Abstract: Procurement encompasses the whole process of acquiring property and/or services. Sound public procurement policies and practices are among the essential elements of good governance. Performance measurement is crucial in enhancing the performance of organizations because whatever gets measured gets done. The procurement function has not been given the recognition it deserves in developing countries, in most public entities. Procurement processes are very key in organization such that it determines how and what products will be produced and its qualities thereof. The study will use primary data which will be collected through use of questionnaires with respondents as the procurement finance and line managers of Kenya Ports Authority. The specific objectives are to investigate how IT influences organization performance, to examine how information system influences organization performance, to establish how procurement staff competencies’ influences organization performance and to determine how internal processes influence organization performance. Stratified random sampling method will be used. The study targeted all the 6,476 employees of KPA. The sample size for the study was 195. A modified Likert scale questionnaire will be developed divided into three parts. A pilot study was carried out to refine the instrument. The quality and consistency of the study was further assessed using Cronbach’s alpha. Data analysis was performed on a PC computer using Statistical Package for Social Science (SPSS Version 22) for Windows. Analysis will be done using frequency counts, percentages, means and standard deviation, regression, correlation and the information generated will be presented in form of graphs, charts and tables. The study results revealed that Kenya Ports Authority has adapted to the electronic procurement. The study revealed further that information technology has had a great role in electronic procurement success. The correlation analysis between independent and dependent variable had a strong positive correlation between them.

INTRODUCTION

1.1 Background of the study
The arrival of the Internet as a means of doing business has served as a medium for major changes in the operation and status of organizational procurement. It is evident that Information Technologies have totally transformed the way organizations and governments operate (Nelson et al., 2001). They further assert that, majority of organizational expenses consists of money used to purchase various products and services. In order to decrease the total costs spent on purchasing process, internet technologies are used and E-Procurement has become popular to implement in the latest era by both governments and enterprises. Although the opportunities for improvement seem to flourish, both private and public sector organizations are still guarded as far as the adoption of electronic technologies is concerned (Zheng et al., 2004).

Some of the electronic technologies that have revolutionized business include the E-procurement. There has been growing interest in the adoption of e-procurement by private and public sector organizations in the last decade. However, this interest has been with many reservations since e-procurement is a recent phenomenon. (Dai & Kauffman, 2001; Koorn, Smith & Mueller, 2001), there is no doubt that the use of the Internet in e-Procurement provides several advantages over earlier inter-organizational tools. For example, Electronic Data Interchange has been providing automated purchasing transactions between buyers and their suppliers since it was launched in the 1960s. Enterprise Resource Planning (ERP) followed in the 1970s, and then came the commercial use of the Internet in 1980s. This was followed by the universal application of the World Wide Web in the 1990s (Office of Government Commerce, 2002).

According to the Epiq Technologies (2010) report, adoption of E-procurement technology in an organization enables a firm to organize its interactions with its most crucial suppliers, a set of built-in monitoring tools to help control costs,
assure maximum supplier performance and keeping an open line of communication with potential suppliers during a business process. The system allows managers to confirm pricing and leverage previous agreements to assure each new price quote is more competitive than the last. E-Procurement helps with the decision-making process by keeping relevant information neatly organized and time-stamped. Most are template-driven which makes all transactions standardized and traceable.

According to CIPS Australia (2005) report, efficiency and effectiveness represent different competencies different competencies and capabilities for procurement organization. Efficiency reflects that the organization is doing things or activities right, whereas efficiency whereas effectiveness relates to the organization doing the right thing. There is a trade-off between efficiency and effectiveness as a highly efficient organization may spend less than peers (particularly when compared to highly effective organizations), however, quality and value may suffer. Organizations focused on efficiency tend to make decisions based on cost and investment pay back likelihood; whereas effectiveness focused organizations make decisions based on quality and value rather than costs and productivity.

The last decade has seen the importance of public procurement grow not only in Kenya but across Sub-Saharan Africa owing to the fact that the share of public procurement in the GDP of Sub-Saharan African countries ranges between 8-15%. Likewise, improvements in procurement policy and its implementation have on average resulted in savings of 30% (Shalle & Irayo, 2013). Panetto & Boudjilida (2013) assert that, efficient enforcement of public procurement legislation is a considerably more important and difficult task than the formal adoption of public procurement guidelines. It thus is apparent that many countries have simply copied down directives and thereby formally fulfilled requirements while not possessing the needed capacity to implement them effectively, which has become quite evident problem in the recent past. Till early 2000, Kenya like many of her counterparts in the developing world was marred by high inefficiency in spending of taxpayers’ money, particularly in the area of public procurement. The number of enterprises which had the privilege of doing business with the state was highly limited and there was no true competition among them. The procedure of public procurement was completely non-transparent and unregulated and there was no institutional framework whatsoever (Susan & Hardy, 2005).

In Africa, the current phase in the development of public procurement has seen the establishment of special public procurement bodies, whose task is to implement the new regulations. These bodies aim not just to bring domestic legislation, but to play a key role in the efficient implementation of the regulations. These bodies have also been given increasing responsibility for monitoring of public procurement procedures. In this phase the regulatory frameworks have completed by the adoption of all necessary secondary legislation, intensive training programs have been organized and needed manuals and instructions have been published aimed to inform widest range of procuring entities and potential bidders on how to implement the law provisions properly (Nicola, Missikoff & Fabrizio, 2011).

1.1.1 Profile of Kenya Ports Authority

Kenya Port authority was established through an act of parliament in 1978 after the collapse of the East African Community. It is commonly known as the port of Mombasa and is one of the most modern and vibrant port in Africa. Mombasa Port handles all types of ships and cargo services, not only for Kenya, but also Uganda, Rwanda, Burundi, DR Congo, Ethiopia, Southern Sudan, north-eastern Tanzania and Somalia. The port has 19 deep-water berths — six handle containers and 13 conventional cargos. Two oil jetties are for refilled and crude oil, with the capacity to handle tankers of up to 80,000 Dead Weight Tonnage.

Mombasa is the second largest port in Africa (Durban in South Africa is the largest) in tonnage and containers handled. Total cargo traffic through the port averages 16 million tonnes a year. After Durban, Mombasa is also the second best connected port in the region, with 17 shipping lines calling and direct connectivity to more than 80 ports Kenya Ports Authority also owns and operates Inland Container Depots (ICDs) or ‘dry ports’ in Nairobi and Kisumu. The ICDs are connected to the port by a special rail service (railtainer) that transports containerized imports and exports. Expansion of the port is high on the Government’s agenda. Its annual cargo turnover is projected to reach 30 million tonnes by 2030.In this regard, the Transport ministry, through KPA, has started developing port infrastructure at Kilindini harbour to expand the ship turning basin, dredge the channel to increase the depth of the berthing areas and construct additional cargo termini.

The port has initiated computerization programs to enhance quick and efficient processing of cargo. E-procurement has revolutionized procurement systems and the way goods and services are obtained. The use of biometric time management
has also initiated the elements of accountability and self-motivation. It now operates a 24-hour, seven-days-a-week work system.

KPA’s vision statement according to www.kpa.go.ke is “World class seaports of choice” and the mission is “to facilitate and promote global maritime trade through provision of competitive port services”. Service excellence is key to KPA operations with the aim to exceed customer expectations and always striving to uphold the virtues of fairness, honesty, professionalism and transparency.

1.2 Statement of the Problem
Procurement is one department that can contribute tremendously to the organization’s efficiency and effectiveness. If the procurement department bought all that is required in the organization at the right time, price, place, quantity and quality all other departments within the organization would derive great benefits from this and would thus be able to serve their customers (both internal and external) better (Snider & Rendon, 2001). If the procurement department is inefficient in its acquisition of goods and services or even works, other departments would be affected and sometimes the consequences can be grave. Since e-procurement is a way of using the internet to make it easier, faster and less expensive to purchase the goods and services they require, the key question is, can e-procurement be used to enhance organizational performance? E-procurement simplifies the sourcing and purchasing process in an organization. However there is still some resistance to change and therefore the importance of identifying whether e-procurement creates value to a procurement process, how and what are the benefits of changing from traditional procurement process to electronic procurement.

Studies have been done on e-procurement. Batenburg (2007) conducted a study on e-procurement adoption by European firms. The study concluded that there exists country differences in e-procurement adoption, and that firms from countries with a low uncertainty avoidance such as Germany and the UK are the early adopters of e-procurement, while countries that are less reluctant to change such as Spain and France have lower adoption rates. Another study was also carried out by Greunen, et al. (2010) on the implementation of regulation-based e-procurement in the Eastern Cape provincial administration, South Africa. The study found that measurable benefits of supply chain management have not yet been realized due to general limited understanding of how supply chain management concept works within government environment.

There are local studies that have been carried out in e-procurement. These include: Orori (2011) on factors that influence the introduction of e-procurement in retail industry: a survey of retail chain supermarkets in Kenya; Njoroge (2010) on factors influencing e-procurement practices in construction industry in Kenya and Mburu (2011) on the role of e-procurement in enhancing efficiency in telecommunication industry (A Case Study of Safaricom Limited Company-Kenya). It is however clear that the studies have not focused on the impact of e-procurement on the performance of State Corporations. To address this gap, this study focused on the impact of e-procurement on the performance with a specific reference to state corporations in Kenya. The study sought answers to the following questions: To what extent have state corporations adopted e-procurement and what are the effects of e-procurement on the performance of state corporations in Kenya?

1.3 Objectives
This study was guided by general and specific objectives as follows:

1.3.1 General Objective
The effect of electronic procurement on organizational performance in Kenya Ports Authority

1.3.2 Specific Objectives
i. To examine the effect of Information Technology on organizational performance in Kenya ports Authority.

ii. To examine the effect of information system on organizational performance in Kenya Ports Authority.

iii. To examine the effect of procurement staff competencies on organizational performance in Kenya Ports Authority.

iv. To establish the effect of internal processes on organizational performance in Kenya Ports Authority.

1.4 Research Question
i. How does information technology affect organizational performance in Kenya Ports Authority?

ii. How information system does affect organizational performance in Kenya Ports Authority?

iii. How do procurement staff competencies affect organizational performance in Kenya Ports Authority?

iv. How does an internal process affect organizational performance in Kenya Ports Authority?
1.5 Hypotheses
The objectives of this study will be fulfilled by testing the four hypotheses stated both in terms of null (HO) and alternative hypotheses (HA).

1. Hypothesis One
   HO1: Information Technology has no significant effect on organizational performance in Kenya Ports Authority
   HA1: Information Technology has significant effect on organizational performance in Kenya Ports Authority

2. Hypothesis Two
   HO2: Information system has no significant effect on organizational performance in Kenya Ports Authority
   HA2: Information system has a significant effect on organizational performance in Kenya Ports Authority

3. Hypothesis Three
   HO3: Procurement staff competencies has no significant effect on organizational performance in Kenya Ports Authority
   HA3: Procurement staff competencies has a significant effect on organizational performance in Kenya Ports Authority

4. Hypothesis Four
   HO4: Internal processes have no significant effect on organizational performance in Kenya Ports Authority
   HA4: Internal processes have a significant effect of organizational performance in Kenya Ports Authority

1.6 Justification
This study will be of importance to various stakeholders among them being the management of State Corporation, procurement professionals, policy makers in both private and public sector and also scholars. Management of State Corporation will appreciate the factors affecting organizational performance among the parastatals. For example through the findings of this study, they will be able to understand the interplay of various operational and human factors that influence the way organization’s performance is measured. It will therefore be possible for management to know the areas within their procurement functions that will require improvement for the betterment of the overall profitability of the State Corporations.

Procurement as a profession is dynamic and is experiencing new improvements on a regular basis. The findings of this study will inform procurement professionals on areas that require their attention both at their working places and in their other professional engagements. For example there are many aspects of procurement which will need to be included in the organizational performance metrics in order to appreciate the contribution of procurement to the overall organizational performance and effectiveness.

Procurement involves many stakeholders and therefore it is driven by policy interventions. The findings of this study will inform policy makers on the areas and aspects of procurement that will require policy interventions for the purpose of improving procurement efficiency. This study is scholarly in nature and hence will be of value to researchers and scholars both in academia and industry. The study will identify gaps that can be advanced in the interest of further scholarly discourse in the area of procurement measurement. Specifically the findings of the will identify academic gaps that will trigger further studies on organizations performance measurement.

1.7 Scope
Procurement processes varies from one organization to another. This implies that nature of the firm and the nature of the business determine the size and types of procurement processes and techniques to adopt. The study is limited to organization performance measurement in the State Corporation a case study of Kenya Ports Authority. The study is conducted within a specified time-period of one semester.

1.8 Limitations
The limitations that hindered the researcher in conducting the study efficiently were: Financial constraints which limit the amount of data and the area to be covered in the study. Confidentiality regarding data to be collected where some of the information was likely to be regarded as confidential by the officers concerned and, therefore, deny the researcher access to it. The researcher assured respondents that all information provided is strictly for academic work and therefore confidential. The researcher used limited financial resources are prudently utilized to be able get as much data as possible.

LITERATURE REVIEW

2.1 Introduction
Reviewing the existing literature around the topic of research interest is vitally important because it helps in understanding not only the body of knowledge that relates to the research topic but also in developing an argument about the relevance of the research (Bryman, 2012). This chapter will systematically review the related literature to guide the reader in understanding what has already been done by other researchers in as far as the effects of e-procurement in organizational performance in
state corporations a case study of Kenya Port Authority is concerned; what concepts and theories are relevant in this area of research.

2.2 Theoretical Review

Theories are formulated to explain, predict, and understand phenomena and, in many cases to challenge and extend existing knowledge within the limits of the critical bounding assumptions. The theoretical framework introduces and describes the theory which explains why the research problem under study exists. A theoretical framework consists of concepts, together with their definitions, and existing theory/theories that are used for the particular study (Sekaran, 2005). This study will be anchored on the following theories; theory of planned behavior, technology diffusion theory and information system success model.

2.2.1 Theory of Planned Behaviour

The theory of planned behavior (Azjen, 2011) is an extension of the theory of reasoned action (TRA). Azjen and Fishbein (1998), made necessary by the latter model’s inability to deal with behaviors over which individuals have incomplete volitional control. At the heart of TPB is the individual’s intention to perform a given behavior (e.g. use of ICT in procurement). For TPB, attitude toward the target behavior and subjective norms about engaging in the behavior are thought to influence intention, and TPB includes perceived behavioral control over engaging in the behavior as a factor influencing intention.

TPB has been used in many different studies in the information systems literature (Mathieson, 1991; Taylor and Todd, 1995a, b; Harrison et al., 1997). The TPB model has been used in various areas, including e-commerce, IS innovations, and public sector IS innovations. According to TPB, an individual’s performance of a certain behavior is determined by his or her intent to perform that behavior. Intent is itself informed by attitudes toward the behavior, subjective norms about engaging in the behavior, and perceptions about whether the individual will be able to successfully engage in the target behavior. According to Azjen (2001), an attitude toward a behavior is a positive or negative evaluation of performing that behavior. Attitudes are informed by beliefs, norms are informed by normative beliefs and motivation to comply, and perceived behavioral control is informed by beliefs about the individual’s possession of the opportunities and resources needed to engage in the behavior (Azjen, 1991). Azjen compares perceived behavioral control to Bandura’s concept of perceived self-efficacy (Bandura, 1997).

TPB also includes a direct link between perceived behavioral control and behavioral achievement. Given two individuals with the same level of intention to engage in a behavior, the one with more confidence in his or her abilities is more likely to succeed than the one who has doubts (Azjen, 1991). As a general theory, TPB does not specify the particular beliefs that are associated with any particular behavior, so determining those beliefs is left up to the researcher. An underlying premise of the current study is that beliefs about privacy and trustworthiness of the ICT platform inform attitudes toward Internet purchasing.

TPB provides a robust theoretical basis for testing such a premise, along with a framework for testing whether attitudes are indeed related to intent to engage in a particular behavior, which itself should be related to the actual behavior. Based on the theory, beliefs about how important referent others feel about ICT adoption in procurement, and motivation to comply with the views of important others, should also influence intent to make Internet purchases. Finally, beliefs about having the necessary opportunities and resources to engage ICT in Procurement process should influence intent to purchase as well as directly influence purchasing behavior itself.

2.2.2 Technology Diffusion Theory

Technology diffusion theory is the common lens through which theorists study the adoption and development of new ideas. Diffusion is defined basically as the process by which an innovation is adopted and gains acceptance by individuals or members of a community. The Diffusion theory represents a complex number of sub-theories that collectively study the processes of adoption. The most famous account of diffusion research by (Rogers, 2005) where the definition of diffusion comprises of four elements which are defined as;

Innovation: an idea, practices or object perceived as new by individuals or group of adopters. Communication channels: means by innovation moves from one individual to the next or group to group. Time: the non-spatial interval through which Diffusion event takes place. The events include: innovation diffusion process, relative span of time for the individual or group to adopt the innovation and social system: a set of interrelated units that are engaged in joint problem solving activities to accomplish the goals.

(Rogers, 1995) also came up with the perceived attributes theory that assumes that innovation bears the following characteristics: Relative advantage: degree in which an advantage is perceived as better than the idea it supersedes, Compatibility: degree that an innovation is seen to be consistent with existing values and norms, Complexity: the degree in which an innovation is seen to be difficult or
easy to understand and use, Trial ability: is the degree in which an innovation may be experienced on a limited basis and Observability as the degree to which the results of innovation are visible to others. The easier it is for individuals to see results of an innovation, the more likely they are to adopt it (Rogers, 1995).

Although the process is not limited to these perceived attributes, the elements are helpful in formulating questions for potential adopters in better understanding what factors make adoption possible or desirable. Endogenous growth theory however indicates that the rate of technological progress, and hence the long-run rate of economic growth, can be influenced by economic factors which will curtail technology adoption in procurement as technology is seen as being costly. It starts from the observation that technological progress takes place through innovations, in the form of new products, processes and markets, many of which are the result of economic activities (Lieberth, 2007).

Technology revolution has impacted on purchasing; the drivers for change in purchasing function must include the objectives of eradicating paper transactions to a secure system that facilitates procure to pay as an objective of world class procurement which is seen to enhance the performance of the procurement function (Lysons & Farrington, 2012). The Technology Diffusion theory is important in guiding the firm to initiate change and adopt technologies in procurement in the shift towards world class procurement.

2.2.3 Information System Success Model
The last most cited theory was the Information Systems Success Model. DeLone and McLean (1992) reviewed prior research and introduced a comprehensive taxonomy of factors contributing to the success of information systems. The authors examined the literature on IS success and categorized success measures into six major categories: system quality, information quality, use, user satisfaction, individual impact, and organizational impact. These categories are interrelated and interdependent and provide a comprehensive view of IS success. The target of the model is to guide future research efforts. In conclusion, the most cited theories of previous publications showed that the theory of the research area focused on the acceptance and adoption of technology.

The most cited theories were TAM, TRA, DOI, and TPB. Most of the theories focus on the individual level (i.e., TAM, TRA, TPB, and UTAUT), but they may also focus on an organizational level (the Model of the IT Implementation Process) or on the level of a social system (e.g., DOI focuses on a group or an organizational level). In the Information Systems Success Model, the focus of the analysis is on critical success factors in ICT implementation in organizations. These results are mostly in line with earlier research on the most influential theories used in ICT implementation and adoption studies. Gallivan (2001) distinguishes the same four most cited theories, namely TAM, TRA, DOI, and TPB, as the core theoretical frameworks (Jeyaraj et al., 2006). Previous literature has also distinguished TAM as the most influential model (Chuttur, 2009; Jeyaraj et al., 2006; Lee et al., 2003). There is one exception in the results compared with the previous literature, namely that Gallivan (2001) and Jeyaraj et al. (2006) include Social-Cognitive Theory (SCT, e.g., Compeau and Higgins, 1995) among the most influential theories. SCT is a learning theory based on the idea that people learn by observing others (Bandura, 1986). However, SCT was not represented in the most cited theories in this study.

2.3 Conceptual Framework
Mugenda (2008) defines conceptual framework as a concise description of phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study. According to Young (2009), conceptual framework is a diagrammatical representation that shows the relationship between dependent variable and independent variables. A conceptual framework shows the relationship between independent and dependent variable. In this study, the dependent variable is the Effects of E-procurement on organizational performance while the independent variables are information technology, information system, individual user factor and internal processes (Fig. 2.1 below).
2.3.1 Information Technology

Saunders (1997) reckoned that personnel in procurement are, in a sense, information processors. They receive, analyse, make decisions and distribute information in order to manage the flow of goods and services in the SC. ICT is an enabler for information sharing which organizations in the procurement system can use for eliminating bloated inventory levels caused by cumulative effect of poor information cascading up through a SC. Daugherty, Myers and Autry (1999) averred that information integration is also a key component in many automatic replenishment programs (ARP). Initiatives such as vendor managed inventory (VMI) and collaborative e-planning, forecasting and replenishment (CPFR) are based on an increased level of automation in both the flow of physical materials, goods and associated information between companies to improve the efficiency in the entire system. It shortens information processing time and tremendously improves procurement performance. Process integration can enhance procurement performance. ICT provides new ways to store, process, distribute and exchange key information with customers and suppliers in the entire procurement system. Simatupang and Sridharan (2005) emphasized that information is the glue that holds organizations together and can be used to integrate procurement process activities both within a process and across multiple processes. Information on demand, forecasting and replenishment is recognized as a central component in integration of planning and control.

Internal integration focuses on cross-functional processes. Externally, focus is on relationships with outside customers and suppliers. A relationship can have various intensity levels ranging from lowest open-market negotiations, cooperation and coordination to the highest collaboration level. Collaboration in procurement is based on a high degree of trust, commitment and information-sharing. It requires linking performance systems with decision making, information sharing and incentive alignment in the SC. Sriram and Stump (2004) reckoned that enterprise resource planning (ERP) systems are essential for supporting internal information sharing. Externally, inter-organizational information systems (IOIS) constituting automated information systems shared by various firms can be used to support information-sharing with customers and suppliers. ICT contributes to improved communications patterns, increased demand for coordination of joint activities and new organizational structures through its ability to store, transmit and process information and speed up inter-organizational activities.

Organizations have huge amounts of raw procurement data but are poor at converting same into market knowledge. They should strive to find trends, patterns and connections in data in order to inform and improve competitive procurement performance. Thomas and Rainer (2005) opined that procurement systems have long been supported by ICT. With the implementation of ERP systems in the 1990s, EDI connections with suppliers were established through automation of delivery schedules by linking user materials management system with supplier systems. ICT enables organizations to decentralize operational procurement processes and centralize strategic ones due to higher transparency. Prior to e-procurement, strategic procurement often dealt with routine tasks.
such as individual transactions. Strategic aspects were frequently neglected, with the buyer having little influence over the choice of suppliers and purchased products. Internet technologies facilitate faster and more efficient operational procurement processes enabling managers to concentrate on strategic tasks.

Christopher (2005) contended that there is a dimension to information that enables supply and demand to be matched in multiple markets, often with tailored products, in ever-shorter time frames. This enables suppliers to react in real-time to market changes. ICT serves as the connection between various stages of the system, allowing them to co-ordinate and maximize total supply profitability. It is crucial to the daily operation of each stage in the procurement process. Kim and Rogers (2005) asserted that studies have examined business-to-business (B2B) transactions on different operational performance dimensions such as inventory cost, cycle time, and manufacturer flexibility. Rapid growth of importance of ICT application is a testimony to its impact on improving procurement performance. This is achieved through Internet, Intranet and Extranet. However, organizations must make a trade-off between efficiency and responsiveness. Bowersox, Closs and Cooper (2007) argued that ICT provides the means for collecting relevant demand data, developing a common database and providing a means for transmitting order information. It allows organizations to change the way they source supplies for smooth operations. Auto makers Ford Motor Company, DaimlerChrysler and General Motors have transacted their businesses on Internet since year 2000 and registered positive results. Based on expected procurement efficiencies, the firms’ procurement and product development costs fell by 16%, a reduction that resulted in saving approximately US $ 1,000 per motor vehicle.

Chopra, Meindl, and Dhamram (2007) asserted that ICT provides a collaboration platform by allowing customers and suppliers to work together on product design using specialist ICT design tools. Value chain integration may be made possible if separate activities can be knitted together by faster and more reliable information flows. Integration allows customers to change their specification and delivery schedules themselves which then automatically reconfigures requirements back in the procurement system. ICT can allow managers and external stakeholders to bypass traditional gatekeepers who gained power from their control of information. ICT-based systems can also create direct communication between the top and bottom of an organization through use of in-house websites.

This helps organizations reduce transaction and production costs and achieve operational efficiency. Kenth and Vahid (2008) found that ICT drives e-markets to increase the availability of information about suppliers who are made available for each product and increase market interest for parties, reduce procurement costs and support paperless transactions. It enables users to buy at lower prices worldwide. Offers of companies on their websites enable customers to choose between a variety of products and retailers. Products can be customized before shopping and warehousing related costs reduced due to direct delivery. Dell and Amazon work this way. The global setting includes higher cultural distance and geographical complexity, lower behavior transparency and social difficulties in bonding between procurement channel partners. Thus, ICT could be more effective procurement performance coordination and control mechanism than personal face-to-face interaction in international exchange relationships.

2.3.2 Information System

Enterprise resource planning (ERP) integrates internal and external management information across an entire organization, embracing finance/accounting, manufacturing, sales and service and CRM. ERP systems automate this activity with an integrated software application. Its purpose is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders (Telgen, Zomer, & de Boer, 1997). Enterprise resource planning (ERP) as an extension of material requirements planning (MRP), later accounting resource planning and computer-integrated accounting. Without supplanting these terms, ERP came to represent a larger whole, reflecting the evolution of application integration beyond accounting (Raymond, 2005).

ERP is a business management system made up from a collection of applications or modules that integrates company functions such as marketing, finance, manufacturing and logistics (Helo and Szekely, 2005). ERP uses database technology to control and integrate information related to a company’s business including data related to customers, suppliers, employees and finance. All business transactions, such as inventory management, production planning and distribution are entered, recorded, processed, monitored and reported (Helo et al., 2008). An information technology (IT) specification is a description of a technology product or service a customer seeks to procure and is also a description of what a supplier must be prepared to offer to be considered for an award. International studies reveal that in spite of a
the growing proportion of purchased services, the management of these costs and processes is not yet very advanced compared with cost management of direct and indirect goods (Caldwell, et al., 2009).

2.3.3 Procurement Staff Competencies
According to Markus, (1990) individual end users and entire business units will naturally resist any change in business processes that poses uncertainty in security and privacy of their transactions. Organizations keep their business information secret as a protective mechanism to ward off competition and remain competitive in the business environment. Private sector organizations on the other have limits to the amount and nature of information to be shared with other third parties. The balance between transparency, protection against unauthorized data disclosure, ensuring the authenticity of a data source and the impact of disclosure of procurement process remains hazy.

To ensure that all individuals within the organization are well versed with the newly introduced ICT applications in the procurement process, management of the organization should emphasize on employee training and induction to ensure that they (employees) are well equipped with the necessary required skills to handle the new system with accuracy (Amaratunga & Baldry, 2002). At the same time, competency should be emphasized by the organization when outsourcing for new employees for the new system. Experience and ability to handle the new system as well as to quickly adapt to the new system should be among the factors the human resource department should put into consideration when making their selection (Lewis and Roehrich, 2009). The management should also ensure that employees have a positive attitude towards the new system by emphasizing on its importance to the organization compared to the other systems previously in use.

2.3.4 Internal Process
Procedures are operating instructions detailing functional duties or tasks. According to Saunders (1997), the division between public and private sectors creates two different worlds, requiring different approaches to procurement. Public ownership imposes obligations with regard to public accountability, leading to prescribed procedures and policies. All steps of the procurement cycle must be properly documented with each step being approved by the designated authority. Baily, Farmer, Jessop and Jones (2005) argued that public procurement procedures tend to be characterized by high levels of bureaucracy independent of order value; poor communications and focusing on unit price rather than long-term relations. Procurement perceptions are affected by the existing organizational structure, quality of internal communication system, past experience and resources available. A procurement policy may define the approval process for contracts of varying cost levels and may include role of purchasing, conduct of procurement staff, buyer-seller relationships, and operational issues. Without elaborate and effective procurement procedures Government policy objectives would fail to meet the desired objectives. Lysons (2006) defined tendering as a purchasing procedure whereby potential suppliers are invited to make a firm and unequivocal offer of the price and terms, which on acceptance shall be the basis of the subsequent contract.

Organizations need standard procurement procedures which cover all aspects of the procurement cycle, including supplier selection, contract negotiations, order placement and payment. These are used to control spending activity, ensure appropriate approvals are in place and reduce the risk of overpayment. An appropriate approval process involves a separation of tasks and the involvement of senior managers for transactions that cost more than a specific price for enhanced procurement performance. Nicholas, Michael and Simone (2008), explored whether opportunities for fraud and corruption might be reduced or increased by rules governing public procurement. They focused on specific European legislation – Procurement Directive 2004/18 on the coordination of procedures for the award of contracts for public works, public supply and public services by public bodies within all EU Member States. They concluded that fraud risks in public procurement may be summarized in terms of insider-driven specifications, low visibility of procurement processes, and ample opportunities for renegotiation of terms. Risks may be increased by innovative procurement practices that have the effect of extending the maneuvering between tenderers and public bodies, such as competitive dialogue. In Kenya, Part V of the PPDR provides for alternative procurement procedures as restricted tendering; direct procurement; request for proposal; request for quotations; low value procurement; and use of specially permitted procedures. This gives PEs room to meet needs in time during emergency, tragedy, limited sources or economic viability.

Burt et al. (2010) stated that every organization develops procedures to enable its personnel implement policies and plans; designed to meet her objectives. In Kenya, Parliament prescribes a framework within which policies relating to public procurement and asset disposal shall be implemented and may provide for preferences or sanctions against contractors failing to perform
according to professionally regulated procedures, contractual agreements or legislation or persons found guilty of corrupt practices. Parliament enacted the Public Procurement and Disposal Act (PPDA), 2005 and the operationalizing Public Procurement and Disposal Regulations (PPDR), 2006. This law establishes procurement procedures for different methods of procurement with the aim of increasing public confidence, promoting local industry and stimulating economic development. Jones and George (2009) postulated that bureaucratic control mechanism is control by a comprehensive system of formal rules and standard operating procedures (SOPs) that shapes and regulates the behavior of divisions, functions and individuals. SOPs and rules allow employees to perform activities efficiently and effectively. Moncska, Handfield, Guinipero and Patterson (2010) held that the procurement function has a significant impact on corporate performance. Thus, traditional procedures are becoming obsolete in modern organizations. Procedures provide guidance that staffs follow in performing activities, put constraints on behavior and show how the procurement function should work to achieve strategic objectives.

2.3.5 E-procurement and Organizational Performance

E-procurement system plays a fundamental role in B2B purchasing by streamlining the buying process and providing the information needed to make more effective purchasing decisions (Osmonbekov et al. 2002). Previous studies allude to the fact that many companies have found benefits from their implementation of E-procurement system. The adoption of Web-based E-procurement system in the B2B purchasing transaction allows firms to reduce transaction costs, improve internal procurement process efficiency, and increase collaboration with suppliers (Barbieri & Zanoni 2005). The benefits of technology-based supports for procurement activities can be organized into two broad categories: organizational level and inter-organizational level. In organizational level, previous studies suggested that implementing E-procurement system could make company’s procurement process more efficient and effective through automating procurement process, reengineering the internal processes and enhancing inter-organizational coordination.

For example, Davila et al. (2003) thought that implementing e-procurement the firm could shorten the order fulfillment cycle time, lower inventory levels and the price paid for goods, and reduce administrative costs of procurement. Eakin (2003) argued that the benefits of E-procurement can be classified to hard benefits (such as price savings and process cost reductions), soft benefits (such as individual time freed up through more efficient processes), and intangible benefits (such as cultural change, financial approval for all spending, and high visibility of supplier performance). Presutti (2003) found e-procurement system can bring benefits to the company such as reducing time to-market cycles, reducing material and transactions costs, and reducing stock levels. Chaffey (2004) argued that the benefits of e-procurement include reduced purchasing cycle time and cost, enhanced budgetary control, elimination of administrative errors, increasing buyers’ productivity, lowering prices through product standardization and consolidation of buys, improving the payment process, and improving information management.

Implementing Web-based e-procurement system not only could make the operational processes of the buyer organization more effective but also could make the order fulfillment process of the supplier organization more efficient and improve partner relationship management. The main objective of the order fulfillment process that buyer expected is supplier can deliver qualified products to fulfill its orders at the right time and right place (Lin & Shaw 1998). The order fulfillment performance can be improved if supplier can recognize the order, so that the order demand patterns are more transparent to the supplier. In order for supplier to enhance order fulfillment performance, buyer and supplier have to share information. For instance, Toyota shares its inventory and sales information with its suppliers. Having access to such information helps Toyota’s suppliers plan and manage their operations better and Toyota can coordinate the inventory orders effectively; as a result, the implementation of just in time (JIT) delivery strategy can be achieved (Chopra & Meindl 2001). Web-based E-procurement enables the information to be shared among trading partners, such as sales forecasts, production schedules, inventory levels, and product specifications.

Developing a purchasing strategy that will enhance internal customer satisfaction on e-Procurement function is a complex process and there are a lot of factors that has to be taken into account, which factors vary between companies, commodities, situation and environment. Dobler and Burt (1996) states that if suppliers are involved earlier in the buyer design process of the E-procurement system, they can contribute with their expertise in the following areas: Material specifications, tolerances, standardization, order sizes, process ethanol’s in supplier manufacturing, packaging, inventory & transportation, via a web designed interlink. Further, Dobler and Burt (1996) states that, another
aspect to consider when developing a strategy is how many parallel sources supply should be used.

A company can choose to take all supply from a single supplier, which is usually called single sourcing, or they can take their supplies from two or more suppliers, called dual or multiple sourcing. The different strategic are appropriate in different situations. According to Dobler and Baurt (1996) single sourcing is appropriate when. Bottler prices can be achieved through larger volumes (economies of scale), quality is important. A strong influence over a supplier is advantageous. In addition to quality control and coordination required, just-in-time manufacturing require a single source, significantly lower freight costs many result; special tooling or machinery is required, and the use of more than one supplier is impractical or excessively costly, total system inventory will be reduced, an improved commitment on the supplier’s part results, improved interdependency and risk sharing result and time to market is critical.

On the other hand Dobler and Burt (1996) states that dual or multiple sourcing maybe is appropriate. To protect the buyer of shortage, strikes or other emergencies, to maintain competition and provide a back-up source; to meet local content requirements for international manufacturing locations; more also to meet customer’s volume requirements, avoid lethargy or complacency on the part of the single source supplier when the customers a small player in the market for a specific item, when technology part is uncertain and in areas where suppliers tend to leapfrog each other technologically.

Cronin-Harris (2004) states a company has two main windows to the outside world, the sales department and the purchasing department. Because of this they mean that the actions of these two departments are extremely visible and therefore important for the perception of the firm externally. According to Cronin-Harris (2004), studies have shown that behavior of the purchasing department in ethical issue has a major effect on the behavior of the rest of the company in similar situation (Internal customers). It is therefore essential to ensure ethical behavior form the purchasing department. The author states that the best way to ensure this is through the development and enforcement of a relevant ethics policy and through continuous training and education.

According to Hein Ritz et al (1991), a purchaser is an agent for his/her company who has been given the authority by owner or management to commit funds. There are often monetary limit to the amount that may be spent by any single buyer without securing approval of the expenditure by general management. The authors state further that authority should be comparable with responsibility and the ability to meet that responsibility. Hein Ritz et al. (1991), states that managers give purchasers authority, they usually control cost by restricting the amounts that a purchaser has the authority to sign for. There might be several steps of authority, for instance a single buyer ties the authority to sign deals up to a certain amount, over that amount the deal has to be signed by a senior purchaser up to a certain amount and over that by the chief procurement officer and above that by the CEO.

2.5 Critique of the existing Literature
Existing literature has found colossal constraints in the public procurement system. For instance, Amayi (2011), in his study found that procurement operations require better performance control systems. He asserted that a records management system that an organization adopts has effects on its procurement operations. The researcher concluded that without ethics the performance of procurement operations would be negatively affected and pointed out that existing legal framework was an impediment to the performance of operations in the public procurement. He further concluded that integrated ICT systems organize and disclose enormous amounts of information about the workings of the total system. While appreciating his findings, this study notes that the researcher did not employ the personal observation tool so as to gather data especially on ethics and integrity. Analysis of factors such as core technical skills and application of ICT in procurement management are important to overcome some of the constraints.

Kirungu (2002) in his study found that inefficiency in the supply chain (SC) was caused by bureaucratic procurement and disposal procedures, irrational supply base, adversarial customer-supplier relationships, and traditional storage operations. He recommended that Kenyatta National Hospital (KNH) procurement procedures be exempted from the Public Procurement Regulations, rationalization of the supply base, and partnership sourcing. This study concurs with his findings pertaining to supply base rationalization and relationships but wishes to point out that the research instruments used were limited to an interview and observations. No questionnaires were administered which could have given adequate data for analysis. It was further noted that senior managers were not interviewed and he failed to employ records analysis method. This study does not support the recommendation that KNH procurement procedures be de-linked from public procurement legal framework because with
appropriate staff and technology, performance in the entire public sector procurement system can be improved.

Maina (2011) in his study found that weak oversight and enforcement, non-transparent practices, lack of effective links between procurement and financial management, poor record management and filing system, and delays and inefficiencies on the implementation of the PPDA as factors influencing the implementation of the procurement law in Kenya, the case of Ministry of Education. The study concluded inefficiencies in procurement led to increased procurement costs, causing longer cycle times, lower quality purchasing decisions within the ministry. While appreciating his findings, this study does not support findings that poor record management system alone impedes performance. Ethical issues should also be put into perspective. Indeed, performance can still be improved if ICT is employed with modern control mechanisms. This study agrees with his recommendation that all stakeholders need to be sensitized on the good of embracing financial and procurement reforms.

2.6 Literature Gap
According to Schau, (2013) the role of electronic procurement in procurement has been backed as a new strategic view of supply chain management. The innovation of employing ICT in procurement systems can create value for enterprises through utilizing. ICT enabled resources on supply chain management. Previous studies have focused on the benefits of ICT on supply chain performance Mose, Njihia, & Magutu, (2013) conducted a study on the Critical Success Factors and Challenges in E-procurement adoption among Large Scale Manufacturers in Nairobi Kenya. They concluded that most of the large scale manufacturing firms have adopted ICT in procurement.

According to Njogu, (2012) some organizations have successfully embraced the use of ICT. For instance Nation Media group through their digital platform commonly known as N-Soko enables their clients to purchase products online. Awino, (2015) conducted an investigation of selected strategy variables on firm’s performance on ICT platform. The study focused on supply chain management in large private manufacturing firms in Kenya. It was established that most of the ICT strategies of large manufacturing firms in Kenya are not owned by individual firms but also other organizations within the SC that provide the required linkages towards the overall corporate performance of the manufacturing industry. Actually most of the studies conducted are general - there is no intensive industry-specific research which has been conducted.

These studies agree that ICT realization is a cross-industry challenge. However, the extent through which the role of ICT in procurement processes and its effects on organization performance is still not clear. For scholars, ICT and its adoption in procurement is an upcoming phenomenon in the business fraternity, and needs to be critically analyzed. For procurement managers, the role of ICT adoption in procurement applications creates a need to understand the impact of information technology on the achievement of competency on a practical level.

Most of the studies however have concentrated in the developed economies with emerging economies attracting only a minority share of the studies conducted. Previous studies by Nicholas, et. al, (2008) examined whether European procurement rules prevent or generate crime whereas Mose,et.al, (2013) determined procurement procedures in the parastatals. Therefore there is a literature gap on organizational performance measurement.

2.7 Summary
The above chapter reviews the various theories that inform the independent and dependent variables. The chapter explores the conceptualization of the independent and the dependent variables by analyzing the relationships between the variables. In addition, empirical literature in a wide range of studies have considered organizational performance measurement as being the most basic concept used to determine the income and performance of economic entities, industries and even whole economies as well as empirical review.

RESEARCH METHODOLOGY

3.1 Introduction
This chapter outlines the research design and methodology that will be used to carry out the study. The chapter also deals with the target population, type of data collected, sampling frame, sample and sampling technique, the sample size, data collection procedures, pilot test, validity and reliability of the instrument as well as the data analysis techniques and how eventually data will be presented.

3.2 Research Design
The researcher used descriptive research design. Descriptive study is concerned with finding out who, what, where and how much of a phenomenon, which is the concern of the study. Sekaram (2006) observes that the goal of descriptive research is to
offer the researcher a profile or describe relevant aspects of the phenomena of interest from the individual, organization, industry or other perspective. In addition the design best fit in the ascertainment and description of characteristics of variable in this research study and allows for use of questionnaires, interviews and descriptive statistics such as frequencies and percentages. In addition a descriptive design is appropriate since it will enable the researcher to collect enough information necessary for generalization.

3.3 Population
Kenya Ports Authority has approximately 6,476 members of staff working in various departments. The population of the study will be 6,476 staff of KPA as shown in the sampling frame below.

3.4 Sampling Frame
The sampling frame describes the list of all population units from which the sample will be selected (Cooper & Schindler, 2008). It is a physical representation of the target population and comprises all the units that are potential members of a sample (Kothari, 2008).

3.5 Target Population
The study targeted 1,943 employees of KPA in the top, middle level management and unionisable employees in procurement, finance and engineering departments. Since the study is descriptive in nature, Mugenda (2003) recommends thirty percent of the population. However, Kothari (2004) recommends that a sample size be as large as possible in order to reproduce salient characteristics of the accessible population to an acceptable level as well as to avoid sampling errors. Mombasa port is selected as a case study because of proximity to the researcher, time availability for research and budgetary constraints.

3.6 Sample Size
Mugenda and Mugenda (2003) asserts that sampling is that part of the statistical practice concerned with the selection of individual or observations intended to yield some knowledge about a population of concern, especially for the purpose of statistical inferences. They advise that a researcher would have to use 10% of the total target population as a sample for it to be accepted as a good representative sample. The sample size was 195.

Stratified sampling enables the population to be divided into five segments (relevant departments within KPA) called strata. Simple random sample is then drawn from each stratum, and then those sub-samples joined to form complete stratified samples. In addition proportional allocation is done, where each stratum contributed to the sample a number that is proportional to its size in the population.

3.8 Data Collection Instruments
The researcher used structured questionnaires to collect data from KPA respondents. A questionnaire with high reliability would receive similar answers if it is done again and again or by other researchers (Bryman & Bell, 2007; Saunders et al., 2007). In addition the questionnaires are convenient for the task in that they can be easily and conveniently administered with the study sample. The use of questionnaire is cost effective, less time consuming as compared to the use of interview. Data collected through the use of well-
structured questionnaire is easy to analyze. The questionnaire used Likert scale because it requires respondents to respond to a series of statements by indicating whether he or she agrees to a great extent or no extent. Likert scale is used because it is easy to understand and responses are easily quantifiable and subjective to computation of mathematical analysis (Allen et al., 2011).

3.9 Data Collection Procedure
The researcher used primary and secondary data. Structured questionnaires are used to collect primary data from respondents. The questionnaire was self-administered to the respondents and was collected after three days. Secondary data was obtained from related materials in the internet, procurement journals, white papers, periodicals and books relevant to the study.

3.10 Pilot Testing
The questionnaires were pilot tested before the actual data collection. This involved a few respondents from KPA to ascertain its effectiveness. The researcher was interested in testing the reliability of the research instruments, the questionnaire hence validity of data collected. Validity is the accuracy and meaningfulness of inferences which are based on the research results (Mugenda & Mugenda, 2003) asserts that reliability is done using Cronbach’s Alpha Model on SPSS. Mugenda and Mugenda (2003) assert that reliability is the measure of the degree to which research instrument yields consistent results or data after repeated trials. The researcher will do a pilot with 10% of respondents before distributing the questionnaire. The researcher will use 20 respondents for the pilot process. The purpose was to ensure that those items in the questionnaire are clearly stated and have the same meaning to all respondents. At the same time it helped to determine how much time is required to administer the questionnaire. Respondents for pre-testing will not form part of the sample.

3.11 Data Processing, Analysis and Presentation
Kothari (2009) argues that data collected has to be processed, analyzed and presented in accordance with the outlines laid down for the purpose at the time of developing the research plan. Data analysis involves the transformation of data into meaningful information for decision making. It involved editing, error correction, rectification of omission and finally putting together or consolidating information gathered. The collected data was analyzed quantitatively and qualitatively. Descriptive and inferential statistics was done using SPSS version 22 and specifically multiple regression model was applied. Set of data was described using percentage, mean standard deviation and coefficient of variation and presented using tables, charts and graphs. Fraenkel and Wallen (2000) argue that regression is the working out of a statistical relationship between one or more variables. The researcher used a multiple regression analysis to show the effect and influence of the independent variables on the dependent variables.

The relationship is as follows;

\[ Y=\alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \]

\( Y \) = Represents the dependent variable, the effect of e-procurement on organizational performance of state corporations
\( \alpha \) = Constant
\( \beta_1, \beta_2, \beta_3, \beta_4 \) = Partial regression coefficient
\( X_1 \) = Information Technology
\( X_2 \) = Information System
\( X_3 \) = Individual User Factor
\( X_4 \) = Internal Processes
\( \epsilon \) = error term or stochastic term

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction
This chapter presents analysis of the data on the effect of electronic procurement on organizational performance in Kenya Ports Authority in Mombasa County, Kenya. The chapter also provides the major findings and results of the study and discusses those findings and results against the literature reviewed and study objectives. The data is mainly presented in frequency tables, means and standard deviation.

4.2 Questionnaire Response Rate
The study targeted 195 employees of Kenya Ports Authority in Mombasa County, Kenya. From the study, 132 out of the 195 sample respondents filled-in and returned the questionnaires making a response rate of 67.7% as per Table 4.1 below.

<table>
<thead>
<tr>
<th>Table 4.1 Questionnaire Return Rate</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent</td>
<td>132</td>
<td>67.7</td>
</tr>
<tr>
<td>Non-respondent</td>
<td>63</td>
<td>32.3</td>
</tr>
<tr>
<td>Total</td>
<td>195</td>
<td>100</td>
</tr>
</tbody>
</table>

According to (Mugenda & Mugenda, 2008) a response rate of 50% is adequate for analysis and reporting; a rate
of 60% is good and a response rate of 70% and over is excellent; therefore, this response rate was adequate for analysis and reporting.

4.2.1 Data Validity
The researcher asked experts, three academicians, to assess the scales’ content validity. Accordingly, the researcher made changes on the first draft in terms of eliminating, adding or rewording some of the items included in that draft.

4.2.2 Reliability Analysis
Prior to the actual study, the researcher carried out a pilot study to pre-test the validity and reliability of data collected using the questionnaire. The pilot study allowed for pre-testing of the research instrument. The results on reliability of the research instruments are presented in Table 4.2 below.

Table 4.2: Reliability Coefficients

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach's Alpha</th>
<th>Number of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology</td>
<td>0.864</td>
<td>6</td>
</tr>
<tr>
<td>Information System</td>
<td>0.746</td>
<td>5</td>
</tr>
<tr>
<td>Procurement Staff Competencies</td>
<td>0.723</td>
<td>6</td>
</tr>
<tr>
<td>Internal Processes</td>
<td>0.777</td>
<td>5</td>
</tr>
<tr>
<td>Organizational Performance</td>
<td>0.811</td>
<td>6</td>
</tr>
</tbody>
</table>

The overall Cronbach's alpha for the three categories which is 0.792. The findings of the pilot study shows that all the three scales were reliable as their reliability values exceeded the prescribed threshold of 0.7 (Mugenda & Mugenda, 2008).

4.3 Organizational Profile
The study sought to gather information based on adoption of e-procurement, for how long has the organization adopted e-procurement and whether electronic procurement has been successfully.

4.3.1 Adoption of the electronic procurement
The study sought to establish the adoption of electronic procurement in the organization. The study results revealed that 86.4% responded that the organization has adopted electronic procurement and 13.6% responded no, with a mean score of 1.14 and standard deviation of 0.344 as shown in figure 4.1 below.

![Figure 4.1 Adoption of electronic procurement](image)

4.3.2 Experience of electronic procurement
The study sought to establish the experience of electronic procurement in the organization. The study results revealed that 59.8% have had an experience of between 1-5 years, 23.5% between 6-10 years and 16.7% above 10 years with a mean score of 1.57 and a standard deviation of 0.764 as shown in figure 4.2 below. This indicates that majority of respondents have experience on the use of electronic procurement (Arende, 2015).

![Figure 4.2 Electronic procurement experiences](image)

4.3.3 Success of electronic procurement
The study sought to establish the success of the electronic procurement in the organization. 72.7% of the respondents revealed that electronic procurement has been successful in the organization and 27.3% think it has not been successful with a mean score of 1.27 and a standard deviation of 0.447 as shown in figure 4.3 below (Mose, et al., 2013).
4.4 Analysis of Objectives

In the research analysis the researcher used a tool rating scale of 5 to 1; where 5 were the highest and 1 the lowest. Opinions given by the respondents were rated as follows, 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree and 1= Strongly Disagree. The analysis for mean, and standard deviation were based on this rating scale.

4.4.1 Information Technology

Table 4.3 Information Technology

Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The organization has invested heavily in information communication and technology</td>
<td>132</td>
<td>4.11</td>
<td>1.093</td>
</tr>
<tr>
<td>Information technology has helped in controlling the inventory stocks</td>
<td>132</td>
<td>3.67</td>
<td>1.175</td>
</tr>
<tr>
<td>The system has added competitive advantage to the organization</td>
<td>132</td>
<td>3.85</td>
<td>0.517</td>
</tr>
<tr>
<td>The system has reduced operation costs for the organization</td>
<td>132</td>
<td>4.08</td>
<td>1.337</td>
</tr>
<tr>
<td>The system has helped in reducing ordering time and follow up</td>
<td>132</td>
<td>3.98</td>
<td>1.056</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>132</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The first objective of the study was to establish the effect of information technology on organizational performance of Kenya Ports Authority in Mombasa. Respondents were required to respond to set questions related to information technology and give their response.

The opinion statement in agreement that the organization has invested heavily in information communication and technology had a mean score of 4.11 and a standard deviation of 1.093. This is in agreement with Arende (2015) that an organization that invests heavily in information technology succeeds in the electronic procurement. The statement that information technology has helped in controlling inventory stocks had a mean score of 3.67 and a standard deviation of 1.175. The opinion statement that the system has added competitive advantage to the organization had a mean score of 3.85 and a standard deviation of 0.517. The opinion statement that the system has reduced operation costs for the organization had a mean score of 4.08 and a standard deviation of 1.337. The standard deviation that the system has helped in reducing ordering time and follow up had a mean score of 3.98 and a standard deviation of 1.056.

4.4.2 Information Systems

Table 4.4 Information Systems

Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improves quality of services while its absence or use of inappropriate means can act as a barrier to change and may lead to deterioration of the procurement function</td>
<td>132</td>
<td>4.02</td>
<td>.771</td>
</tr>
</tbody>
</table>
Measuring the performance of the organizations such as cost reduction, enhanced profitability, assured supplies

Important step towards risk reduction and mitigate of those that are most likely to occur

Placing and tracking orders are done online

Quick response and JIT replenishment

Valid N (listwise)

The second objective of the study was to establish the effect of information system on organizational performance of Kenya Ports Authority in Mombasa. Respondents were required to respond to set questions related to information system and give their response. The opinion statement in agreement that information system improves quality of services while its absence or use of inappropriate means can act as a barrier to change and may lead to deterioration of the procurement function had a mean score of 4.02 and a standard deviation of 0.771. The opinion statement that information systems measures the performance of the procurement function yields benefits to organizations such as cost reduction, enhanced profitability, assured supplies, quality improvements and competitive advantage had a mean score of 4.05 and a standard deviation of 1.058. The opinion statement that important steps towards risk reduction and mitigate of those that are most likely to occur had a mean score of 4.42 and a standard deviation of 0.667. The opinion statement that placing and tracking orders online had a mean score of 3.88 and a standard deviation of 0.973. The opinion statement in agreement that quick response and JIT replenishment had a mean score of 4.22 and a standard deviation of 0.755.

### 4.4.3 Procurement Staff Competencies

<table>
<thead>
<tr>
<th>Description</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing the procurement staff ICT competencies</td>
<td>132</td>
<td>4.05</td>
<td>0.960</td>
</tr>
<tr>
<td>Assessing staff attitude in ICT adoption</td>
<td>132</td>
<td>4.19</td>
<td>0.632</td>
</tr>
<tr>
<td>Management Support</td>
<td>132</td>
<td>3.53</td>
<td>0.851</td>
</tr>
<tr>
<td>Assessing suppliers' attitude on ICT adoption</td>
<td>132</td>
<td>4.06</td>
<td>0.696</td>
</tr>
<tr>
<td>Assessing the challenges of implementing ICT for procurement processes</td>
<td>132</td>
<td>3.95</td>
<td>0.960</td>
</tr>
<tr>
<td>Management solutions to challenges of implementing procurement processes</td>
<td>132</td>
<td>4.12</td>
<td>0.762</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td></td>
<td></td>
<td>132</td>
</tr>
</tbody>
</table>

The third objective of the study was to establish the effect of procurement staff competency on organizational performance of Kenya Ports Authority in Mombasa. Respondents were required to respond to set questions related to procurement staff competency and give their response. The opinion statement in agreement that assessing the staff ICT competencies had a mean score of 4.05 and a standard deviation of 0.960. The opinion statement that assessing staff attitude on ICT adoption had a mean score of 4.19 and a standard deviation of 0.632. The opinion statement that management support had a mean score of 3.53 and a standard deviation of 0.851. The opinion statement that assessing the challenges of implementing ICT for procurement processes had a mean score of 3.95 and a standard deviation of 0.960. The opinion statement that a management solution to challenges of implementing procurement processes has a mean score of 4.12 and a standard deviation of 0.762.

### 4.4.4 Procurement Internal Processes

<table>
<thead>
<tr>
<th>Description</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The organization has put in place good internal audit functions</td>
<td>132</td>
<td>4.01</td>
<td>0.805</td>
</tr>
<tr>
<td>The organization is transparent and accountable. It does ensure transparency by displaying performance results for all stakeholders</td>
<td>132</td>
<td>3.94</td>
<td>0.854</td>
</tr>
<tr>
<td>The organization is transparent and accountable. It does ensure transparency by allowing its books of accounts to be audited</td>
<td>132</td>
<td>4.05</td>
<td>0.799</td>
</tr>
<tr>
<td>The organization has a good leadership and management structure which support corporate governance</td>
<td>132</td>
<td>3.80</td>
<td>1.000</td>
</tr>
</tbody>
</table>

The organization has put in place good internal audit functions

The organization is transparent and accountable. It does ensure transparency by displaying performance results for all stakeholders

The organization is transparent and accountable. It does ensure transparency by allowing its books of accounts to be audited

The organization has a good leadership and management structure which support corporate governance
The organization follows a service chatter/policy for procurement purposes

| Valid N (listwise) | 132 | 4.04 | 936 |

The fourth objective of the study was to establish the effect of internal processes on organizational performance of Kenya Ports Authority in Mombasa. Respondents were required to respond to set questions related to internal processes and give their response. The opinion statement in agreement that the organization has put in place good internal audit functions had a mean score of 4.01 and a standard deviation of 0.805. The opinion statement that the organization is transparent and accountable that it does ensure transparency by displaying performance results for all stakeholders had mean score of 3.94 and a standard deviation of 0.854. The opinion statement that the organization is transparent and accountable had a mean score of 4.05 and a standard deviation of 0.799. The opinion statement that the organization has a good leadership and management structure which supports corporate governance had a mean score of 3.80 and a standard deviation of 1.00. The statement opinion that there are set procedures in my department to be followed at all times during purchasing had a mean score of 4.04 and a standard deviation of 0.936. This statement is in agreement with Njogu, (2012) that adoption of electronic procurement increases organizational performance.

### 4.4.5 Effects of Electronic Procurement on Organizational Performance

#### Table 4.7 Effects of electronic procurement on organizational performance

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenders are advertised online</td>
<td>132</td>
<td>3.47</td>
<td>1.094</td>
</tr>
<tr>
<td>Prospective suppliers submit proposals online</td>
<td>132</td>
<td>4.02</td>
<td>1.129</td>
</tr>
<tr>
<td>Short-Listing of tenders is done by the e-procurement system</td>
<td>132</td>
<td>4.13</td>
<td>0.833</td>
</tr>
<tr>
<td>There is a functioning website to facilitate electronic procurement</td>
<td>132</td>
<td>3.98</td>
<td>0.833</td>
</tr>
<tr>
<td>Specifications for procured items are posted to company website</td>
<td>132</td>
<td>4.12</td>
<td>0.865</td>
</tr>
<tr>
<td>Calls for tender proposal are done on organizations electronic procurement platform</td>
<td>132</td>
<td>4.04</td>
<td>0.766</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>132</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The opinion statement tenders are advertised online had a mean score of 3.47 and a standard deviation of 1.094. The opinion statement that prospective suppliers submit proposals online had a mean score of 4.02 and a standard deviation of 1.129. The statement that short listing of tenders is done by the electronic procurement system had a mean score of 4.13 and a standard deviation of 0.833. The statement that there is a functioning website to facilitate electronic procurement had a mean score of 3.98 and standard deviation of 0.833. The statement that specifications for procured items are posted to company website had a mean score of 4.12 and standard deviation of 0.865. The statement that calls for tender’s proposal are done on organizations electronic procurement platform had a mean score of 4.04 and a standard deviation of 0.766.

### 4.5 Correlation Analysis

To establish the relationship between the independent variables and the dependent variable the study conducted correlation analysis which involved coefficient of correlation and coefficient of determination.

#### 4.5.1 Coefficient of Correlation

In trying to show the relationship between the study variables and their findings, the study used the Karl Pearson’s coefficient of correlation (r). This is as shown in Table 4.8 below. According to the findings, it was clear that there was a positive correlation between the independent variable information technology, information system, procurement staff competency and procurement internal processes the dependent variable organizational performance. The analysis indicates the coefficient of correlation, r equal to 0.779, 0.745, 0.360 and 0.354 for information technology, information systems, procurement staff competencies and procurement internal processes. This indicates positive relationship between the independent variable namely information technology, information systems, procurement staff competencies and procurement internal processes and the dependent variable organizational performance.
Table 4.8 Pearson Correlation

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Electronic Procurement On Performance</th>
<th>Information Technology</th>
<th>Information System</th>
<th>Procurement Staff Competencies</th>
<th>Internal Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Procurement On Performance</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Technology</td>
<td>.779</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information System</td>
<td>.745**</td>
<td>.177*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procurement Staff Competencies</td>
<td>.360**</td>
<td>.165</td>
<td>.683**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Internal Processes</td>
<td>.354**</td>
<td>.054</td>
<td>.432**</td>
<td>.545**</td>
<td>1</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).

4.5.2 Coefficient of Determination

Table 4.9 showed that the coefficient of determination was 0.601. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (Organizational Performance) that is explained by all independent variables. From the findings this meant that 60.1% of project implementation is attributed to combination of the four independent factors investigated in this study.

Table 4.9 Coefficient of determination (R2)

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>.775a</td>
<td>.601</td>
<td>.581</td>
<td>1.29720</td>
</tr>
</tbody>
</table>

Predictors: (Constant), Procurement internal processes, procurement staff competencies, information system, information technology

This means that 60.1% of the relationship is explained by the identified four factors namely information technology, information system, procurement staff competency and procurement internal processes. The rest 39.9% is explained by other factors in the procurement industry not studied in this research. In summary the four factors studied namely, information technology, information system, procurement staff competency and procurement internal processes explains or determines 60.1% of the relationship while the rest 39.9% is explained or determined by other factors.

4.6 Regression Analysis

4.6.1 Analysis of Variance (ANOVA)

The study used ANOVA to establish the significance of the regression model. In testing the significance level, the statistical significance was considered significant if the p-value was less or equal to 0.05. The significance of the regression model is as per Table 4.10 below with P-value of 0.00 which is less than 0.05. This indicates that the regression model is statistically significant in predicting the effects of electronic procurement on organizational performance of Kenya Port Authority in Mombasa.
Basing the confidence level at 95% the analysis indicates high reliability of the results obtained. The overall Anova results indicates that the model was significant at F = 29.636, p = 0.000.

Table 4.10 ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>112.438</td>
<td>4</td>
<td>28.109</td>
<td>6.406</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>557.282</td>
<td>127</td>
<td>4.388</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>669.720</td>
<td>131</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Electronic Procurement on Performance
b. Predictors: (Constant), Internal Processes, Information Technology, Information System, Procurement Staff Competencies

4.6.2 Multiple Regression Analysis

The researcher conducted a multiple regression analysis as shown in Table 4.11 so as to determine the relationship between organizational performance and the four variables investigated in this study.

Table 4.11 Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Coefficientsa</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
</tr>
<tr>
<td>Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>34.787</td>
<td>2.942</td>
<td>11.823</td>
</tr>
<tr>
<td>Information Technology</td>
<td>.545</td>
<td>.071</td>
<td>.052</td>
<td>.636</td>
</tr>
<tr>
<td>Information System</td>
<td>.431</td>
<td>.175</td>
<td>.020</td>
<td>.175</td>
</tr>
<tr>
<td>Procurement Staff Competencies</td>
<td>.390</td>
<td>.138</td>
<td>.261</td>
<td>2.171</td>
</tr>
<tr>
<td>Internal Processes</td>
<td>.271</td>
<td>.118</td>
<td>.223</td>
<td>2.290</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Electronic Procurement on Performance

The regression equation was:

\[ Y = 34.787 + 0.545X_1 + 0.431X_2 + 0.390X_3 + 0.271X_4 \]

Where;

- \( Y \) = the dependent variable (Organizational Performance)
- \( X_1 \) = Information technology
- \( X_2 \) = Information System
- \( X_3 \) = Procurement Staff Competencies
- \( X_4 \) = Internal Processes

The regression equation above has established that taking all factors into account (Organizational Performance as a result of information technology, information system, procurement staff competencies and procurement internal processes) constant at zero organizational performance will be 34.787. The findings presented also shows that taking all other independent variables at zero, a unit increase in information technology will lead to a 0.545 increase in the scores of organizational performance of Kenya Ports Authority; a unit increase in information system will lead to a 0.431 increase in organizational performance of Kenya Ports Authority; a unit increase in procurement staff competencies will lead to a 0.390 increase in the score of organizational performance of Kenya Ports Authority and a unit increase in procurement internal processes will lead to 0.271 increase in the score of organizational performance of Kenya Ports Authority. This therefore implies that all the four variables have a positive relationship with organizational performance with information technology contributing most to the dependent variable.
SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
The chapter provides the summary of the findings from chapter four, and it also gives the conclusions and recommendations of the study based on the objectives of the study. The chapter finally presents the limitations of the study and suggestions for further studies and research.

5.2 Summary of the Findings
The objective of this study was to examine the effects of electronic procurement on organizational performance in Kenya Ports Authority in Mombasa County. The study was conducted on 132 employees of Kenya Ports Authority out of 195 employees that constituted the sample size. To collect data the researcher used a structured questionnaire that was personally administered to the respondents. The questionnaire constituted 28 items. The respondents were the employees of KPA. In this study, data was analyzed using frequencies, mean scores, standard deviations, percentage, Correlation and Regression analysis.

From the study the results revealed that the organization has adapted to electronic procurement for the last 1-5 years and that electronic procurement has been largely successful.

5.2.1 Information Technology
The study results revealed that Kenya Ports Authority has invested heavily in the electronic procurement system. The study further revealed that information system has helped in controlling the stock inventory and reduced ordering time and follow up time. This adoption of the information technology has added a competitive advantage to the organization.

5.2.2 Information System
The study results revealed that information system has helped to improve the quality of services. Further, the study reveals that information system has put in place steps towards risk reduction and mitigate of those that are most likely to occur.

5.2.3 Procurement Staff Competencies
On procurement staff competencies, the study results revealed that Kenya Ports Authority has qualified staff in there procurement department. Their attitude towards the use of electronic procurement is great and has adopted ICT skills.

5.2.4 Internal Processes
The study results revealed that the organization has put in place good internal audit functions and that the procurement department is always open for accountability and transparency. Further, the results revealed that the organization has good leadership and management structure which support corporate governance.

The coefficient of determination was 60.1% and the correlation between dependent and independent variable was strong positively

5.3 Conclusion
From the research findings, the study concluded the following:

5.3.1 Information Technology
That information technology is an important component of electronic procurement in state corporations. That electronic procurement rides and thrives on information technology to provide infrastructure where the both end users interact.

5.3.2 Information System
That information system provides the software of electronic procurement which is mounted on the information technology to enhance free follow of information between the suppliers and the host. When suppliers install this software it enables them to place their orders with ease.

5.3.3 Procurement Staff Competencies
That competency of the procurement staff enables the organization to have goods and services procured at the right time and the right prices. This enables the organization to be efficient and thus impacts positively on the performance of the organization.

5.3.4 Internal Processes
That internal process in the organization leads to good leadership and supports corporate governance. Internal process helps to build service charters and service policies.

5.4 Recommendations
The study recommended the following;

1. On information technology, that KPA should adopt technology supported procurement processes so as to minimize the human interactions with the suppliers thus reducing corruption issues in the procurement management.

2. On information system, that KPA should adopt a user friendly information system that all suppliers can use with ease be they tech-savvy or the old suppliers. This will reduce the bias on the use of electronic procurement and all will embrace it

3. On procurement staff competencies, that KPA should from time to time train their
staff on the use of electronic procurement to build capacity and increase efficiency in the organization.

4. On internal process, that KPA should frequently improve their internal processes to reduce bureaucracy and increase efficiency.

5.5 Suggestion for Further Studies
This study focused on the effects of electronic procurement of organizational performance on Kenya Ports Authority Mombasa County. Since only 60.1% of results were explained by the independent variables in this study, it is recommended that a study be carried out on other factors that affect organizational performance. The research should also be done in other organizations and the results compared so as to ascertain whether there is consistency on the effects of electronic procurement on organizational performance of Kenya Ports Authority in Kenya.

REFERENCE


Challenges in E-procurement Adoption among Large Scale Manufacturers in Nairobi Kenya. European Scientific Journal, 32(60), pp. 234-396.


28. Sarkar (2009) provided a framework for the successful implementation of e-procurement. Revealed that there is value in e-interaction with customers and suppliers in the form of prompt feedback provided through web technology.
