# E-PROCUREMENT AND SUSTAINABILITY OF STATE CORPORATIONS IN KENYA

**BY**

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**A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI**

**NOVEMBER, 2016**

# DECLARATION

This research project is my original work and has not been presented for award of a degree at any other university.

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# DEDICATION

I dedicate this project my family and friends for the support for their great moral support and also their tremendous encouragement throughout my studies.

# ACKNOWLEDGEMENT

My sincere thanks go to all those who in one way or another, directly or indirectly, have played a role in the realization of this project. First, my special thanks to my supervisors Mr. Joel Lelei and Mrs. Nancy Marika for their professional guidance and dedication towards shaping my work as well as the whole of the UON fraternity. I take this opportunity also to express my deep gratitude to my parents Mr. and Mrs. Muraya, family and friends for their support and encouragement during the period of writing this project. My Thanksgiving goes to the God Almighty who made this happen.

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**CSR**: Corporate Social Responsibility

**ICT**: Information and Communications Technology

**SCAC**: State Corporations Advisory Committee

**SP**: Sustainable Procurement

# ABSTRACT

The primary objective was to determine the e-procurement practices employed by state corporations in Kenya. The objectives of the were to determine how electronic procurement is related to sustainable procurement in Kenya's state societies and establish challenges faced in e-procurement by state corporations that operate in the Kenyan market. The research developed employed graphic study design. The study covered an average population of 262 state corporations. The sampling method used to identify study respondent was Stratified random sampling because of ease in the classification of the population into strata's. The sample comprised of 25% of each level of the target population. The method used for the primary data collection was a use of Questionnaires. The analysis of data was done using descriptive statistics which included standard deviation, means, and frequency. The results show that most of the State Corporation had operated for an averagely extended period and they have a good understanding of the effect of electronic procurement. E-tendering reduces cost, lead time, improve quality and flexibility. The e-reverse auction was found to assist State Corporation in achieving its strategic sourcing. E-sourcing contributed to a reduction of cost and improvement of efficiency in the procurement processes. Active e-procurement practices in State Corporation leads to improvement in quality and service delivery.

# CHAPTER ONE
# INTRODUCTION

## 1.1 Background of the Study

In the period of ten years, people and organizations have been raising a lot of concern on the sustainable development and how this will affect the businesses, environment as well as the society as a whole. The interest in this sustainability is aimed at ensuring that both investors and companies have to demonstrate high interest in corporate social responsibility, sustainability and reducing impacts of their production activities on the environment (Srivastava, 2012). The consistent engagement of electronic of objectives in the public service as well as a process of purchase and supply have been termed as very sustainable procurement and is in line with pursuing the goal of sustainable development through the provision and purchasing process, political incorporation, both environment and aspect of the economy. As a result, many countries have developed sustainable economic policies with the full support of different governments. The government plays a significant role in stimulating the economic sustainability by; demanding both socially and environmentally friendly products and services from suppliers. They, in turn, offer those products to customers in the market (McCrudden, 2010).

Any procurement system takes a very significant role in the supply chain system of different companies that will mainly involve both a firm's both short term, long term and strategic decisions. Majorly, the procurement function of the organization is subdivided two: operational and policy processes. The activities and the operations in this sector operate differently (Kaufmann, 2009). Furthermore, the use electronic procurement system can be utilized together with diverse technologies of different commercial systems which include management of workflow, board's bulletin and e-

mailing to enhance reengineering of business processes. With these and other combinations, e-procurement has resulted in some benefits not only to the organization but also to the strategic position of a firm. This will help to harmonize purchasing power as well as activities that will enhance the provision of better service from the distributors, fasten the movement of crucial information between the sellers as well as the buyer. This minimizes the number of hours used in the administration hence reducing the number of duties to be undertaken. This makes the flow of information faster into the new market that is very competitive (Dong et al., 2009).

Weiss and Thurbon (2006) point out that due to the scale as well as the advantages of public procurement and the capacity of the public procurement ability to play a vital role in social benefits delivery both directly and by impacting the activities of private sector organizations, it has emerged to be a necessity to shed greater light on how public organization has been encouraged by effective policy initiatives to procure goods and services sustainably

### 1.1.1 E-procurement

The E-procurement is the ability to use the Internet in the purchasing (Boer et al., 2008). The electronic procurement is the integrated information technology that is based the purchasing system that is used at the input end of the chain off. Hence e-procurement rests on the sale and procurement of goods and services by making use of Internet and other networking using information systems, such as interchange of the electronic data and resource planning enterprise. The electronic Procurement has increased its popularity because of benefits associated with its adoption. These benefits include the reduction in the cost of supply and lead time as well as enhanced transparency (Bof & Previtali, 2010). From the organization's strategic point of view, e-procurement will help in fraud prevention and company reputation. Further, it is

appreciated that firms' information systems have become continuously connected with other infrastructures that have led to the growth of enterprises (Vaast & Walsham, 2012). Therefore, the increased use of new technology in the system of e-procurement is considered to be a great innovation and strategic action that has enabled purchasers to buy goods and services through the use of various internet facilities.

The main reason for adopting such kind of technologies in the public sector is majorly driven by demographic, societal, economic, political and change of policy, finite financial resources with which public sector and organizations operate (Sarikas & Weerakkody, 2007). In the local government sector, some these factors have led to various public institutions to adopt innovative technologies to introduce more efficiency in how they operate, deliver services and engage with stakeholders. According to Attaran and Attaran, (2007), societal factors include consumers being increasingly more conscious of their rights as customers of public services, have greater expectations of, and insist on, better levels of service provision. All these factors have increased the need for a firm to adopt a better operational system that will help in meeting the needs of the business as well as external stakeholders.

The use of E-Procurement by the organizations has resulted into increase in profitability, ease of control and improved efficiency and effectiveness in the corporate procurement process (Khanapuri et al., 2011). Also, research also shows that e-procurement results in reduced lead time, supply cost, and transparency (Bof & Previtali, 2010). Most of the e-procurement benefits are at the strategic level. This includes fraud prevention, maintenance of the reputation of the company (Piotrowicz & Irani, 2009). Studies have downplayed the ability of e-reverse auctions that helps in reduction of purchasing prices for organizations especially those with the small

volume of purchase (Adebanjo, 2010). Electronic- Procurement also consists of components like electronic catalogs, electronic tendering, electronic Purchase Orders (POs) electronic auction and even automated workflow. Systems implementation can be done using either a dedicated transactional e-procurement system or leverage an advanced Financial Management Information System. Most of the suppliers use Vendor Managed Inventory (VMI) services as an expansion to their day today's system of procurement.

### 1.1.2 Sustainable Procurement

Sustainable procurement (SP) has received different definitions as there are authorities in the same field. According to UK SP Task Force procurement sustainability is the process where an organization satisfy customers 'requirement for provision of goods, services and utility of working in such a manner that it tries to achieve value for monetary service on almost a whole life basis in terms of generating value additions both to the society, economy and the organization at large as it ensures that they optimize environmental conservation measures (DEFRA, 2006). In his argument, Preuss (2009) defines Sustainable Procurement as the process of integrating concerns looking into wider environmental impacts within procurement which are undertaken majorly by the government and other bodies in the public sector. Therefore, SP is mainly involved with a different kind of success in the social and systems of the environment through the procurement channels. Therefore, Sustainability Procurement puts a lot of efforts in the social-economic aspects of purchasing decision making.

Vachon, Klassen (2006) noted that when there was the emergence of the paradigm shift in making use of green supplies, key themes that include but not limited to engaging environmental issues in supply management developed. This has been

advocating for more and more social problems to be incorporated when dealing with supply chain system. Therefore, this has led to an increased discovery that procurement has a greater role to play in moving forward corporate sustainability agenda as well as influencing the external environment of the organization in the supply chain (Seuring, 2008). He, however, points out that the possible available procurement frameworks that help in the examination of how well suppliers can sustain the market. It focuses things dealing with standardization of the. There is the need for the management of a particular organization to focus not only on the short-term perspective of the company but also the long-term relationship with all its stakeholders and the environment (Meehan and Bryde, 2011). The purchasing function has begun to take in a very crucial role in the strategic planning and development of the business activities to be implemented in the future, and therefore strong business policies should be put in place to change the set of different kind of issues in which most of them have affected the environment.

The incorporation of e-procurement in an organization including public bodies is dependent upon various factors that will influence its success. These factors are both internal and external, and within public sector institutions, there is the need for the provision of adequate investments for creating or developing electronic procurement skills of management through training delivery schemes for in-house staff or recruited workers. There are other challenges as identified by MacManus (2002). For a successful electronic procurement, top management must show their full support, organizational readiness, firm size, and trust are among the partners as well as risk and policy factors. This is mainly because management of procurement procedures requires a lot of strategic and management processes.

### 1.1.3 State Corporations in Kenya

A corporation is a statutory entity created by the government to conduct commercial activities on behalf of the government. It is also referred to as a parastatal or state business because it is the part of the economy that is entirely controlled by the government for the purpose of providing essential government services. Kenya has over two hundred and six parastatals that are categorized according to their functions i.e. regulatory, service, and commercial and manufacturing, and so on. According to the act of Parliament, State Corporations Act Cap 446, established to aid in the creation, regulation and connection of state corporations. Section 3 of the President act, the president, can through the order, creates an organization state mandated for the performance of roles specified in that act. He then assigns ministerial responsibility for any the corporation and all issues that relate to it directly to the Deputy-President and other cabinet secretaries. In section 5 of the same act, every state enterprise shall be empowered by the existing authority to enable it to perform its functions. State Corporations Act (2010). Moreover, the constitution created State Corporations Advisory Committee (SCAC) that was given the mandate to provide advice to the government on matters pertaining general administration of State Corporations as clearly spelled out in section 27 of the Act. (www.scac.go.ke).

The procurement function of the State Corporation has been facing challenges ranging from late payment to suppliers to cases of inflated prices of sourcing services and products. Further, Kingori (2014) opine that there have been increased cases of short-term view in the procurement function through action such as improper disposal of waste products, operations of the government suppliers in unsafe environment and also in some cases the use of child labour in the production process and this calls upon the State Corporations to embrace procurement sustainability in their operations. This,

therefore, forms the basis of this particular kind of study that seeks to come up with electronic procurement practices and how it enhances sustainable supply.

## 1.2 Research Problem

The landscape of the global sourcing regularly produces challenges that are new, risks and opportunities that encourage innovation. This increases the complexity of purchasing and management of supplies. Online e-procurement platforms –as one of the purchasing system- to be adopted by organizations or institutions, provide greater transparency in organizational spending (demanded by constituents), boost efficiency and provide commodity savings. These advantages are especially attractive given tighter budgets and pressures on government institutions procurement resources to do more with less (Presutti, 2008).

The desires for an organization to look out of the boundaries of the body explain the significant role of procurement in any sustainable development. This is evidenced by the large volume of case research that relates to the use of green management of supplies as well as sustainable procurement (Seitz and Wells, 2006).However; previous studies have not delved so much into sustainable supply in public sector.

Azadegan (2008) outlines that the increased pace of the evolution of the technology has made and adopted new technologies, this include the use of electronic procurement as standard practice. However, many firms did not uniformly adopt all technologies available. This implementation difference in electronic procurement system is amongst things that are significantly influenced by national culture. Batenburg (2007) discovered that those firms from countries with a low level of certainty avoidance like the United Kingdom and the Germany which are amongst the earliest adopters of electronic procurement. Countries that is far-reaching in

embarrassing change like France that has lowest adoption rates. On the side of the sustainable supply, its research is majorly meant to look into different case studies, making use of research and investigation on how to increase sustainability especially when buying from suppliers in the firms like manufacturing and processing (Hall and Purchase 2006).

(Azadegan, 2008) Explains out that the faster pace of the development of procurement sector has made many organizations to adopt new technology such as those that are used in the electronic procurement as a standard practice. However, many industries have not uniformly adopted new technology. This difference in the adoption of the electronic procurement system, among other things, affected by the national culture. Batenburg (2007) discovered that firms from countries which have a very low uncertainty avoidance including Germany and the UK which are the earliest adopters of e-procurement. Countries that is less reluctant to change such as Spain and France have very low rate of adoption. On the part of sustainable procurement, its research has tended to examine particular case studies, often taking a sectoral perspective by investigating how sustainability can be encouraged when buying from suppliers in specific industries, for example, in the building and construction (Hall and Purchase 2006).

Several studies related, Athman (2012) researched on the Effect of Government Regulations on Supply Chain development and Performance of Marketing oil companies in the Kenyan market and found that unlike in the private sector, stringent procurement policies are adopted by government agencies, and this slows down the speed of procuring services in the public sector. However, this study did not delve into linking the e-procurement to the sustainability of the organization. On her part, Dajissa (2011) researched on how the market is affected by Outsourcing of services of

Training on Supply Chain Performance in Government corporations. An excellent Case Study was drawn from KPLC Ltd and discovered that the supply chain performance was being influenced by the quality of service, supplier management, supplier relationship, and selection of a vendor, time service delivered and the internal assessment of criticality of business activities. Kingori (2013) researched on the effects of electronic procurement on the performance of supply chain at the office of TSC. This researcher established that e-procurement helps in strengthening the process of auditing and helping staff and auditors to verify and keep on track the flow of orders around the different system. Electronic procurement can be used any time of the day, and reduce the inventory level. Moreover, the theory of e-procurement has been linked with the performance of the organization and not to the sustainable society. Therefore, this leads to the research question: Specifically what is the relationship between electronic procurement and sustainability of supply chain in State Corporations in Kenya?

## 1.3 Research Objectives

The following are the primary objectives of study:

i. To establish the electronic procurement practices that are employed by state corporations in Kenya
ii. To determine the relationship between electronic procurement and sustainable procurement in state corporations in Kenya.
iii. To establish challenges faced in e-procurement by state cooperations in Kenya.

## 1.4 Value of the Study

This research would be of great benefit in the sense that, it would increase the body of knowledge relating to diffusion of technology in different sectors of the economy and how technology can be used to enhance the existing operations in an organization for sustainable operations. The traditional short-term view is no longer tenable in the present business environment where organizational activities should be tailored in such a way that it would have minimal effect on the environment and people. The resource-based theory would further be enhanced in the sense that the study would suggest ways of how organization internal resources would be applied in the enhancement of environmental sustainability.

The research findings would be of great value both to the management and staff of state corporations who would gain insight into how their institutions can effectively administer e-procurement to improve their procurement function to not only gather for the needs of the internal stakeholders but also external. This study would offer insight on the significance of embracing sustainable procurement practices and thus provide a very significant competitive advantage to the organization. Further, the research would be of relevance to practices of appropriation, incorporation of national government response to electronic procurement.

The study was expected to improve bundle of knowledge to the scholars who are interested in the acquisition and its influence on sustainable practices by government institutions as well as how the existing methods being employed by a firm will change a solid performance in the long-term.

# CHAPTER TWO
# LITERATURE REVIEW

## 2.1 Introduction

In this section, writing of importance to the study was assessed. Primary areas of this literature that became the point of focus in this segment incorporate the possible structure. Furthermore, this study takes into account the practical part of e-procurement and its preliminary survey.

## 2.2 Theoretical Review

The hypothetical viewpoints assume a role as the filter for centering and bounding the information to be gathered. This study will be guided by the diffusion innovation theory and the resource-based view theory.

### 2.2.1 Diffusion Innovation Theory

Diffusion of Innovation (DOI) hypothesis by Rogers (2003) portrays the way of spreading advancement through communication lines after sometime among the individuals from a social framework. Roger's explanation points interest on development choice process into learning, influence, judgment, execution, and affirmation. The ultimate result of this diffusion is that people, as a noteworthy of social structure, grasp another idea, conduct, or thing. Choice of another idea, lead, or thing does not happen at the same time in a social system; rather it is a strategy whereby a couple of people are more skilled to grasp the headway than others (Hager, 2006).

Li and Atuagene-Gima (2011) noticed that diffusion hypothesis of innovation looks to clarify how new thoughts or developments were embraced and this theory recommends that there are five qualities of a development that influence reception; relative advantage, similarity, complexity, trial capacity and observe position. The

hypothesis proposes that advancements that have a reasonable, unambiguous favorable position over the past approach will be all the more embraced and executed. When leading players understand innovation as being simple to apply, the advancements will be adopted with a lot of ease (Greenhalgh et al., 2004). Given that new developments resources like time and energy, innovations that had been tried before being fully implemented are more readily adopted. Observe- capacity is the level of which the outcomes of innovation are openly seen by those adopting. In case visible positive results from the implementation of the advancements then the development is readily embraced.

### 2.2.2 Institutional Theory

The institutional theory perceives the installation of institutional performing artists in a domain of formal and casual tenets. Institutional scholars propose that hierarchical activities and procedures are driven by their on-screen characters keeping in mind the end goal to legitimize and conceivably clarify their operations. As per this point of view, methodology usage is reasonably represented by authoritative performing artists and established in the standardizing and social setting that spurs on-screen characters to look for authenticity (Dacin, Oliver *et al.,* 2007). Through different intellectual, regularizing and regulative powers associations receive an institutionalized arrangement of practices (Scott 2001). As it were, an association is made out of three pillars: the social subjective, standardizing, and regulative components that together with related exercises and resources give soundness to social life.

Accordingly, Institutional Theory as a center to comprehend E-procurement reception, it is placed that mimetic, coercive, and regulating weights were existing in a standardized situation may impact associations' inclination toward an IT-based between authoritative framework (Soares and Palma, 2008). Mimetic pressures are

seen when organizations receive a practice or advancement copying the competitors. At the point when a firm realizes that a contender has embraced a development and that progress has been a win, the firm has a tendency to adopt a similar advancement (Cox, 2010). Indeed, when confronting issues of vulnerability in what concerns a development, leaders minimize seek expenses and additional test costs and maintain a strategic distance from administration dangers. The presence of mimetic pressures toward an appropriation of events by associations is affirmed in and (Barua, Prabhudev Andrew and Fang, 2009). In this way, we consider that organization could check their opposition surroundings so as to assess the points of view in regards to EPS and adoption.

### 2.2.3 Technology–Organization–Environment Theory

The technology–organization–environment framework was progressed by Tornatzky and Fleischer (1990) and clarifies the selection of mechanical developments and recognizes three parts of an association's setting that can impact the procedure by which organizations embrace innovative advancements: the technological setting, the original background, and the green setting. The organizational environment is characterized as far as a few engaging measures: fixed size; the centralization, formalization, and many-sided quality of the firm’s administrative structure; the nature of organization’s setting depicts both the personal and outside advancements significant to the business. This incorporates improvements existing inside the company, and the pool of available innovations in the market. The ecological setting is the field in which a firm leads its business its industry, its rivals, its entrance to assets provided by others, and the company's involvement with the administration.

The hypothesis also opines that because of coercive pressures, whether formal or casual powers, applied on associations by different organizations after that the past relationships depend on. For example, a client firm, a mother organization and an administrative body might be wellsprings of coercive weights. It is clear that a leading company, which commands the market, may impose to those who depend on to them reception of programs, structures, or innovations. Regularizing pressures originate from dyadic relations where organizations share some data, tenets or rules, and standards. Sharing these standards through social channels among individuals from a system encourages accord, which, thus, expands the quality of these standards and their potential impact on organizational conduct. The Past the outcomes described.

## 2.3 E-Procurement

E-Procurement alludes to the utilization of Internet-based ICTs to do individual or all phases of the acquisition process, including search, sourcing, transaction, requesting, receipt, and post-buy audit (Mishra et al. (2015). According to Koorn *et al.* (2011), there are three sorts of e- procurement frameworks: customer e-procurement structure; seller e-procurement structure; and online go-betweens. While there are different types of e- procurement that focus on one or numerous phases of the acquirement procedure, for example, e-auction or reverse auction, e-marketing platform-tendering-purchasing or catalogue and, e- procurement can be seen all the more extensively as a conclusion to end arrangement that incorporates and streamlines numerous acquisition forms all through the association.

E-tendering, an association-wide, planned and the key way to deal with e-acquirement, by making a situation, which incorporates all partners - purchasers, providers, reviewers, and leaders, in an honest, cooperative and reasonable practice

environment. This device changes an unbending, handle driven environment into an adaptable, result from driven scene, wherein "obtaining storehouses" converge to clear a path for one complete, community oriented acquirement stage (Reddick, 2007). A business-to-business e-commercial center is a between authoritative data framework that permits the taking an interest purchasers and vendors in some market to trade data about costs and product offerings (Grewal, Comer, & Mehta 2007). E-commercial center structures are complex and shift impressively as indicated by the market creator's business system. Reversee-auctions are like the conventional aggressive offering, however with a bit as in a purchaser demands offers from different providers, yet as opposed to submitting composed offers, providers contend on-line, continuously. Suppliers typically provide some bids sequentially, after observing efforts of their competitors', e.g., Ebay. E-auction is cane of significantly decrease prices and that specialists anticipate they would, in the long run, replace traditional competitive offering altogether (Zeng, 2004).

The need to enhance public service delivery is turning into an important motivation for most administrations (Kaliannan *et al.*, 2009). Thus, governments of both developed and developing nations have grasped the Information and Communications Technology (ICT) to better the value of public service, public access to data and to encourage more involvement in public. This mission has been a lot of feedback and negative discernment that open obtainment administration at present is neither rich nor powerful (Moon, 2004). From such feedback and negative public judgment, governments find new and creative methodologies for advancing better and more proficient procurement administration to which Information Technology (IT) has turned into a likely answer for some authoritative issues in general society division. E-

procurement has developed as an imaginative contrasting option to accomplish a superior and more cost-effective framework.

## 2.4 Challenges of E-procurement

E-procurement as between large companies application confronts a few difficulties before it is ultimately executed in an association. This is because the ways toward taking part in outside supply base mean experiencing a heap of various provider innovation stages, or more awful yet - none at all and these difficulties that will influence the execution of e- procurement will be as a consequence of both interior and external variables. The usual type of problems incorporates, an absence of competent management, confining government arrangement, buyer-seller coordination, and worker ability.

### 2.4.1 Top Management

Senior administration support is a fundamental factor that affects the success of e-procurement implementation. There is little uncertainty that high government authority is primary to the accomplishment of an e-Procurement usage (Kaufmann, 2009). The top administration group must include the project administrator, any experts working with the board of trustees, and organization staff to build up an implementation procedure. In such manner, important consideration and support should be given central administration to guarantee that the acquisition change has been evidently understood in the office (Presutti, 2010). Moreover, the official government group is in charge of setting the vision and objectives, realizing aggregate responsibility for change in process and authoritative frameworks, and detailing the arrangements and procedures relevant to creating an e-Procurement activity (Hardy and Williams, 2011).

### 2.4.2 Government Policy

Procurement policies are principles and directions for overseeing acquirement methodology in an association. A legitimately planned and executed acquisition approach assumes a critical part in giving a directing structure to the implementation of great acquirement practices (Bartik and Hollenbeck, 2012). Public procurement can be utilized to support more major administrative approaches, both through customary and e- purchasing forms. Electronic acquisition in the public domain can be viewed as a strategy instrument to bolster the conveyance of open acquirement approach, enhancing straightforwardness and proficiency (Croom and Brandon-Jones, 2005).

### 2.4.3 Buyer/Supplier Integration

E-Procurement achievement is firmly identified with new provider inclusion. It is critical to exhibit the proposed answer for the vendors and talk about any necessary changes, issues, and concerns, for example, different alternatives in creating and keeping up suppliers lists (Cox, 2002). Providers ought to be taught on the e-Procurement benefits that can be given via a procedure of meeting as ahead of schedule as would be prudent in the venture. How much the achievement of an e-Procurement activity can be acknowledged may well be identified with the level of e-availability of suppliers, and suitable correspondence with suppliers is in this way vital (Kaliannan *et al.*, 2009).

Gunasekaran *et al.* (2009) expressed that organizations are not contemplating their e-procurement systems and neglect to include main providers at the soonest phase of execution of e- procurement. This may prompt to trouble in discovering great suppliers who could supply top notch items. There are worries among providers towards receiving e-acquirement and e-business particularly concerning the level of

vendors' association in utilizing e-acquisition advances. Such problem as depicted by Van Weele (2010) is about which suppliers are appropriate to make a deal.

### 2.4.4 Employee Competence

Vaast and Walsham (2012) recommended that attitudes and information of workers impact the future selection of another innovation to a substantial degree. Actualizing another change needs aptitudes and knowledge to work with the associations and most organization don't execute because unions representatives are not acquainted with innovation. The absence of suitable capacities and abilities can point of confinement specialists' efficiency. Capability based scholars every now and again proposes those organizations' capabilities to secure, absorb and abuses new innovative learning is straightforwardly identified with their arrangement of HR (Sahay and Ierapetritou, 2013)

Individuals are the most critical and costly part of an association. Associations' opportunities administrations for an undertaking finish and general framework quality are primarily impacted by the adequacy of the organization’s representatives are hard to come by. Vaidya, Sajeev and Callender (2010) that associations ought not to move their aggregate concentration from its workers to the clients as it is exceptionally enticing. As much as customers maintenance and unwavering news is essential to an association, important consideration ought to similarly be given for the workers remembering that its representatives who convey administrations to clients and along these lines it's them who holds them and construct organizational dedication in them.

### 2.4.5 Security and Authentication

As a result of the sensitivity of the administration information and the lawful way of orders and installments, security of information is necessary for e- procurement frameworks. The framework must have instruments for distinguishing and verifying the client who puts in order so that the supplier knows it is safe to satisfy the request. In an e-Procurement study, Srivastava (2012) relate the security necessities at the e-Tendering phase to validation, contending that e-Purchasing frameworks and procedures require insurance since they include a monetary exchange and might be defenseless against extortion. Weiss and Thurbon, (2006) highlight the requirement for exchanges between various frameworks to be traded insecure routes with outright confirmations in regards to the characters of the purchasers and supplier.

## 2.5 Empirical Review of E-Procurement and Sustainable Procurement

Soete and Ter, 2005) further provides support to the thought that associations that operate in public sector mostly don't have creativity and are very slow to change they tend to emphasize over on the conformity and instead defends their status quo without focusing on the act of creativity, change, and improvement. This is very evident when it comes to implementing innovation in the information technologies. This includes systems dealing with e-procurement. Following the usage of electronic Procurement initiative in the public sector demands the cross tradeoff data within and even among users. The organization of acquisition must also have the capacity to execute organizational learning as well as sharing the lessons learned during the period.

Gunasekaran and Global (2007) openly stated that hindrances in the system affect the smooth implementation of the electronic procurement. Hence, identifying such blockages is very crucial in developing the right way for the adoption of good and

fruitful electronic procurement for the organizational development. The hindrances can be infrastructure, strategic development, people, and even cultural upbringing. As Harland et al. (2008) stated, to explain diversity in the adoption of e-procurement among different organizations, five primary sorts of components that seem to impact the selection of e- procurement which is authoritative, availability, supply, vital and arrangement variables must be taken after.

E-procurement implementation has to be well managed to achieve the performance goals. Several significant favorable factors relate to both the competence electronic procurement service that is provided by an online auction intermediary and to the organizations own internal capabilities.

Another research was done by Batenburg (2007) on the electronic-procurement adoption by European groups. It was discovered that there are truly are big nations differences as with respect to the reception of electronic procurement, and that many firms from countries that have low uncertainty avoidance rate such as Germany and the UK which are the early adopters of e-procurement, while nations that are less hesitant to change such as Spain and France have lower adoption rates. Greunen, Herselman, and Niekerk (2010) also carried out a study on the passage of regulation-based e-procurement in the Eastern Cape provincial administration. The study found that quantifiable advantages of production network administration have not yet been acknowledged because of restricted comprehension of how store system management idea functions inside government environment.

Harms, Hansen and Schaltegger. 2013) talked about brand notoriety and picture proposing that central organizations are considered in charge of the natural and social effects of the whole inventory network and to be sure this is valid with teams that

have solid brands. Remarkable changes have come about due to the innovation that has happened in the information technology. This has, in turn, has brought about changes in the demands patterns in the society. With this effect, there an increasing need to involve ICT in passing on skills in the 21st century, because its adoption has reformed health, education, and other critical systems. Additionally, these changes have brought about the introduction of new methods of production hence educating people new skills in various areas so as to raise productivity (Tomei, 2005).

Pelgrum, et al. (2003) established that computers replaced the term IT at the close of moving a focus from computing technology to information storage and retrieval. This resulted from the introduction of ICT to the general public in the early 1990s, (Pelgrum ET AL. 2003). According to a United Nations (1999) 'ICT' includes a provision of internet services, IT equipment, telecommunications tools and many other specific ones.

Tomei (2005) identify lack of internal administrative framework as the main hindrance towards economic procurement system. Without legal structures, associations will always be confronted by challenges in the making its business much stronger. Since manageability requests expound and upgraded auxiliary frameworks inside the production network like quality control structures. Rice et al. (2005) say that in spite of outputs from inventory network venture can be very massive, difficulties are enormous too. This can be one of the major boundaries to the implementation of manageable procurement activities.

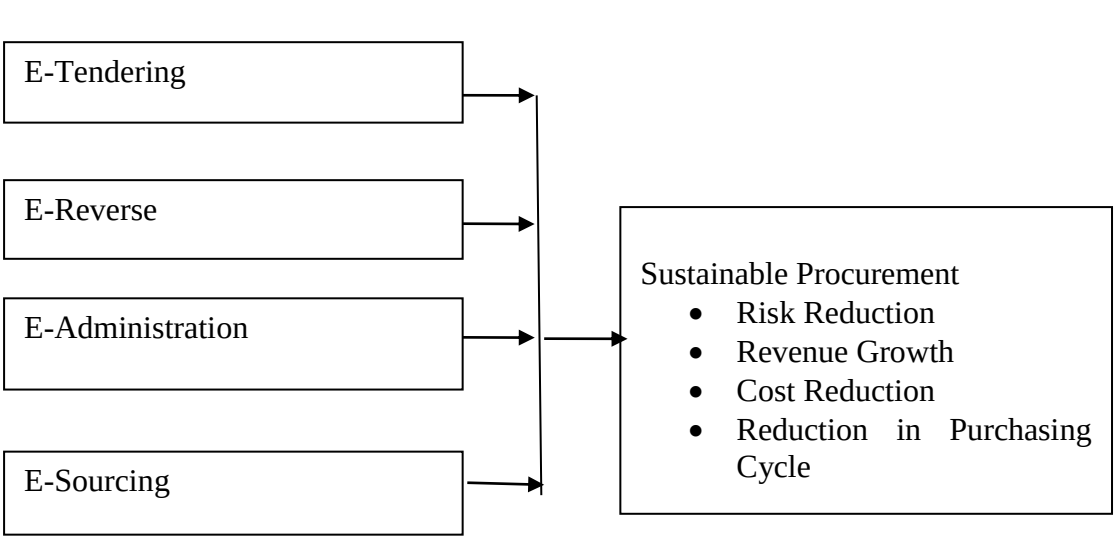
Buchanan (2008) studied on electronic procurement and execution of NGOs in Nairobi city located in Kenya using contingency theory. The contingency theory attempts to relate organizational performance to many management variables and

emphasizes the importance of situational influences on the administration of organizations. The methods observe that the real constraints and opportunities that a business can encounter arise from the very environments they transact in (Sahay and Ierapetritou, 2013). Contingency theory has been used to examine multiple relationships among variables and is, therefore, appropriate to study the relationships between financial literacy, financial access, transaction costs and microenterprise performance. The two most important concepts that help in the understanding of the market are customer behavior, competitions, and cross-functional coordination within the firm (Narver and Slater, 2011). The rest include generation of information, its sharing and market (Bearden et al.2011)

## 2.6 Conceptual Framework

The conceptual framework is a term that can be defined as a particular arrangement of the wide range of thoughts as well as standard is driven from different fields of inquiry and is mainly used in the structuring of consequent presentation (Viitakangas and Lilian, 2006). The diagrams are shown not only guide the study but will also help to demonstrate the association among the significant variables in the study as shown in Figure below. The independent variable will include e-tendering, e-cataloguing, e-auctioning and e-sourcing while the dependent variable is the sustainable procurement.

**Figure 2.1: Conceptual Framework**




**Source: Researcher, 2016**

E –tendering practices is where organization advertises through e-tender notices or e-requests, by sending the request for information, receiving bids and offers from suppliers, and informing providers on the award of contracts via the use of internet based data interchange. The use of e-tendering in the purchasing process has several advantages. The screening and selection of qualified suppliers are automated reducing the lead time, price, improving flexibility, quality among others.

E-Reverse Auction It provides an online platform where a pool of qualified providers can place bid in real time for the buyer's goods or services request. Reverse auction prices descend compared to traditional auction where price ascend (Emiliani and Stec, 2004). The e-Reverse Auctioning has benefits to both the buyer and seller. For the purchaser, ERA has advantages such as reduced time cycles, reduced prices, create standardization, increase geographical coverage, and it promotes transparency and accountability of the bidding process. The internet plays a primary function of transmitting relevant and critical data needed for the process.

E-administration Practices is the gathering and distribution of data for both internal and external users, tracking the progress of goods, accepting goods that meet the specifications a payment of goods using internet based program. New technology has given rise to new ways of conducting business and improving operational performance. The use of technology has led to increased performance, efficiency and improved service (Contini and Lanzara, 2009).

E-Sourcing Practices It is the process of identifying new supplier to deliver goods or services in a specified category through electronic means. It is an internet based application which enables a collaborative technology in the period of the procurement process between buyer and supplier. The e-sourcing is one of the best e-purchasing practices that organizations are employing to reduce costs (Kock, 2005). The e-sourcing creates a collaborative environment for buyers and suppliers by providing a centralized portal where they can share information effectively. Lovari and Parisi (2012) argued that provider contact is part of the sourcing process thus it needs to be established.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter discusses the best methodologies will be applied during the research process. It gives an elaboration on the different research design, the area population of study, sampling techniques that will be used, instruments of research and the process that will be used while gathering information as well as analysis of the data.

## 3.2 Research Design

The study made use of the detailed design of the survey. The study describes, interprets different phenomena. It is concerned mainly with the terms or connections that exist, sentiments held, processes that are ongoing, and the effects that can be evident or developing trends (Yin, 2003).

## 3.3 Population of Study

This is the complete set of individuals, cases and even objects which have some similar and observable features (Mugenda and Mugenda, 2003).The study population was 262 State Corporation in Kenya (Presidential Taskforce on Parastatal Reforms, 2013) as presented in Table 3.1.

**Table 3.1: Population and Sample**

| **Category** | **Population size** | **Sample Size** |
|---|---|---|
| Financials | 27 | 7 |
| Commercial and Manufacturing | 47 | 12 |
| Public Universities | 32 | 8 |
| Research and training | 26 | 7 |
| Service in the corporations | 55 | 14 |
| The Regional development | 19 | 5 |
| Tertiary training and education | 14 | 4 |
| Regulation | 42 | 11 |
| **Total** | **262** | **68** |

## 3.4 Sample Design

The researcher mostly made use of stratified sampling due to its ease of classifying the population into strata's. The sample comprised of 25% of each level of the target population. In according to the Mugenda and Mugenda (2003) a sample of about 10% is considered representative. The sampled state corporations were selected randomly based on the strata category. This approach was found appropriate since it ensured a representative sample.

## 3.5 Data Gathering

The research made use of the primary data that was gathered by questioners. It contained three sections or questions. Section A was used to ascertain the demographic information of the respondents while Section B helped identify the e-procurement practices and answered objective two. Part C contributed to determining the challenges. The last Section D linked e-procurement practices and sustainable procurement.

The questionnaires were administered using “drop and pick later” method for the State Corporation Supply Chain Directors. There was the follow-up to ensure that surveys were collected on time and assistance to the respondents having difficulty in completing the questionnaires was offered. The Follow-up calls were also made just ensure that all questionnaires were duly filled within the allocated period.

## 3.6 Data Analysis

The researched data was thoroughly checked to enhance consistency and accuracy. Demographic characteristics of the respondents were analyzed frequency and percentages. The challenges of electronic procurement, as well as the adoption of the e-procurement practices in the organizations, were analyzed using the means and standard deviation. The presentation was in the form of tables. The second objective

of establishing the relationship between e-procurement and sustainable procurement was determined by use of a regression equation. The e-procurement practices were regressed against sustainable supply performance adopted by the organizations.

The regression equation assumed the following form.

$Y = \beta o + \beta_1 X_1 + \beta X_2 + \beta_3 X_3 + \beta_4 X_4 + e$

Where $Y$ = Sustainable procurement

$\beta_i$ = ( i = 0 – 4 ) = Regression coefficient

$X_1$ = E-Tendering

$X_2$ = E-Reverse

$X_3$ = E-Administration

$X_4$ = E- Sourcing

e = Unexplained variables not explained by the model

# CHAPTER FOUR

# DATA ANALYSIS, RESULTS, AND DISCUSSION

## 4.1 Introduction

This chapter is about data analysis, results and interpretation. The researcher administered 68 questionnaires out of which 49 were filled and returned making a response rate of 73%. This is adequate for the study since as Mugenda and Mugenda (1999) stated, a response rate of 50% and above is good for statistical reporting. The chapter contains demographics information, e-procurement practices, challenges of adopting e-procurement, and relationship between e-procurement and sustainability.

## 4.2 Demographic Information

The demographic characteristics were then reconsidered. This study included the length of continuous service of the respondents, education level, the number of employees and the nature of a corporation. Results of analysis are shown in Table 4.1.

**Table 4.1: Demographic Information**

| Category | Item | frequency | percentage | Cumulative |
|---|---|---|---|---|
| Length of service | Less than five years | 10 | 20.4 | 20.4 |
| | 5-10 years | 16 | 32.7 | 53.1 |
| | Over ten years | 23 | 46.9 | 100.0 |
| Education level | Postgraduate level | 13 | 26.5 | 26.5 |
| | University | 27 | 55.1 | 81.6 |
| | Tertiary College | 9 | 18.4 | 100.0 |
| Employees total number | less than 200 | 15 | 30.6 | 30.6 |
| | 200-399 | 13 | 26.5 | 57.1 |
| | Above 400 | 21 | 42.9 | 100.0 |
| Nature of Corporation | Financials | 5 | 10.2 | 10.2 |
| | Commercial and Manufacturing | 10 | 20.4 | 30.6 |
| | Public Universities | 6 | 12.2 | 42.8 |
| | Training and research | 4 | 8.2 | 51 |
| | Service corporations | 10 | 20.4 | 71.4 |
| | Regional development | 3 | 6.1 | 77.5 |
| | Tertiary education and training | 2 | 4.1 | 81.6 |
| | Regulatory | 9 | 18.4 | 100.0 |

The results show that 46.9% of the respondents have worked in the state corporation for at least ten years whereas 32.7% of the people showed that they have collaborated in the state business for around five to ten years. The respondent further noted that 20.4% have been working in the state organization for around five years. The results showed that majority of those respondents have worked within those state business for a longer time and therefore they fully understand the e-procurement and sustainability.

The results that were found on the level of education indicates that 55.1% of the total number of respondents have at least attained university level while 26.5% of those respondents stated that they have a postgraduate degree in education. Also, 18.4% of the defendant showed that they had attained their tertiary school level. The outcome also indicates that greater part of those respondents has at least reached university level of education and therefore they have knowledge on thee-procurement and sustainability towards the realization of organization objectives.

The results on the number of employees show that 42.9% of the state corporation have more than 400 employees, 30.6% of the state corporation have less than 200 employees while another 26.5% of the state organization have between 200-399 employees. The results indicate that the state company has employed many employees and therefore to meet its operations costs and improve its performance.

The results show that 20.4% of the respondents belong to the department of commercial manufacturing and service corporations, 18.4% of the interviewees were regulatory, and12.2% of the respondents were public universities. Also, 10.2% of the respondents belong to the Department of financials while8.2% represented the training and research. The Respondent further indicated that 6.1% were regional

development and 4.1% expressed tertiary education and training. The results show that majority of the department in state corporation were fully respondent in the research study of e-procurement and sustainability.

## 4.3 E-Procurement Practices

The respondents were asked to provide responses on e-procurement practices in Kenya. The responses were on a five point scale where: 5= to a very large extent, 4= large extent, 3= moderate extent, 2= to a little extent and 1 = to no extent. The mean and standard deviations were determined. To interpret the mean scores, the five point scale is used where mean < 1.5= to no extent; mean of at least 1.5 but less than 2.5=to a little extent; mean of at least 2.5 but less than 3.5= Moderate extent; mean of at least 3.5 but less than 4.5= to a large extent; mean of at least 4.5 to 5= to very large extent. The e-procurement practices were categorized and analysed according to e-tendering, e-reverse, e-administration and e-sourcing.

### 4.3.1 E- Tendering

E- Tendering is a process whereby, the complete process of tendering right from publicizing to getting and presenting any delicate related data; all is done on the web. This empowers firms to be much more productive as paper-based exchanges are minimized or completely disposed of, encouraging for a faster informational exchange. It's this system that contains documents concerning bids, prices, etc. on the product. The results of the analysis of e-tendering and e-procurement practices are shown in Table 4.2

**Table 4.2: E- Tendering**

| E- Tendering | Mean | Std. Deviation |
|---|---|---|
| The commercial state corporation uses e-tendering to reduce cost, lead time, improve quality and flexibility | 3.5917 | .9826 |
| The Commercial State Corporation work together with suppliers to ensure success of then tendering process | 2.8750 | .9759 |
| The state corporation advertises, receive bids and offers from vendors using internet based program | 2.7500 | 1.0247 |
| The State Corporation use an electronics based platform for screening and selection of suppliers | 2.7917 | 1.1180 |

The result indicates that the financial state corporation use e-tendering to reduce cost, lead time, improve quality and flexibility (M=3.5917). Also, the Commercial State Corporation work together with suppliers to ensure the success of then tendering process (M=2.8750) while the state corporation advertises, receive bids and offers from vendors using internet based program (M=2.7500). The respondent noted that the State Corporation use an electronics based platform for screening and selection of suppliers (M=2.7917). Based on the finding, it can be concluded that e- tendering in State Corporation is vital because it assists in improving quality, flexibility and builds strong relationship with suppliers of the organization.

### 4.3.2 E-Reverse

E-Reverse provides an online platform where a pool of qualified providers can place bid in real time for the buyer's goods or services request. Reverse auction prices descend compared to traditional auction where price ascend.

**Table 4.3: E-Reverse**

| E-Reverse | Mean | Std. Deviation |
|---|---|---|
| The State Corporation use e-reverse auction to achieve its strategic sourcing | 3.8250 | .9959 |
| The State Corporation has an online bidding platform where suppliers can compare their prices with others | 3.7583 | .8412 |
| The state corporation uses online data to price its goods improving procurement performance | 3.6750 | .9349 |
| The State Corporation use an online system where supplier respond once when bidding | 3.6291 | 1.1077 |
| The State Corporation has online platform for a pool of qualified provider for real-time requests which improve operational performance | 3.5917 | 1.1970 |

The finding indicates that the State Corporation use an e-reverse auction to achieve its strategic sourcing (M=3.8250) while State Corporation has an online bidding platform where suppliers can compare their prices with others (M=3.7583). However, the state corporation uses online data to price its goods improving procurement performance (M=3.6750). The respondent further found that the State Corporation use an online system where supplier respond once when bidding (M=3.6291) and the State Corporation has the online platform for a pool of qualified provider for real-time requests which improve operational performance (M=3.5917). This implies that e-reverse provide information of organization's product prices which enables the suppliers to vary their prices with others. Also, it assists providers in bidding online for the products to supply to the organization like State Corporation.

### 4.3.3 E-Administration practices

It is the gathering and distribution of data for both internal and external users, tracking the progress of goods, accepting goods that meet the specifications a payment of goods using internet based program.

**Table 4.4: E-Administration Practices**

| E-Administration | Mean | Std. Deviation |
|---|---|---|
| The State Corporation has electronic based platform where buyers and suppliers exchange and access information | 4.2083 | .9770 |
| The state company uses intranet and extranet to collect data on the suppliers | 4.1784 | 9867 |
| The State Corporation allows buyers and suppliers to interact at their workstation via centralized portal | 4.1667 | 1.1671 |
| The State Corporation provides electronic meeting with their providers and other departmental staff using video conferencing | 4.0417 | 1.1601 |

The result indicates that the State Corporation has electronic based platform where buyers and suppliers exchange and access information (M=4.2083), the state corporation use intranet and extranet to collect data on the vendors (M=4.1784). The finding shows that the State Corporation allows buyers and suppliers to interact at their workstation via a centralized portal (M=4.1667). The Respondent further indicated that the State Corporation provides electronic meeting with their providers and other departmental staff using video conferencing (M=4.0417). It can be concluded that e- administration of State Corporation enables the supplier and buyer to access information.

### 4.3.4 E-Sourcing

E-Sourcing has become a critical procurement tool, allowing companies to connect, screen and shortlist suppliers, irrespective of whether they are present at the same location or at the same time often allowing category managers to secure better outcomes than from traditional negotiations.

**Table 4.5: E-Sourcing**

| **E-Sourcing** | Mean | Std. Deviation |
|---|---|---|
| State corporation uses e-sourcing to lower the cost and-and enhance effectiveness all the procedure of procurement | 3.8543 | .9131 |
| The State Corporation has online platform where buyer and suppliers work together | 3.7832 | .92825 |
| The Corporation and their suppliers use internet based application in the whole procurement process | 3.6667 | .8671 |
| The corporations identify new suppliers using web-based system. | 3.5379 | .9394 |
| The State Corporation has the web based on the evaluation of vendors. | 3.3667 | .9168 |

From the result, the respondent indicated that use of e-sourcing in State Corporation had reduced cost and improved efficiency in procurement process (M=3.8543) while State Corporation has the online platform where buyer and suppliers work together (M=3.7832). The finding shows that the Corporation and their suppliers use internet based application in the whole procurement process (M=3.6667). Additionally, corporations identify new suppliers using internet-based system (M=3.5379) and it has the internet based on the evaluation of vendors (M= 3.3667). This indicates that e-sourcing is paramount to the organisation like State Corporation because it leads to a reduction in cost, improvement in efficiency in procurement and togetherness between supplier and buyer.

## 4.4 Sustainable Procurement

This research also sought to establish the relationship between e-procurement and Sustainable Procurement. Data on the relationship between e-procurement and Sustainable Procurement is captured on a five point scale where: 5= to a very large extent, 4= large extent, 3= moderate extent, 2= to a little extent and 1 = to no extent. The mean and standard deviations were determined. To interpret the mean scores, the

five point scale is used where mean < 1.5= to no extent; mean of at least 1.5 but less than 2.5=to a little extent; mean of at least 2.5 but less than 3.5= Moderate extent; mean of at least 3.5 but less than 4.5= to a large extent; mean of at least 4.5 to 5= to very large extent. The results are as illustrated in Table 4.6

**Table 4.6: Sustainable Procurement**

| Sustainable Procurement Parameters | Mean | Std. Deviation |
|---|---|---|
| e-procurement has assured that suppliers comply with child labor laws | 4.3474 | .7798 |
| There has been increased purchases from small suppliers | 4.1947 | .9941 |
| The state corporation has been able to ensure the safety of incoming movement of product to our facilities | 4.1021 | .8342 |
| Facilitated the organization to engage with minority and women-owned business enterprise (MWBE) supplier purchase program | 4.1053 | .7374 |
| It ensures that providers' location are operated in a safe environment | 3.9316 | .7608 |
| The organization has been able to arrange for visits to suppliers' plants to ensure that they are not using sweatshop labor | 3.6842 | .7492 |
| The corporation has been able to commit to waste reduction goals | 3.6737 | .9642 |
| There has been increased volunteers from the organization for local charities | 3.6737 | .9642 |
| use a life-cycle analysis to evaluate the environmental friendliness of products and packaging | 3.5211 | .9015 |

The result indicates that e-procurement has ensured that suppliers comply with child labor laws (M=4.3474) while there has been increased purchases from small suppliers (M=4.1947). Also, the respondent found that corporation has been able to commit to goals on waste reduction (M=4.1021). The finding also showed that procurement facilitated to the organization engagement with marginalized groups supplier purchase program (M= 4.1053). The result indicated that acquisition ensures that vendors' tuitions are operated in a safety considerate environment (M=3.9 guarantee that they

are not using sweatshop labor (M=3.6842). The state corporation has been able to ensure the safety of inflow of product to our facilities and increase in volunteers from the business for local charities (M=3.6737). The respondent further noted the evaluation of environmental friendliness of products and packaging using life cycle analysis (M=3.5211). This indicates that e-procurement has ensured that suppliers adhered to child labor laws and the lead increase of purchases from the small vendor.

## 4.6 Challenges for Adopting E-procurement

The study sought to determine to what extent the respondents agreed with the accompanying sentiments on the hindrances for reception E-procurement in state corporations in Kenya. The responses were rated by using five point scale where5= to strongly agree, 4= agree, 3= Neutral, 2= disagree and 1 = strongly disagree. The mean and standard deviations were determined. To interpret the mean scores, the five point scale is used where mean < 1.5= strongly disagree; mean of at least 1.5 but less than 2.5=disagree; mean of at least 2.5 but less than 3.5= neutral; mean of at least 3.5 but less than 4.5= agree; mean of at least 4.5 to 5= strongly agree. The results are as illustrated in Table 4.7

## Table 4.7: Challenges Facing Adoption of E-procurement

| Statement | Mean | Std. Deviation |
|---|---|---|
| There isn't sufficient budget allocation for ICT and e-procurement by the state corporation | 4.2903 | .58842 |
| There are not enough ICT equipment in the state corporation | 4.1613 | .82044 |
| The procurement employees do not have basic IT knowledge | 4.0968 | .83086 |
| The departmental heads do not provide adequate support for to the supply accept responsibility for quality of goods | 4.0645 | .92864 |
| There isn't reliable structure established by the government bodies | 3.9355 | .81386 |
| There isn't adequate consultation with suppliers on the introduction and operation of e-procurement in the state corporation | 3.9355 | .96386 |
| Managers do not reward employee who does well in e-procurement | 3.8710 | .89946 |
| The management style does not promote change implementation | 3.8387 | .89803 |
| Employees are not adequately trained on fundamental skills of e-procurement. | 3.8065 | .84624 |
| Managerial policies do not favor implementation of e-procurement | 3.8065 | .98045 |
| Their level of trust between the corporation and its suppliers has not been developed | 3.6774 | .83215 |
| The isn't adequate supervisors guide on e-procurement challenges in the State Corporation | 3.5806 | .92283 |
| All the managers are not well versed with e-procurement practices | 3.5467 | 1.16588 |
| There isn't sufficient ICT infrastructure | 3.4839 | .96163 |
| Top management does not understand the fundamental spirits and principles of e-procurement | 3.3333 | 1.16634 |
| We do not have enough software and hardware | 3.1600 | 1.02720 |
| Employee knowledge in e- procurement is perceived to be adequate | 3.0968 | 1.13592 |
| The Corporation does not sponsor employees on ICT training | 3.0800 | 1.06238 |
| The level of readiness of distributors and awareness creation has not been established in the Corporation | 2.8000 | 1.02667 |
| The company does not involve suppliers at the early stages of the introducing e-procurement | 2.7200 | 1.12177 |
| I consider e-procurement as a threat to my jobs | 2.5733 | 1.13215 |

The result indicates that there isn't sufficient budget allocation for ICT and e-procurement in the state corporation (M=4.2903), there are not enough ICT equipment in the state business (M= 4.1613), and the procurement employees do not have basic IT knowledge (M=4.0968). Also, the departmental heads do not provide adequate support for to the acquisition accept responsibility for the quality of goods (M=4.0645). The finding shows that there isn't solid structure established by the government bodies and adequate consultation with suppliers on the introduction and operation of e-procurement in the state corporation (M=3.9355). The respondent found that managers do not reward an employee who does well in e-procurement (M=3.8710) and management style does not promote change implementation (M=3.8387). Further, the respondent believed that top management does not understand the elemental spirits and principles of e-procurement (M=3.3333). However, employee knowledge in e- procurement is perceived to be adequate (M=3.0968) and the Corporation does not sponsor employees on ICT training (M=3.0800). The respondent found that corporation does not involve distributors at the early stages of the introduction of e-procurement (M=2.7200) and consider e-procurement as a threat to my jobs (M=2.5733). This indicates that E-procurement in State Corporation is faced with challenges like sufficient budget allocation for ICT, lack of enough ICT equipment and basic IT knowledge.

## 4.7 E-Procurement and Sustainable Procurement

The study further sought to determine relationship between E-Procurement and Sustainable Procurement through Multiple regression analysis.

### 4.7.1 Regression Analysis

The researcher used SPSS to code, enter and calculate the measurements of the multiple regressions for the study. The Coefficient of determination explains the extent of the changes in the dependent variable that can be determined by the modification of the independent variables or the percentage of variability in the dependent variable (sustainability of state corporations) that is well explained by the following four independent variables namely; E-Tendering, Electronic Reverse, E-Administration and Electronic Sourcing.

The independent variables that were studied explain 83.4% of sustainability rate of state corporations that is represented by the adjusted $R^2$. This means that other factors that are not considered in the research paper contribute approximately 16.6% of thesustainability of state corporations. Therefore, a very extensive further research is highly required to investigate and come up with other factors other factors of the viability of national companies.

**Table 4.8: Model Summary**

| The Model | R | $R^2$ | The Adjusted $R^2$ | Standard. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.913 | 0.834 | 0.751 | 0.4538 |

### 4.7.2 ANOVA

**Table 4.9 Analysis of Variance (ANOVA)**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1.424 | 4 | .208 | 3.23 | .002[a] |
| | Residual | 5.375 | 45 | .232 | | |
| | Total | 6.799 | 49 | | | |

a. Predictors: (Constant), E-Tendering, E-Reverse, E-Administration and E- Sourcing

b. Dependent Variable: Sustainability of State Corporations.

ANOVA comprises of the computations that give rise to information pertaining levels of variance within particular regression models and hence forms a basis for the testing of significance. The "F" column provides an arithmetic for testing of the hypothesis that all $\beta \neq$ 0 compared to the null hypothesis that $\beta$ = 0 (Weisberg, 2005). From this findings, the significance value is .002 which is even less than 0.05. Therefore, the model is statistical significance when it comes to prediction of how E-Tendering, automatic reverse, E-Administration and E- Sourcing affects State Corporations sustenance in Kenya. The F critical at 5% level of significance was 3.23. Since F critically is far much greater than the F calculated (value = 2.21), this satisfies that the overall model was very significant.

### 4.7.3 Regression Coefficient

The multiple regression analysis was conducted to enhance determination ofthe relationship that exists between electronic procurement and state corporations sustainability Kenya. As per the SPSS generated table 4.19, the equation

($\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$) becomes:

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

The equation of regression above establishes that taking all factors into consideration E-Tendering, E-Reverse, E-Administration and E- Sourcing remains constant at zero, Sustainability of State Corporations in Kenyawill be at 1.308. The results also shows that taking all other independent variables at zero, an increase in E-Tendering by one unit lead to an increase in sustainability of corporation by 0.558; an increase in E-Reverse by one marginwill lead to a 0.731 increase ofSustainability of State Corporations in Kenya; a unit increase in E-Administration leads to 0.785 increase the Sustenance of Corporations.A marginal increase in E- Sourcing will automatically

lead to a 0.620 improvement in Sustainability of Corporations. This shows that E-Tendering contributes the largest share in theSustainability of State Corporations in Kenya followed by E-Reverse, E-Administration while E- Sourcingcontributes the minimum to the Sustainability of the State Corporations.

**Table 4.10: Correlation Matrix**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 1.308 | 1.342 | | 1.623 | 0.357 |
| **E-Tendering** | 0.558 | 0.310 | 0.172 | 4.342 | .0276 |
| **E-Reverse** | 0.731 | 0.156 | 0.210 | 3.532 | .0285 |
| **E-Administration** | 0.785 | 0.322 | 0.067 | 3.542 | .0202 |
| **E- Sourcing** | 0.620 | 0.245 | 0.148 | 3.458 | .0249 |

## 4.8 Discussion of the Findings

In a business perspective, e- procurement is becoming an opportunity for improvement of organization performance. Therefore, for State Corporation to remain sustainability, they have to embrace e-procurement. The study found out that industrial state corporation uses e-tendering to reduce cost, lead time, quality improvement and flexibility. It also encourages them to work together with suppliers for success in the tendering process. This agrees with Van Weele (2005) who conducted a study on internal customer satisfaction, through E-Procurement function and established that e-tendering lead to the decline of the value of cost. E-procurement can reduce quality costs by ensuring that selected distributors deliver the product or service that does the extensive quality of control. Electronic Procurement reduces quality by making sure that the contents bought are sufficient for the decision making.

The standardization of the product and the inner satisfaction of customers can be improved through Electronic procurement as a result of variation of the product concept. This can be achieved by reducing the number of different components of suppliers through the well-set standards.

It is observed that State Corporation use an e-reverse auction to meet its strategic sourcing while online bidding platform where suppliers can compare their prices with others. On the other hand, State Corporation has electronic based platform where buyers and suppliers exchange and access information. The research findings show that e-sourcing has reduced cost and improved efficiency in a procurement process. Also, the State Corporation has developed the online platform where buyer and suppliers work together. This is in line with Hawking et al. (2004) who argues that lack of business relationships with suppliers showing the need for an e-procurement enabled supply chain as another barrier to the implementation of e-procurement. The eighth challenge is Security of transactions. Working on the internet has become risky due to the hacking of information. This has made organizations fear using it. There are also interoperability concerns: Providing procurement information over the web produces interoperability concerns. This is because software companies have sought to make their product unique. In doing so, they have endeavored to stop the migration of data between systems.

The study found that e-procurement has ensured that suppliers adhere to child labor laws and there is the increase in purchases from small suppliers. However, procurement ensures that providers' locations are the safe operational environment. The study acknowledged that e- procurement is faced with challenges like insufficient budget allocation for ICT, lack of enough ICT equipment and lack of employees IT knowledge. This agrees with Heywood (2002), who observed that sometimes e-

Procurement results in significant investments of time and money, without absolute certainty that its full potential will be achieved every time. Adoption of Total Involvement Service and Quality Innovation has helped the procurement sector to improve service delivery. The findings show that thechange in one unit of Customer focus results into increased in the performance of procurement department. The change in one unit of technology adoption leads to increase in performance of companies that maximize use of electronic procurement. The change in one unit of Total Involvement Service leads to an increase in performance of telecommunication industry. Moreover, the change in Quality Innovation results into the shift in the performance of commercial sectors. These statistics aid in determining the relative importance of each and every variable in the model.

Therefore, e-Procurement continues to change and embarrass new technologies and shift from the traditional procurement methods; there is a great need to empower all staff that are in the acquisition practices and make use of new innovations in the Procurement system. This is critical for the success initiation of e-Procurement practices in the organization (World Bank, 2003).

# CHAPTER FIVE: SUMMARY, CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

## 5.1 Introduction

The section is very well explained in brief, limitations of the study and recommendations. The suggestions for further research are well defined in this chapter.

## 5.2 Summary of Findings

Results show out that most of the State Corporation had operated for the extended period hence they understand the effect of the electronic procurement. The study found out that e-tendering reduces cost, lead time, improve quality and flexibility. Also, it encourages State Corporation to work together with suppliers for success in the tendering process.

The e-reverse auction was found to assist State Corporation in achieving its strategic sourcing. Also, State Corporation had established online bidding platform where suppliers can compare their prices with others, and electronic based platform for buyers and suppliers exchange to access information.

The study revealed that e-sourcing contributed to a reduction of cost and improvement of efficiency in the procurement process. However, e-procurement has ensured that all suppliers complies with laws relating child labor laws and make sure that providers are operating in a very safe environment. The study revealed that State Corporation is faced with challenges like insufficient budget allocation for ICT, lack of enough ICT equipment and lack of employees IT knowledge.

## 5.3 Conclusion

Active e-procurement practices in the organization like State Corporation lead to improvement of quality and service delivery. From the findings, it was established that e-tendering reduces cost, lead time, improve quality and flexibility. Also, E-reverse auction also assists in achieving its strategic sourcing.

The another benefit of e-procurement is ensuring that each and every supplier is complying with the child labor laws and the location of distributors is practiced in a very safe environment. However, the State Corporation offered online bidding platform for suppliers to compare their prices with others and electronic platform for buyers and suppliers to access information. In spite all the benefit of e-procurement, it has also lead to challenges in State Corporation like insufficient budget allocation for ICT, lack of enough ICT equipment and lack of employees IT knowledge.

## 5.4 Limitations of the Study

The major limitation research was that questionnaire as the method of data collection is time-consuming. The instrument of data collection may experience the problem of social desirability. Some respondents may exaggerate the information or even provide responses that are deemed to be desirable by other parties. The outcome and the impact drawn from this research should be analyzed in light of the research methodology employed. Some of the inconsistencies that may be observed could have been as a result of the nature of the sample used. The sample emanated from a single industry. Therefore, the generalization of the results is very limited.

The respondents may have been hesitant to give some information to the researcher, which they regard as confidential in nature. To overcome this limitation, the researcher will make sure that he or she will assure the respondents that the information will only and only be used for the study. The respondents will not be

asked to write their names on the questionnaire and the employee demographics page will be detached immediately after data entry to ensure confidentiality.

## 5.5 Recommendations for Policy and Practice

The study established that State Corporation should adopt e-procurement for improvement of performance and it is recommended that other organization / corporation should consider taking it to improve their performance. The State Corporation had established e-procurement practices like the e-tendering and e-reverse auction. It is therefore recommended that all the organizations that need to develop-procurement practices with the aim achieving the primary goals. The study further suggests that the management of State Corporation should provide sufficient budget allocation for ICT equipment and train employees on IT knowledge for easier running of e- procurement.

## 5.6 Suggestion for Further Research

This research was conducted to determine effects of the electronic purchase in the sustainability of state corporations in Kenya. It has been recommended that the following research can examine the impact of the electronic procurement on the sustainability of State Corporation in Kenya.

The research should be undertaken to establish the primary reasons that resulted in minimal consumption of electronic procurement among the Kenyan corporations even after installing fully equipped systems

There is a great need to check and conduct a comparative research that aims at establishing the impacts of the electronic procurement on the performance of the companies that are both public and private sector. This will eventually aid in developing comparisons that can serve as benchmarks.

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# APPENDIX I: RESEARCH QUESTIONNAIRE

Please give answers in the spaces provided and tick (√ ) in the box that matches your response to the questions where applicable.

**Section A: Demographic Information**

1. The length of continuous service with the state corporation?

Less than five years [ ]

5-10 years [ ]

Over 10 years [ ]

2. What is your highest level of education qualification?

Post graduate level [ ]

University [ ]

Tertiary College [ ]

Secondary [ ]

Other Specify…….

3. How many employees does your corporation have?

Less than 200 [ ]

200 – 399 [ ]

Above 400 [ ]

Other Specify……

4. Nature of Corporation?

Financials [ ]

Commercial and Manufacturing [ ]

Public Universities [ ]

Training and research [ ]

Service corporations [ ]

Regional development [ ]

Tertiary education and training [ ]

Regulatory [ ]

Other Specify……...

**Section B: E-procurement Parameters**

**7.** Please indicate the extent to which your organization has adopted the following E-Procurement practices been adopted by your organization? Use the scale given in the table. Where **1 –No extent; 2 –Little extent; 3 - Moderate extent; 4 – Large extent; 5–Very large extent**

| E-Procurement Practices | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **E- Tendering** | | | | |
| The state corporation advertises, receive bids and offers from suppliers using internet based program | | | | |
| The State Corporation use an electronics based platform for screening and selection of suppliers | | | | |
| The commercial state corporation uses e-tendering to reduce cost, lead time, improve quality and flexibility | | | | |
| The Commercial State Corporation work together with suppliers to ensure success of then tendering process | | | | |
| **E-Reverse** | | | | |
| The state corporation uses online data to price its goods improving procurement performance | | | | |
| The State Corporation use an online system where supplier respond once when bidding | | | | |
| The State Corporation use e-reverse auction to achieve its strategic sourcing | | | | |
| The State Corporation has an online bidding platform where suppliers can compare their prices with others | | | | |
| The State Corporation has online platform for a pool of qualified provider for real-time requests which improve operational performance | | | | |
| **E-Administration** | | | | |
| The State Corporation has electronic based platform where buyers and suppliers exchange and access information | | | | |
| The State Corporation allows for electronic meeting with their suppliers and other departmental staff using video conferencing | | | | |
| The state corporation uses intranet and extranet to collect data on the suppliers | | | | |
| The State Corporation allows buyers and suppliers to interact at their workstation via centralized portal | | | | |
| **E-Sourcing** | | | | |
| The corporations identify new suppliers using internet based system. | | | | |
| The state company uses e-sourcing to reduce cost and improve efficiency in procurement process | | | | |
| The Corporation and their suppliers use internet based application in the whole procurement process | | | | |
| The State Corporation has the web based on evaluation of vendors. | | | | |
| The State Corporation has online platform where buyer and suppliers work together | | | | |

Others specify and write accordingly……...

……

…….

**Section C: Sustainable Procurement**

7. Please indicate the extent to which the organization has achieved sustainable supply for each of the following sustainable procurement parameters? Use the scale Where

**1 –No extent; 2 –Little extent; 3 - Moderate extent; 4 –Large extent; 5 –Very large extent**

| Sustainable Procurement Parameters | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| use a life-cycle analysis to evaluate the environmental friendliness of products and packaging | | | | | |
| Facilitated the organization to engage with minority and women-owned business enterprise (MWBE) supplier purchase program | | | | | |
| The state corporation has been able to ensure the safety of incoming movement of product to our facilities | | | | | |
| There has been increased volunteers from the organization for local charities | | | | | |
| The corporation has been able to commit to waste reduction goals | | | | | |
| There has been increased purchases from small suppliers | | | | | |
| The organization has been able to arrange for visits to suppliers' plants to ensure that they are not using sweatshop labor | | | | | |
| It ensures that providers' location are operated in a safe environment | | | | | |
| e-procurement has assured that suppliers comply with child labor laws | | | | | |

**Section B: Challenges for adopting E-procurement**

6. Please indicate the degree to which you agree with each of the following statements challenges for taking E-procurement in your Organization? Use the scale Where **1 – Strongly Disagree; 2 –Disagree; 3 - Neutral; 4 –Agree; 5 –Strongly Agree**

| | **Statement** | | | | | |
|---|---|---|---|---|---|---|
| 1 | Top management does not understand the fundamental spirits and principles of e-procurement | | | | | |
| 2 | The departmental heads do not provide adequate support for to the procurement accept responsibility for quality of goods | | | | | |
| 3 | The management style does not promote change implementation | | | | | |
| 4 | Managers do not reward employee who does well in e-procurement | | | | | |
| 5 | Managerial policies do not favor implementation of e-procurement | | | | | |
| 6 | Employees are not adequately trained on e-procurement skills | | | | | |
| 7 | There isn't sufficient budget allocation for ICT and e-procurement by the state corporation | | | | | |
| 8 | There are not enough ICT equipment in the state corporation | | | | | |
| 9 | We do not have enough software and hardware | | | | | |
| 10 | There isn't sufficient ICT infrastructure | | | | | |
| 11 | There isn't reliable structure established by the government bodies | | | | | |
| 12 | There isn't adequate consultation with suppliers on the introduction and operation of e-procurement in the state corporation. | | | | | |
| 13 | The level of e-readiness of vendors and appropriate communication with suppliers has not been established in the Corporation | | | | | |
| 14 | The corporation does not involve suppliers at the earliest stages of the introduction of e-procurement | | | | | |
| 15 | Their level of trust between the business and its suppliers has not been developed | | | | | |
| 16 | The Corporation does not sponsor employees on ICT training | | | | | |
| 17 | The isn't adequate supervisors guide on e-procurement challenges in the State Corporation | | | | | |
| 18 | The procurement employees do not have basic IT knowledge | | | | | |
| 19 | All the managers are not well versed with e-procurement practices | | | | | |
| 20 | I consider e-procurement as a threat to my jobs | | | | | |
| 21 | Employee knowledge in e- procurement is perceived to be adequate | | | | | |

**THANK YOU SO MUCH FOR YOU TIME**