot of studies have been conducted on electronic procurement including the numerous literatures that has been put across by various authors. The study by Kinoti (2013) dwelt more on the supplier's preparedness to participate in the Government's e-procurement system. Hence it fell short of addressing the Government entities readiness in successful implementation of electronic procurement system. A study by Aman and Kasimin (2011) only sought to find out the challenges in the implementation and how to overcome them but failed to address the readiness of the Government entities to implement in order to avoid the challenges that could arise.

Doherty, McConnell and Ellis-Chadwick (2013) failed to seek the readiness of the public entities to implement e-procurement system in order to curb the challenges that affect the uptake and application. Orina (2013) failed to address e-procurement readiness by highlighting on the e-procurement system which was introduced by the Government to enhance transparency and accountability. There is also the element of time in that from the year 2013 to date, there has been a time lapse hence several factors have taken place such as the new Government. Therefore, the present

circumstances could be favourable to conduct a more current study. Also, the researcher's study was done in Kenya's public sector context in general without specifying a particular context. This study has focused on a specific context which is Mombasa County.

Limited empirical studies to establish the level of preparedness, receptiveness and impact of the e-procurement to the public entities in Mombasa County has been carried out. Being a new system in the Kenyan public procurement process, several operational adjustments and additional investment into training and purchasing of infrastructural facilities need to be in place before the actual roll out. Therefore, the study aims at establishing the readiness of the Government entities in Mombasa County to adopt e-procurement system.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research design, the study population and data collection process with the instrument that was used to collect the data and finally the process of data analysis with the tools that were used in presenting the analysed data.

3.2 Research Design

The study adopted a descriptive research design. According to Cooper and Schindler (2003), a descriptive study aims at delivering the “what” of a phenomenon. With this design, it was easy to describe the implementation of electronic procurement in terms of the highlighted characteristics which formed the objectives of this study. The information was collected using a set of pre-formulated questions in a predetermined sequence in a structured questionnaire to a sample of the defined population. The research was carried out in Mombasa County.

3.3 Population of the Study

There are eleven ministries in the County Government of Mombasa (Appendix II). The target population of interest was all the ministries in the County Governments. According to Shenoy, Srivastava and Sharma (2002), census is appropriate when the population is small and it is best for accurate and reliable findings. From this population, every unit was considered and respective data of their characteristics compiled. In respect to accuracy and reliability, census made the study become a database for all future studies considering that there is little prior research in the area

of procurement strategies touching on public electronic procurement that are tailored to leverage the high operational cost and enhance efficiency and transparency by Government procuring entities.

3.4 Data Collection

The study used primary data collected using a questionnaire that was administered using a ‘drop-and-pick-later’ method. Each questionnaire will contained four sections; section one consisting of general information, section two deals with the factors necessary for the implementation of an electronic procurement system, section three focused on the extent of readiness to adopt the e-procurement system and finally section four dealt with the perceived level of efficiency by the procuring entities.

Primary data was collected using self-administered questionnaires, on a face to face environment to ensure clarification of issues to the respondent and so as to attain high response rate and minimize errors. The questionnaires were semi-structured, targeting the head of procurement in each department or ministry. A department/ministry has only one procurement section hence each department received one questionnaire.

The questionnaire was pre-tested between two procurement officers to determine its suitability for the purpose intended. This assisted in re-designing it and in estimating the amount of time, money and personnel that was required to process the main study data efficiently and successfully.

3.5 Data Analysis

Data obtained was analysed using both qualitative and quantitative data analysis techniques such as frequencies and percentages, cross tabulations, charts and verbatim explanation where appropriate. For quantitative data, simple evaluation of the views of the respondents on electronic procurement system and the level of its adoption was done with the help of Microsoft excel and SPSS programme; this together with responses to open ended questions which was analyzed using qualitative data technique (verbatim explanations) so as to observe the trend of the exclusive beliefs and feelings of each head of procurement department. This provided an in-depth understanding of quantitative data and the concept in general. The entire analysis was used to supplement and compare with the facts identified in the reviewed literature. The returned questionnaires were checked for consistency, completeness and accuracy.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS, AND DISCUSSIONS

4.1 Introduction

This chapter deals with analysis of data and presentation of the findings. It considers the results from all the questionnaires that were distributed and returned duly filled. The findings are presented according to the four sections as they appear in the questionnaire. The chapter starts with the general information about the respondents' knowledge and experience, followed by the factors that are necessary for the implementation of e-procurement in the Government entities in Mombasa County, the readiness of the public entities to adopt e-procurement and the perceived improved level of efficiency in the use of e-procurement in the public entities. The chapter provides a brief discussion of the results obtained from the questionnaire.

4.2 Response Profile

The research targeted all the 11 ministries that exist in the in Mombasa County Government (Appendix II). Eleven questionnaires were distributed to the departments in charge of procurement within the County ministries and all were duly filled and returned representing 100% response rate. According to Mugenda and Mugenda (1999) a response rate of over 60% is considered adequate for a descriptive research. The researcher's 100% response rate can therefore be used to make an inference on the population. Hence all the returned questionnaires were found fit for analysis for the purpose of the study.

4.3 General Information

The general information on procurement in Mombasa County Government was analyzed, interpreted and presented systematically according to the flow of the questionnaire.

4.3.1 Position of the person in-charge of Procurement

An optional question sought to know the position held by the respondent in the ministry. Table 4.1 presents the results obtained from this question.

Table 4.1: Position of the person in charge of Procurement

Designation	Frequency	Percentage
Accounts Assistants	3	28
Head of Department	4	36
Procurement officers	4	36
Total	11	100

Source: Research Data

From table 4.1, it can be observed that of the staff undertaking procurement in the ministries, 28% were accounts assistants, while 36% were heads of departments and the remaining 36% were procurement officers. The low number of procurement officers in the various County ministries was because of the fact that the County Government was still new and the structures were being developed. This had therefore seen a number accounts assistants and heads of departments being seconded to undertake both accounting and procurement roles.

4.3.2 Level of Education of the person in charge of Procurement

On the level of education of the person undertaking procurement activities in the ministry, table 4.2 provides the results.

Table 4.2: Level of Education

Education	Frequency	Percentage
High School	0	0
Diploma	5	46
Graduate	4	36
Post Graduate	2	18
Total	11	100

Source: Research Data

From table 4.2, all the respondents had attained post high school qualification. 46% had attained Diploma level education while 36% had attained degree and the remaining 18% had attained post graduate qualification. The procurement staffs at the County ministries are therefore knowledgeable enough to adopt a new system through training.

4.3.3 Working Experience

On the working experience that personnel had attained in Government procurement, table 4.3 gives the result obtained from the respondents.

Table 4.3: Working Experience

Experience in Procurement	Frequency	Percentage
Less than 5 years	5	46
Between 5 to 10 years	4	36
11 to 15 years	1	9
More than 15 years	1	9
Total	11	100

Source: Research Data

Majority of the personnel working in County procurement had less than 5 years' experience and only 18% had attained more than ten years' experience in procurement as depicted in table 4.3. Work experience enables one to master the art of performing the work efficiently. Procurement personnel with longer work experience may understand well then challenges involved in procurement and more so in e-procurement system.

4.3.4 Number of Employees in Procurement Department

As to the number of employees working in the procurement department the results are as indicated in table 4.4.

Table 4.4: Number of Employees in the Procurement Department

Number of Employees	Frequency	Percentage
Less than 5	11	100
Between 5 to 10	0	0
More than 10	0	0
Total	11	100

Source: Research Data

All the departments in the County Government had less than 5 employees working in the procurement department. This was due to the fact that procurement was being done at a central point and all the other departments would only forward their requisitions to the central point for processing. Every department therefore had only one or two staff that would assist in processing the requisitions for that department.

4.3.5 Members of Professional Bodies

The researcher further sought to establish the number of employees in each procurement department who were members of procurement professional bodies such as CIPS, KISM or ISM. Table 4.5 gives the results.

Table 4.5: Members of Professional Bodies

Procurement professionals in the Ministry	Number of Ministries	Percentage
None	2	18
One	6	55
Two	3	27
Total	11	100

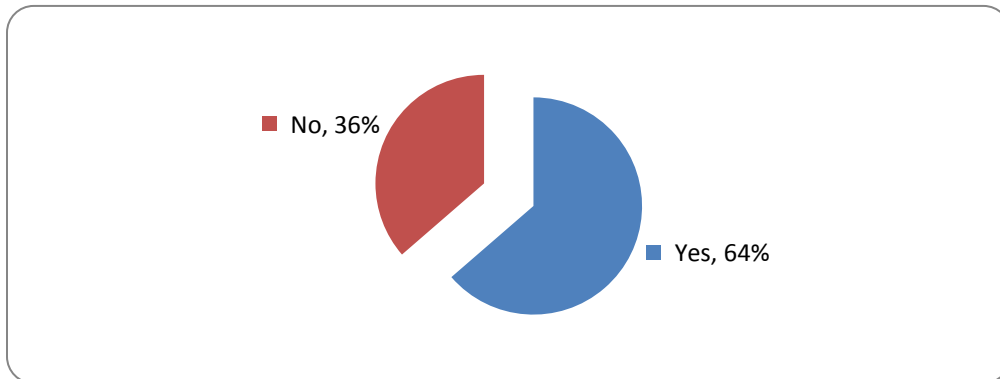
Source: Research Data

From table 4.5, 18% of the respondents had no member of the procurement professional body in their sections, 55% had one member while the remaining 27% had 2 members each in their sections. Except for two ministries that had no member of a procurement professional body in their departments, all the other ministries had at least one person in the department being a member of a procurement professional body. This high number of membership to the professional body might have been contributed by the fact that most public procurement jobs requires one to be a member of the procurement professional body. Most professional bodies encourage their members to undertake a Continuous Professional Development (CPD). This is to ensure that the member is kept abreast with a number of contemporary issues affecting the profession. CPDs may be attained through trainings, seminars and research work.

4.3.6 Attended Change Management Program

The researcher sought to know whether the respondent had attended a change management program, result of which is depicted in Figure 4.1.

Figure 4.1 Attended Change Management Program



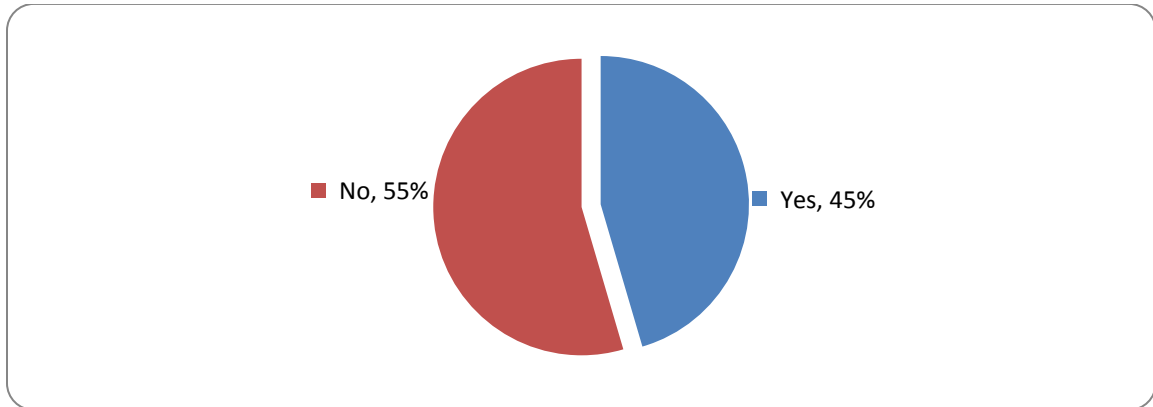
Source: Research Data

The introduction of County Governments saw a number of functions that were originally performed by Central Government devolved to the Counties. This meant that the staffs there-in were also being seconded to the newly formed County Governments. This major change might have contributed to the higher number of respondents (64%) having been taken for a change management training as depicted in figure 4.1.

4.3.7 Attended IFMIS E-Procurement Training

A further question sought to know whether the procurement personnel had attended training on the use of Integrated Financial Management System, Procurement module. The result is presented in Figure 4.2. 45% of the respondents had attended an IFMIS e-procurement training programme while the remaining 55% had not attended the training. IFMIS e-procurement system is a Government tailor made program that one can only learn to operate through specialised training.

Figure 4.2: Attended E-Procurement Training



Source: Research Data

4.4 Factors Necessary for Implementation of E-Procurement System

The researcher sought to establish the extent to which the public entities in Mombasa County understood the factors that would be necessary for e-procurement implementation. A list of 17 critical factors in any e-procurement system implementation was presented to the respondents. The respondents were required to rate their level of agreement to the given e-procurement practices in their department. Statements were rated on a scale of 1 to 5 point rating scale with 1= strongly disagree, while 5= strongly agree. The statement that the respondents agreed with had high scores while those they disagreed with had low scores. Results of Likert type questions are shown in table 4.15 which indicate the mean score for each question and their relevant standard deviation from the mean and ranking in a descending order.

Table 4.6: Factors Necessary for Implementation of E-Procurement System

Practice	Mean score	SD	Rank
A high speed internet connected computers with a reliable Internet Service Provider (ISP)	4.91	3.93	1
Top management leadership and support for the e-procurement project implementation	4.64	2.77	2
Electronic procurement policy/manual within the organization to guide the process	4.45	2.40	3
Change management program for the users on adoption of e-procurement through consultations and communication	4.27	3.08	4
Training of staff on procurement practices and the use of e-procurement tools	4.18	2.79	5
An established Information and Communication Technology Department to support the e-procurement system	4.18	2.79	6
System integration to link the e-procurement system to the financial management system to facilitate online payment to supplier	4.00	2.75	7
Various online documents e.g. requisitions, RFQs and Tender forms etc.	3.91	1.76	8
Proficiency in Information and Communication Technology applications by procurement staff	3.82	2.09	9
Communication standards on e-procurement that requires various buyer-supplier system to exchange information and electronic documents	3.73	1.49	10
A project management team to spearhead implementation of the electronic procurement system	3.64	1.36	11
Re-engineering the e-procurement process to make the process of procurement more efficient in terms of cost,	3.36	1.39	12

time and achievement of value for money			
Early supplier involvement in the e-procurement implementation process	3.18	0.72	13
Availability of documented and executable e-procurement implementation strategies prior to the deployment of the e-Procurement solution	2.64	1.20	14
Security and authentication in e-procurement systems due to sensitivity of data and the legal nature of orders and payments	2.64	0.74	15
Defining the key performance indicators (KPIs) early in the e-procurement implementation process to enable tracking of measurement of performance in the implementation	2.36	1.22	16
Procurement staff with Professional certification/membership e.g. CIPS, KISM or ISM	2.18	1.11	17
Total	3.65	1.97	

Source: Research Data

From table 4.15, high speed internet connected computers with a reliable Internet Service Provider (ISP) had the highest ranking with a mean score of 4.91 followed by management support at 4.64 and an Electronic procurement policy/manual within the organization to guide the process at 4.45 out of a possible maximum score of 5. The variables that scored the least include the requirement for the procurement staff to have a professional certification or membership to a professional body and defining the key performance indicators (KPIs) early in the e-procurement implementation process to enable tracking of measurement of performance in the implementation that scored a mean of 2.18 and 2.36 agreements respectively.

The driving force behind any change management in an organization must be clearly identified and made known to all the stakeholders in the organization for the change to get full support from the stakeholders. An organization needs to have an open approach to e-procurement planning process. The personnel who will eventually be the process owners must be able to identify and associate with the reason behind the new initiative for successful implementation.

4.5 Readiness of Government Entities to adopt E-Procurement

The researcher also sought to establish the extent to which the public entities in Mombasa County were ready to implement e-procurement. A list of 20 critical factors that are required to be in place prior to implementation of an e-procurement system was posed to the respondents. The respondents were required to rate their level of agreement to the given e-procurement requirement in their departments. Statements were rated on a 5 point Likert rating scale with 1 representing 'Not ready at all' and 5 representing 'Ready to a very large extent'. The scores of 'Not ready at all' and 'Ready to a small extent' have been taken to present a variable which is 'Simply not Ready' (N.R) as a practice by respondents; equivalent to mean score of 0 to 2.5 on the continuous Likert scale; i.e. $0 \leq N.R < 2.5$. The scores on 'Ready to a moderate extent' has been taken to represent a variable, which is 'Moderately Ready' (M.R) as a practice in readiness in implementation of e-procurement; equivalent to a mean score of 2.5 to 3.5 on a Likert scale i.e. $2.5 \leq M.R < 3.5$. Finally the score of 'Ready to a large extent' and 'Ready to a very large extent' have been taken to represent a variable, which is 'Very Ready' (V.R) as a level of readiness for implementation of e-procurement system, equivalent to a mean score of 3.5 to 5.0 on a continuous Likert

scale, i.e. $3.5 \leq V.R. < 5.0$). It is upon this interpretation that data and findings are presented for the ensuing sections.

Findings for the response on the readiness of government entities to adopt e-procurement system are presented in table 4.7.

Table 4.7: Readiness of Government Entities to adopt E-Procurement

Practice	Mean score	Rank
Proficiency in Information and Communication Technology applications by procurement staff	4.18	1
Staff training/capacity building on procurement practices and the use of e-procurement tools	3.64	2
A well-integrated system to link the e-procurement system to the financial management system for facilitation of online payment to suppliers	3.55	3
An established Information and Communication Technology Department to support the e-procurement system	3.45	4
Top management leadership and support on implementation of the system	3.27	5
Budget allocation for the necessary resources needed for the development of the system	3.27	6
Procurement staffs with professional qualifications such as KISM and CIPS	3.09	7
Internet service provider (ISP) to address cases of internet outage	3.00	8
Allowing the suppliers of the entity a link to the buyer's internet/ intranet	3.00	9
Centralization of data on line such as vendor list, goods and		10

services purchased etc.	2.82	
Introducing change management program for the users on adoption of e-procurement	2.73	11
Availability of infrastructure such as high speed computers and internet services	2.64	12
Review of the organization structure to suit the e-procurement environment	2.64	13
A well-established Information and Communication Technology section	2.55	14
E-procurement manuals/policy within the organisation	2.45	15
Information and Communication Technology Project management team to spear head the e-procurement system	2.36	16
Documented and executable e-procurement implementation strategies in place prior to the implementation	2.36	17
Availability of documents online e.g. requisitions, Request For Quotations and tender forms	2.18	18
A secured system with mechanisms for identifying and authenticating the user who places an order so that the supplier knows it is safe to fulfil the order.	2.09	19
Involving the suppliers early enough in the implementation of the e-procurement system	1.55	20
Total	2.84	

Source: Research Data

From Table 4.7, 14 factors concerning readiness to adopt the e-procurement system in Mombasa County obtained a mean score above 2.5 (Moderately Ready and Very Ready) while only 6 factors obtained a mean of below 2.5 (Not Ready).

Proficiency in the use of Information and Communication Technology applications by procurement staff scored the highest mean of 4.18 and ranked top among the variables. This was followed by Staff training/capacity building on procurement practices and the use of e-procurement tools which recorded a mean of 3.64 agreement by the respondents. Other factors that came in close include; A well-integrated system to link the e-procurement system to the financial management system for facilitation of online payment to suppliers, An established Information and Communication Technology Department to support the e-procurement system and Top management leadership/support on implementation of the system that ranked 3, 4 and 5 respectively.

On the other hand, it was noted that there was very little supplier involvement in the implementation of e-procurement system. This crucial requirement which ranked last, scored a paltry mean of 1.55 and was followed by a secured system with mechanisms for identifying and authenticating the user who places an order so that the supplier knows it is safe to fulfil the order. Other factors that performed dismally in terms of preparedness include; Availability of documents online e.g. requisitions, Request For Quotations and tender forms, Documented and executable e-procurement system implementation strategies in place prior to the implementation, Information and Communication Technology Project management team to spear head the e-procurement system and lack of E-procurement manuals/policy within the organization. These factors registered less than 50% agreement to the readiness for e-procurement system implementation.

The overall average rating for readiness stood at 57% representing a mean of 2.87 out of a possible 5.

4.6 Perceived Benefits of E-Procurement

An organization is bound to benefit from e-procurement system in various ways. The benefits may vary from improved efficiency to increased accountability and reduced cost. The study sought to establish respondents' views on the benefits that would accrue to a public entity practicing e-procurement system in Mombasa County Government. Respondents' were requested to state their level of agreement to some of the listed benefits of e-procurement. The result was analyzed through mean score and ranked accordingly. The statement that the respondents agreed with had higher scores while those they disagreed with had lower scores. The rating was done on a scale of 1-5 with one being strongly disagree and 5 being strongly agree. The mean score analysis and ranking of the result is presented in table 4.8.

Table 4.8: Perceived Improved Level of Efficiency

Benefits	Mean score	Rank
Increase of visibility of all financial activities related to procurement of goods and services;	4.73	1
Curtail risk of fraud and other errors like double payments created through manual purchasing environment	4.55	2
Provides quicker reference and audit trail	4.55	3
Effective monitoring of projects and tenders	4.00	4
Reduced procurement time/Lead time	4.00	5

Improved transparency and accountability	3.64	6
Improves standardization and streamlining of procurement processes.	3.27	7
Create stiff competition among vendors leading to lower prices	3.09	8
E-procurement reduces corruption and fraud	3.09	9
Online bidding reduce cartels, collusion and rigging.	3.09	10
Enhance competition leading to improved quality	2.91	11
Improved cooperation between buyers and vendors	2.91	12
Reduced disputes among the stakeholders	2.55	13
Total	3.57	

Source: Research Data

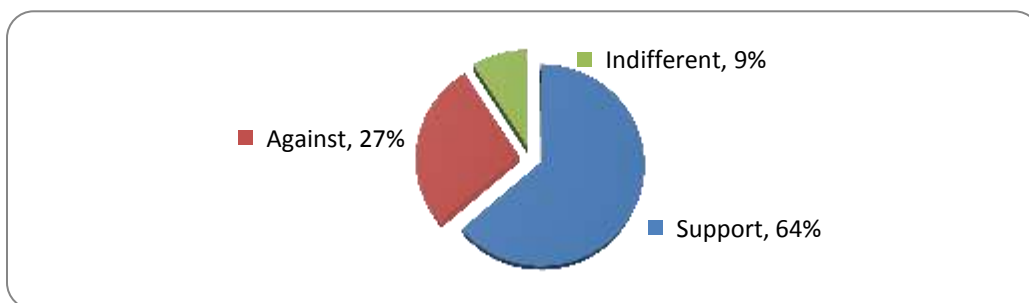
From Table 4.8, all the listed statements on benefits were recognized to be benefits by majority of the respondents thus having an average mean score of 3.57 (71% of agreement). The factors with the leading rankings were; Increase of visibility of all financial activities related to procurement of goods and services, Curtail risk of fraud and other errors like double payments created through manual purchasing environment and Provides quicker reference and audit trail which had a mean score above 4 out of a possible maximum of 5. The factors that ranked lower as perceived benefits of e-procurement system include; reduced disputes among the stakeholders,

improved cooperation between buyers and vendors and Enhance competition leading to improved quality which had a mean score below 3.

4.7 Personal views regarding IFMIS E-Procurement System.

Respondents were finally asked to give personal view of the Integrated Financial Management Information System-IFMIS Procurement module, as a method of conducting procurement activities in the public institution. The results to this open ended question was coded and grouped into three outcomes as follows: those who supported the idea of e-procurement system, those who were against it and those who were indifferent i.e. they failed to give their opinion. According to the respondents, 64% supported e-procurement system implementation in public institution due to the fact that its benefits outweigh the challenges, 27% felt that the public entities still lacked adequate infrastructure to undertake e-procurement system and proposed further training and involvement of other stake holders before considering its implementation, while the remaining 9% did not answer the question and was therefore considered to be indifferent. Figure 4.3 gives the snapshot of the outcome.

Figure 4.3: Respondents' view regarding E-Procurement System



Source: Research Data

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the outcome of the study. It provides a summary of findings and their interpretation alongside the objectives of the study, conclusion drawn and recommendation from the gaps identified in the study. Finally the researcher gives suggestions for further research studies to be carried out in this area.

5.2 Summary of Findings

The study sought to investigate the implementation of the Government's electronic procurement system in the County of Mombasa as per the Kenyan Government's directive. Specifically, the study sought to establish the factors necessary for the implementation of e-procurement system, the extent to which the procurement departments in the Mombasa County Government were ready to undertake e-procurement initiative and to establish the perceived improved level of efficiency in the implementation of electronic procurement system.

Out of the 11 departments or ministries in the Mombasa County Government (Appendix II) there is one main procurement section under the ministry of finance that receives all the purchase requisitions from the rest of the departments and service them accordingly. Each department on the other hand undertakes its own procurement planning and budgeting for the succeeding year. The approved budget is then forwarded to the central procurement section for compilation together with the others

from other ministries. The procurement section is headed by the procurement director below whom there are procurement officers who assist in order fulfilment. The various section heads in each ministry approves the purchase requisitions in their sections and forwards them to the central procurement section in the County. It was noted from the research that each ministry/department has a section that facilitates processing of the requirements and forwarding them to the central procurement for processing. These facilitating functions are done by one or two account assistants within that department. As to such, these personnel are non-members of procurement professional body as their main duty is more of accounting than procurement. With devolution being just about two years old, the County Government had taken a number of its staff for capacity building training as was seen by the 64% of respondents who had so far attended the program. On the other hand, only 45% of the staff in procurement had attended the IFMIS electronic-procurement training session.

Findings on the factors necessary in the implementation of e-procurement system indicate that infrastructure was a key item for the successful implementation. Min and Galle (2003) stressed on the cultivation of facilitators and elimination of issues that pose challenge to the e-procurement during implementation. They considered both financial and operational factors for any successful implementation to be realized. The data collected showed a strong support for high speed internet connected computers with a reliable internet service provider having a mean score of 4.91 out of a possible 5. Coming closer was top management leadership and support for the e-procurement project implementation and an e-procurement policy/manual within the organization that registered a mean score of 4.64 and 4.45 respectively. Change management

programs and staff trainings were also rated highly as necessary factors for e-procurement implementation. Factors that ranked lower included the requirement of procurement staff to have professional qualifications to be able to implement e-procurement and setting up of KPIs in the e-procurement implementation.

The study also sought to establish the readiness of public institutions in Mombasa County to adopt the e-procurement system. Analysis of the results ranked some variables higher than others; Proficiency in information and communications technology applications by procurement staff garnered a mean score of 4.18 and was followed closely by a well-integrated system to the financial management system for facilitation of on-line payment to suppliers. Top management leadership and support on implementation of the system scored the same mean of 3.27 as budget allocation for the necessary resources needed for the development of the system. Some aspects that are crucial for the readiness to implement e-procurement that registered very low mean score include early supplier involvement in the implementation (mean of 1.55), secured system with mechanism for identifying and authenticating the user who places an order so that the supplier knows it is safe to fulfil that order (2.09) and availability of procurement documents online e.g., requisitions, RFQs and tender documents (2.18). The overall mean for preparedness was at 2.84 or 57% agreement which may indicate that a lot more still need to be done for the successful implementation of e-procurement system.

As to the perceived improved level of efficiency in the implementation of electronic procurement system, the overall results registered a mean of 3.57 or 71% agreement

on the basic parameters that could indicate improvement in level of efficiency. With e-procurement, majority of respondents agreed to improved visibility of all financial activities related to procurement of goods and services attaining a mean score of 4.73, while curtailing risk of fraud and other errors like double payments emanating from manual purchasing environment and provision of quicker reference and audit trail scored a mean of 4.55. All efficiency factors posed to the respondents registered a mean of over 2.5 or above 50% agreement indicating that the efficiency would be immense with e-procurement.

Finally, the respondents gave their personal views on IFMIS e-procurement system implementation, those who supported the system felt that it would make work easier and enjoyable and help clear the negative perception that the public have had towards public procurement processes. Furthermore, the system has been implemented in other countries and therefore its implementation in Kenya would not be as a pilot test. Those who did not support the implementation sighted ill preparedness of the personnel and lack of proper infrastructure in place to support e-procurement. All in all, with 63% of the respondents supporting the e-procurement initiative, there is likelihood of success in implementation.

5.3 Conclusions

From the study findings, the following conclusions are drawn. The County Government has made progress in establishing the necessary structures in place to ensure the adoption of the IFMIS e-procurement as directed by the central Government to be used in all public procurement. There has also been progress on

capacity building among employees and a number of facilities to support the system have also been put in place. The main challenges identified by OGC, (2003) as affecting e-procurement implementation include lack of awareness and capacity building programs; lack of proper IT infrastructure and internet readiness lack of cross-Governmental coordination and ineffective implementation of the system and resistance to convert to e-procurement.

Being a young Government, the County Government lacks experienced personnel who could have seen the seamless transition from the manual procurement environment to the electronic procurement environment as the staffs are as old as the County Government itself while others with experience came from other companies. The County lacks an established implementation team to oversee the implementation process of the e-procurement system. Similar facts were identified by Orina (2013) who listed finance, leadership, legal framework and competent staff among others as the main contributors to the readiness to implement e-procurement in public sector in Kenya.

Further, some crucial stakeholders like suppliers who would be required to upload their catalogues in to the system for ease of reference had not been involved in the implementation process as per the study analysis. Kinoti (2013) sought suppliers' perspective on e-procurement and established a significant relationship between the supplier's capacity and propensity to adopt e-procurement. It concluded that supplier's attitude and capacity may affect the adoption of e-procurement.

Respondents' opinions on e-procurement system in public institutions lead to a conclusion that most of the users were willing to support the implementation of e-procurement system in the County, and the few ones who still oppose the new system site ill preparedness as their main reason for objection. This is contrary to the study done by Orina (2013) that identified resistance to change as a major challenge in implementation of e-procurement in public sector. Since the County Government in collaboration with the central Government had started training the procurement personnel on the use of IFMIS e-procurement module, the challenges of capacity building and resistance to change would soon be a thing of the past.

5.4 Recommendations

From the study findings, the study recommends that a special project management team be established at the County level to oversee the implementation of the e-procurement system. The team should comprise professionals from procurement, Information Technology, accounts and a management representative. The team should be spearheaded by the project manager who will ensure that all the requirements of implementation are in place.

As public procurement is governed by the Public Procurement and Disposal Act 2005 (PPDA), which make reference mainly to the manual procurement process, there is need to amend the Act accordingly to factor the e-procurement processes. This can be supplemented by an e-procurement manual/guide and other procurement documents in electronic form availed to the process owners for reference.

The study also recommends allocation of adequate funds to fast track capacity building among staff and acquire adequate infrastructure necessary for the successful implementation. All stakeholders need to be involved in the implementation of such a crucial initiative in order to enlist their buy-in in to the idea.

The stakeholders who include the users of the system, suppliers and system support personnel ought to feel as part and parcel of the design and implementation team.

5.5 Limitations of the Study

This study targeted public institution and more specifically the Mombasa County Government ministries. It did not however venture deep into the other public institutions that are still managed by the central Government and are operating in the County of Mombasa.

The study could also not exhaust all the factors therein as an in-depth study would require much more resources such as capacity, financial resources, time frame and logistics that the researcher did not have at disposal at the moment.

5.6 Suggestions for Further Research

Further research is recommended to focus on other stakeholders of e-procurement system in the public institution. The impact that the system would have on suppliers and other service providers needs to be investigated.

Since each County Government is unique in its own right and has got special challenges in different locality, the study recommends a similar research to be undertaken on other County Government across the country.

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APPENDICES

Appendix I: SAMPLE QUESTIONNAIRE

(To be filled by the person in charge of Procurement)

SECTION ONE: GENERAL INFORMATION

Instruction: Please Tick (√) where appropriate

1. Name (Optional).....

2. What is your position in the organization? (Optional)

3. What is your highest level of education?

High school { } Diploma { } Graduate { } Post Graduate { }

4. How long have you worked with the Government procurement department?

Less than 5 years { } 5-10 years { }

11-15 years { } More than 15 years { }

5. How many employees work in your section?

Less than 5 { } Between 5 and 10 { } More than 10 { }

6. How many employees in your section are members of procurement professional body?

Less than 5 { } Between 5 and 10 { } More than 10 { }

7. Have you ever attended any change management program?

Yes { } No { }

8. Have you ever attended IFMIS e-procurement training?

Yes { } No { }

SECTION TWO: FACTORS NECESSARY FOR IMPLEMENTATION OF E-PROCUREMENT SYSTEM

9. Below is a list of factors that needs to be in place before implementing an e-procurement system. Please indicate the extent to which you agree with each of them.

{Tick (√) the appropriate column} (1) No extent (2) Little extent (3) Moderate extent (4) Large extent (5) Very large extent

Practice	1	2	3	4	5
Training of staff on procurement practices and the use of e-procurement tools					
Change management program for the users on adoption of e-procurement through consultations and communication					
Electronic procurement policy/manual within the organization to guide the process					
An established Information and Communication Technology Department to support the e-procurement system					
A high speed internet connected computers with a reliable Internet Service Provider (ISP)					
A project management team to spearhead implementation of the electronic procurement system					
Re-engineering the e-procurement process to make the process of procurement more efficient in terms of cost, time and achievement of value for money					
Communication standards on e-procurement that requires various buyer-supplier system to exchange information and electronic documents					
Various online documents e.g. requisitions, RFQs and Tender forms etc.					
Top management leadership and support for the e-procurement project implementation					

Proficiency in Information and Communication Technology applications by procurement staff					
Procurement staff with Professional certification/membership e.g. CIPS or KISM					
Early supplier involvement in the e-procurement implementation process					
System integration to link the e-procurement system to the financial management system to facilitate online payment to supplier					
Availability of documented and executable e-procurement implementation strategies prior to the deployment of the e-Procurement solution					
Security and authentication in e-procurement systems due to sensitivity of data and the legal nature of orders and payments					
Defining the key performance indicators (KPIs) early in the e-procurement implementation process to enable tracking of measurement of performance in the implementation					
Others (Please specify)					

SECTION THREE: READINESS OF GOVERNMENT ENTITIES TO ADOPT E-PROCUREMENT

10. The following is a list of factors affecting e-procurement implementation in an organisation. Please indicate how ready your ministry is to implement an e-procurement system based on each of the listed factors.

{Tick (√) the appropriate column} (1) Not ready at all (2) Ready to a small extent (3) Ready to a moderate extent (4) Ready to a large extent (5) Ready to a very large extent

Variables	1	2	3	4	5
Staff training/capacity building on procurement practices and the use of e-procurement tools					
Top management leadership and support on implementation of the system					
Availability of infrastructure such as high speed computers and internet services					
Information and Communication Technology Project management team to spear head the e-procurement system					
Budget allocation for the necessary resources needed for the development of the system					
A well established Information and Communication Technology section					
A well-integrated system to link the e-procurement system to the financial management system for facilitation of online payment to suppliers					
Procurement staffs with professional qualifications such as KISM, ISM and CIPS					
Internet service provider (ISP) to address cases of internet outage					
E-procurement manuals/policy within the organisation					
Availability of documents online e.g. requisitions, Request For Quotations and tender forms					
Review of the organization structure to suit the e-procurement environment					
A secured system with mechanisms for identifying and authenticating the user who places an order so that the supplier knows it is safe to fulfil the order.					
Involving the suppliers early enough in the implementation of the e-procurement system					
Introducing change management program for the users on adoption of e-procurement					

Documented and executable e-procurement implementation strategies in place prior to the implementation					
Proficiency in Information and Communication Technology applications by procurement staff					
Allowing the suppliers of the entity a link to the buyer's internet/ intranet					
An established Information and Communication Technology Department to support the e-procurement system					
Centralization of data on line such as vendor list, goods and services purchased etc.					
Others (Please specify)					

SECTION FOUR: PERCEIVED IMPROVED LEVEL OF EFFICIENCY

11. The following are some of the benefits that could accrue from the use of e-procurement as opposed to traditional procurement process. Indicate the extent to which you agree/disagree with them.

{Tick (√) the appropriate column} (1) Strongly disagree (2) Disagree (3) Moderately agree (4) Agree (5) Strongly agree

Benefits	1	2	3	4	5
E-procurement reduces corruption and fraud					
Reduced procurement time/Lead time					
Effective monitoring of projects and tenders					
Improved cooperation between buyers and vendors					
Create stiff competition among vendors leading to lower prices					

Improved transparency and accountability					
Provides quicker reference and audit trail					
Enhance competition leading to improved quality					
Reduced disputes among the stakeholders					
Online bidding reduce cartels, collusion and rigging.					
Improves standardization and streamlining of procurement processes.					
Increase of visibility of all financial activities related to procurement of goods and services;					
Curtail risk of fraud and other errors like double payments created through manual purchasing environment					
Others (Please specify).					

12. What is your personal view regarding e-procurement at the Government entity?

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Thank you.

Appendix II: MOMBASA COUNTY GOVERNMENT MINISTRIES

- 1) Agriculture Livestock and Fisheries
- 2) Education
- 3) Finance and Economic Planning
- 4) Health
- 5) Planning Land and Housing
- 6) Tourism Development
- 7) Trade Energy and Industry
- 8) Transport and Infrastructure
- 9) Water and Environment
- 10) Youth Gender and Sports
- 11) Inspectorate

Source: <http://www.mombasagovernment.com>