

**ELECTRONIC SOURCING AND PROCUREMENT COST OF
COMMERCIAL STATE CORPORATIONS IN KENYA**

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DECLARATION

This project is my original work and has not been presented for a degree in any other University

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This project has been submitted for examination with my approval as University Supervisor

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Finally to the various Commercial State Corporations, much gratitude for positive responses and assistance.

DEDICATION

This project is dedicated to my family for their invaluable support throughout my study.

ABBREVIATIONS AND ACRONYMS

CSCs : Commercial States Corporations

GDP : Gross Domestic Product

IFMIS: Integrated Financial Management System

PPDA: Public Procurement and Disposal Act

PPRA: Public Procurement and Oversight Authority

SPSS : Statistical Package for Social Sciences

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ABSTRACT

The study looked at electronic sourcing and procurement cost of commercial state corporations in Kenya. The specific objectives that guided the study were to determine electronic sourcing practices commonly used by Commercial State Corporations in Kenya and determine relationship between electronic sourcing and procurement cost of Commercial State Corporations in Kenya. The study adopted a descriptive research design and 33 commercial state corporations were targeted. The respondents included supply chain/procurement officers and finance managers of these 33 organizations. The study used a census and information was gathered with aid of questionnaires. The analysis was done descriptively and inferentially. It was established that e-supplier identification, e-supplier selection, e-prequalification and e-supplier evaluation as key e-sourcing practice are the key e-sourcing practices among most commercial state corporations and all of them have a positive and significant effect on procurement costs. The study concludes that e-sourcing has positive and significant effect on procurement costs. The study recommends that the Public Procurement and Oversight Authority (PPOA) should effectively play its role as far e-sourcing practices among commercial state corporations in Kenya are concerned.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Electronic sourcing has gained relevance in many firms across the globe as they seek to minimize on procurement cost. These forces coupled by increased competition have forced most organizations to adopt e-sourcing to ease the operations and increase efficiency (Xu, 2015). Through e-sourcing, firms have significantly lowered the procurement cost of acquiring goods and services for their operations. Today, the need for firms to offer goods that are of quality and cost effective products is critical (Ali, Namusonge & Sakwa, 2016).

E-sourcing and procurement cost can be supported by technology acceptance model, resource based view theory as well as the transaction cost theory. The technology acceptance model theory explains the factors that inform people to accept new technologies in an organization. New technology in this context is the issue of electronic sourcing. The various perceptions of people in organizations on e-sourcing (in terms of ease of use and its usefulness) determine how it shall be adopted and implemented in an organization (Davis, 1986). According to the resource based view theory, organizations leverage on resources to gain competitive advantage. One such resource becomes the e-sourcing platform which helps the firms to gain competitive advantage by lowering their procurement costs (Barney, 1991). The main theory of the study is the transaction cost theory which argues that firms strive to lower the costs of their transactions. Thus, the adoption of e-sourcing is seen as a step towards reduction in these transaction and procurement costs in an organization (Coase, 1937).

1.1.1 Electronic Sourcing

Electronic sourcing is the use of internet facilities to identify new suppliers in an organization. It is the process where the procurement activities like acquisition of of an organization are shifted online with the aim of attracting more suppliers than when it would be conducted in other alternative means. E-sourcing offer support to the specification phase of the contract since it can be employed during pre-qualification as well as identification of final suppliers for selection in an organization. Almajali, Mansour, Masa'deh and Maqableh(2016) offered another definition of e-sourcing as a process of digitalizing the whole process involved in sourcing of suppliers in an organization through consolidation of proposals, quotations and electronic tenders as submitted by various suppliers. Traditionally, Alomar and De-Visscher (2017) indicate that the sourcing process consumed a lot of time; it was so tedious and was not able to handle huge volume of information. This has however changed with the rise of e-sourcing among organizations presently.

In a study by the University of the West of England (2012), the following measures were used as proxies of adoption of e-sourcing among private and public sector institutions; supplier identification, online negotiations, contract monitoring, internal coordination, relationship management, communication with potential suppliers, competence analysis, specification and speed analysis. Mutua and Juma (2018) operationalized sourcing into sourcing decisions, supplier selection and buyer-supplier partnerships. Alomar and de-Visscher (2017) identified four key processes that form the basis of sourcing in any organization; specification development, market assessment, negotiation and contract discussion. This study will measure e-sourcing through supplier identification, pre-qualification, evaluation and final selection.

Several benefits that accrue from e-sourcing include streamlining the process of sourcing, increased competitiveness and creation of repository for sourcing information (Barngetuny & Kimutai, 2015). Firms can invest in internet platforms to transact procurement activities online so as to reach more suppliers as it would have been using manual channels (Zahra, Rohman, Chariri & Karim, 2017). Electronic sourcing increases the competitiveness of the bidding process of the suppliers. Through electronic sourcing, there are chances of online negotiation and auctions between suppliers and buyers. Through e-sourcing, an organization is able to identify viable suppliers, establish their product offerings, their charges in terms of prices as well as the terms of sale (Bromberg & Manoharan, 2015). Organizations are able to identify potential and qualified suppliers hence expediting the whole procurement process as timely as possible. Organizations can use e-sourcing as a tool and channel for communication (Kennedy, 2017). It also helps in establishing a central repository of information. The essence of online pre-qualification questionnaires helps in speeding up the procurement operations and processes in an organization. Through an online portal, suppliers find it easy to register as well as actively participate in events and sent some alerts (Harelimana, 2018).

1.1.2 Procurement Cost

Procurement cost is a general term that covers both financial and non-financial metrics. Procurement cost is how well an organization minimizes the expenses during the procurement activities. Procurement cost compares the predetermined indicators and standards against the actual ones. Any procuring entity incurs several costs as it seeks to acquire goods, services and contracts. Efforts should therefore be put in place to ensure these costs are kept as minimum as possible (Brandon-Jones&Kauppi, 2018).

There are several measures of procurement costs in supply chain and procurement literature. Gordon (2008) identifies regulatory compliance, effectiveness and efficiency as some of the indicators for measuring procurement costs. The other measures of procurement cost include reduction in cycle time, reduced customer complaints, reduced number of defects, a drop in production costs and a general increase in the level of product completeness. Procurement cost can also be measured in terms of reduction in cost of raw materials and services (Bromberg & Manoharan, 2015).

1.1.3 Commercial State Corporations in Kenya

Commercial State Corporations (CSCs) emerged with the colonial government and they were meant to offer services that would otherwise not be provided by the private sector. In Kenya, CSCs cover key areas of the economy including manufacturing, communication, transportation, financial as well as agriculture. Commercial state corporations can be fully owned or partially owned by government. A study conducted by Kamotho (2014) established that most state corporations in Kenya have not fully implemented electronic sourcing systems and hence they have not realized the full potential. This has resulted into a number of challenges including mega scandals, corruption and misuse of the tax payer's money. Some of these major scandals include Kenya Pipeline Company where over Kshs. 2 billion got lost, the National Cereals and Produce Board lost over Kshs. 19 billion on account of irregular purchase of maize and Kenya Power and Lighting Company where a total of Kshs. 200 million were lost (DCI, 2018; PPOA, 2018 & EACC, 2019).

Essentially, state corporations are formed by the government so as to realize both commercial as well as social objectives and goals (Mwangi, 2013). In Kenya, CSCs emerged with the colonial Government and were to provide services which the private sector couldn't provide. Currently, there are 33 Commercial State Corporations in Kenya covering diverse areas of the economy including transport, food processing and education. The main characteristic of these Commercial State Corporations is that they are all owned by the state. Another important characteristic of these Commercial State Corporations is that the entities and their employees are subject to specific legal framework that binds public entities and public servants. In Kenya, this legal framework cumulatively encompasses the legislative, regulatory and institutional frameworks for the control and governance of these enterprises (Government Owned Entities Bill, 2014).

One such legal framework with an influence on procurement activities of the Commercial State Corporations is the Public Procurement and Oversight Authority (PPOA), which was came into effect in 2005 after the enactment of the Public Procurement and Disposal Act. Since 2014 when the Integrated Financial Management Information System (IFMIS) emerged, the government has made efforts to implement electronic procurement among the Commercial State Corporations (The National Treasury, 2016). The implementation of e-procurement is associated with among other things, electronic tendering sourcing. The need for e-procurement in Kenya was meant to improve the relationship between suppliers and the government, allowing ease of accessibility to documents, information sharing and flow while ensuring the value for money in any procurement activities in the public sector entities. This was also meant to reduce corruption and misuse of public tax payers' money. It was meant to bring about a reduction in long lines and queues (PPOA, 2018).

Most Commercial State Corporations in Kenya have been affected by issues of corruption especially in matters of procurement (Ali, Namusonge & Sakwa, 2016). Some of these State Departments/entities that have witnessed massive loss of government money include the Kenya National Youth Service (NYS) that lost over 8 billion in dubious supply payment, the National Hospital Insurance Fund where about Kshs. 1 billion was reported to have been lost (Chegugu & Yusuf, 2017). These are only selected scandals as it regards procurement in State departments among go unreported on a regular basis. It is against these challenges that the current study seeks to determine the influence of e-sourcing on procurement cost e among Commercial State Corporations.

1.2 Research Problem

The rapid advancement of technology has brought about a paradigm shift in the way procurement activities are carried out. The adoption of technology in procurement function has resulted into electronic procurement where suppliers can now be sourced over the internet and online applications hence electronic sourcing (Chegugu & Yusuf, 2017). Unlike traditionally when sourcing could consume a lot of time, the emergence of e-sourcing today has been associated with procurement cost reduction in organizations. Electronic sourcing has the capability of handling large volume of information of suppliers than when the sourcing process would have been conducted traditionally (Cedillo, García, Cárdenas & Bermeo, 2018).

In Kenya, Commercial State Corporations are established by the government to attain specific commercial goals and objectives. It is estimated that procurement among these CSCs account for above 10% of the Gross Domestic Product (GDP) (Rotich, 2015) and thus accounting the largest market for contractors and suppliers. A report by PPOA (2017) indicates that 30% of the

procurement inefficiencies among Commercial State Corporations in Kenya are attributed to cost related issues, corruption and misuse of resources by procurement officials. Kamotho (2014) opines that one way through firms can reduce their procurement costs are through adoption of technology to accurately source and select suppliers. E-sourcing is expected to yield positive procurement cost. However, this is inconsistent with the current situation in Kenya where even despite the efforts by the government for all public entities to adopt electronic procurement, there are persistent complaints among various stakeholders that Commercial State Corporations have been associated with long procurement lead time, inability to comply with PPOA regulatory framework, inflated costs in acquisition of products (Miheho, 2013; Makau, 2014).

Studies on e-sourcing have failed to explicitly link it with procurement cost. For instance, in United States of America, Kim, Suresh and Kocabasoglu-Hillmer (2015) studied the influence of strategic sourcing and procurement cost and established positive relationship. Wang'ombe (2017) studied the influence of sourcing on profitability of flower growing companies in Kenya. This study was carried out in the horticultural sector and not among Commercial State Corporations. Ochari and Kwasira (2016) looked at e-sourcing and its influence on performance of the procurement function using a case of Nakuru County. Rotich, Mum and Micheni (2016) looked at e-sourcing and its influence on performance with focus on Kericho County. Kimutai and Ismael (2016) studied the role of strategic electronic sourcing on supply chain performance with reference to Kenyan state corporations.

Thus, from the mentioned studies above, it is clear that some of them were done in other developed countries. Other studies were carried out in different sectors including horticulture and not the Commercial State Corporations. Other studies linked e-sourcing and profitability and supply chain performance and not specifically procurement cost. These bring about contextual and conceptual

gaps that the current study seeks to fill. To fill these gaps, the current study sought to answer the following research questions; what are the electronic sourcing practices among Commercial State Corporations in Kenya? What is the relationship between electronic sourcing and procurement cost of Commercial State Corporations in Kenya?

1.3 Research Objectives

The study was guided by the following specific objectives;

- i. To establish electronic sourcing practices commonly used by Commercial State Corporations in Kenya.
- ii. To determine relationship between electronic sourcing and procurement cost of Commercial State Corporations in Kenya.

1.4 Value of the Study

The study will be important to the management of State Departments, the Public Procurement and Oversight Authority (PPOA), Procurement Practitioners and future scholars and academicians. The study will shade more light on how best the Management team of all the State Departments in Kenya can strengthen and improve on their e-procurement systems in place. This will be an important step in improving procurement costs of their respective States Departments. PPOA is a body charged with the responsibility of ensuring that public sector procurement is done in accordance with the law. The findings of the study will help PPOA in formulation of policies and regulation as it concerns e-procurement in the public sector in Kenya.

The findings of the study will be important to procurement practitioners both in public and private sector. Through the study, the procurement practitioners will be able to understand the role played

by e-procurement on performance of their organizations. The study will add literature to the existing one on e-procurement and its influence on organizational performance. Future scholars and academicians carrying out similar studies will have ample time to borrow literature from this study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews theories that form basis for the study as informed by the objectives. There is review of literature on e-sourcing, procurement cost, the link between them as well as the challenges in implementation of e-sourcing. The conceptual framework is also presented showing the variables and the relationship between them.

2.2 Theoretical Review

A theoretical review looks at theories that are relevant which informs the study. This study will be guided by the technology acceptance model; resource based view theory as well as the transaction cost theory. The main theory will be the transaction cost theory.

2.2.1 Technology Acceptance Theory

This theory was developed by Devis (1986) and it is used to explain factors that inform an organization to accept and adopt a given form of technology in the operation process. According to this theory, when a given form of new technology is presented to people, there are a number of factors that influence their decision to use or not to apply that technology in place (Davis, 1989). The two important factors that influence the ability of people to decide on the use of a given form of technology in an organization are; perceived usefulness (PU) and Perceived ease of Use (PEU) (Brandon-Jones & Kauppi, 2018).

When people believe that the use of a given form of technology would result into greater efficiency, effectiveness and increased production, they will readily accept it hence perceived

usefulness (Williams, Rana&Dwivedi, 2015). At the same time, when people believe that a given form of technology is easy to learn, use, control as well as remember; it becomes easier to adopt the technology has perceived ease of use. Not everyone in an organization will readily accept change (adoption of technology) and this may have an influence on the overall performance of the adopted technology in an organization (Alomar & De-Visscher, 2017).

Electronic procurement is one form of technology in an organization and its adoption is pegged on the two factors; PE and PEU (Lim, 2018). The success of e-procurement in an organization is pegged on the acceptance of staff especially those in the procurement department. Colander (2003) did a study to bring out the critical success factors in successful implementation of e-procurement in the public sector context (Ibem, Aduwo, Tunji-Olayeni, Ayo-Vaughan &Uwakonye, 2016).

The study established that success in implementation of e-procurement is informed by the TAM where perceived ease of use and perceived usefulness are the underlying concepts that drive people to accept e-procurement in their organizations.

2.2.2 Resource Based View

The Resource Based View (RBV) theory was coined by Barney (1991) and it focuses on the firm's competitive advantages generated by its unique set of resources. Resources of organizations are divided into tangible and intangible. Tangible assets are made up of bundles of resources in an organization that one can feel and touch (Govan&Damnjanovic, 2016). Intangible resources can neither be touched nor felt, they are created by managers and staffs of an organization. They include things like reputation, brand names, knowledge based of employees gained through experience, intellectual property of the company like trademarks, copyrights and patents (Montgomery, 2011).

The most important characteristic of the RBV is the focus in the internal forces of firm which gives the firm a competitive advantage over its competitors (Hoskisson, Gambeta, Green & Li, 2018). The resources of the firm can be classified according to the following categories: capabilities, location resources, tangible and intangible resources, strategic resources, assets, human resources, technological resources, social resources and organizational resources (Hitt, Xu& Carnes, 2016).

This theory noted that firms compete with each other on the basis of their uniqueness in terms of corporate resources available to them (Alonso &Bressan, 2016). The corporate resources should be rare to be found and difficult to imitate or substitute (Ruivo, Oliveira &Neto, 2015). This is a clear way of gaining competitive advantage (Holland, 2004). One of the assumptions of resource-based view theory is that resources are distributed in a heterogeneous manner. The theory also assumes that resources are not perfectly mobile (Lioukas, Reuer&Zollo, 2016).

The theory is relevant to the study because implementation of e-procurement requires resources that can be financial or non financial. At the same time, the e-procurement system in itself is a strategic resource that an organization can leverage on to gain competitive advantage and thus improve on performance.

2.2.3 Transaction Cost Theory

The Transaction Cost Theory (TCT) was advanced by Coase (1937) and it relevantly explains why certain activities are conducted by the firm as others are done at the market. The theory explains why firms are in existance and why they expand by sourcing activities from their external environment (De-Schepper, Haezendonck& Dooms, 2015). The theory is premised on the fact that firms strive as much as they can to reduce costs incurred in exchange of resources within the surrounding and at the same time minimizing the bureaucratic expenses and costs within the firms

(Schermann, Dongus, Yetton&Krcmar, 2016). Thus, firms are always striving for a balance between costs incurred on exchange resources with the surrounding and the bureaucratic costs involved when the activity is carried out in-house (Guo, Li, Li & Zhang, 2016).

The transaction costs simply refer to the costs incurred while offering goods and services through market mechanisms as compared to when they are provided within the entity itself (Ping-Ho, Levitt, Tsui& Hsu, 2015). More specifically, transaction costs are those covering decision as well as bargaining activities, costs involved for search of information and the enforcement and compliance costs (Thomassen, Vassbø, Solheim-Kile&Lohne, 2016). The basis of these transaction costs include the complexities and uncertainties that key attributes of any economic system. According to Toyama (2007), most firms have significantly lowered their transaction costs by deployment and use of technological systems. This is because through information technology, information is readily available to people in the business to make timely and informed decisions. Through information and communication systems, the rate of information flow is increased, there is increased linkage and flow of information between the buyers and sellers and improving efficiency of the contracting process in an organization (Meinlschmidt, Schleper&Foerstl, 2018).

According to Mahdillou and Akbary (2014), the implementation and use of electronic tendering as a form of e-procurement is linked with transactional benefits. This is because it helps in saving time and greater efficiency, increased accuracy of the data and easy of the flow of information. The theory is therefore relevant to the study because it explains the role played by e-procurement activities in reduction of the transaction costs and thus improving on overall performance of the firm.

2.3 Electronic Sourcing

Electronic sourcing has been recognized as the use of internet and online applications gather information on new suppliers in an organization. It supports the entire process of identification of suppliers, pre-qualification of suppliers, evaluation and the final decision to select the qualified supplier. PPOA lays down rules and regulations on how all these activities should be carried (Barngetuny & Kimutai, 2015).

Electronic supplier identification is the use of internet to identify potential new suppliers in an organization. This is done having in place specific criteria for identifying the suppliers. Some of the common criteria used to identify suppliers electronically include quality issues and their location. Ezeani and Asogwa (2017) indicate that there may exist variations in the criteria used for identification of suppliers based on the specific commodities. It is important to use the power of internet to come up with a list of potential supplier for new and emerging commodities, products and services. Flynn and Davis (2017) indicate that firms should continuously identify and maintain a full list of suppliers to cushion the exist of normal as well as unforeseen preferred suppliers. The growth of technology has made it possible for organizations today to identify new suppliers and this frees up time for the firm to focus on other core activities.

Electronic supplier prequalification is the process of selecting the list of preferred suppliers in an organization with the help of internet. Preferred suppliers are usually the providers of complementary products that serve a strategic purpose in an organization. Such preferred suppliers have been placed on approval list by the purchasing or buying organizations. According to Krop and Iravo (2016), an organization should first put in place a team of members selected from different units to establish the key criteria to consider during the pre-qualification of suppliers. The

essence of supplier prequalification process is to come up with a data base of adequate bidders besides ensuring that every bidder has the required ability (resources, capitalization and expertise) (Haim, 2015). The prequalification process plays an important role as far as procurement operations of the firm are concerned. This is because it helps in omitting bidders who have not qualified for the contract while quickening the process of evaluating suppliers. This has an implication that firms to be allowed in the bidding process should first be prequalified. Thus, prequalification of suppliers helps in establishing firms with specific abilities for bidding in any specified contracts (Fozia, Namusonge & Shaelle, 2016).

Once an organization has electronically identified suppliers and established a list of prequalified firms, evaluation is conducted to make the final decision as it regards the award of the contract. Through an e-sourcing portal, firms are able to automate the evaluation of responses (Groznik & Manfreda, 2015). An e-sourcing portal has an ability to evaluate the technical, pricing as well as commercial aspect. The criteria for evaluating suppliers in the public sector context in Kenya are well established under the Public Procurement and Disposable Act 2005. The key requirements by the PPDA 2005 for evaluation include the fact that suppliers as well as other tenders should have necessary professional as well as technical qualifications and competences, they need to have adequate financial resources, physical facilities including equipment and human capital for carrying out the contract awarded (PPOA, 2017). According to Pamela (2013), the financial capacity expertise is one fact which influences how the supplier will eventually perform during the contract awarded.

Selection of the right suppliers is key in helping the firm to get the desired level of quality, right price and time aspects. Aggrey (2011) point out that supplier selection can act as a channel providing information for increased efficiency and competitiveness in an organization. Supplier

selection is the most critical step in an organization as firms remain more reliant to suppliers. The capabilities of suppliers are considered as a resource for development of the buyers and purchasers own unique capabilities (Gupta & Narain, 2015). Electronic supplier selection is a critical step in the procurement activities because it has overall implications on performance of the firm specifically on end attributes of the products including quality, design, cost as well as manufacturability. Kannan and Tan (2002) is of the view that the process of selecting suppliers is informed by tangible as well as intangible criteria. Beil (2009) consider supplier evaluation as the process where the firm identified, evaluates and award contract to some specified firms or suppliers.

2.4 Procurement Cost

Procurement cost performance defines how well an organization attains its financial objectives as well as the established market criteria. More generally, procurement cost performance can be measured using financial as well as non-financial metrics and indicators (Ibem, Aduwo, Tunji-Olayeni, Ayo-Vaughan & Uwakonye, 2016). The financial measures of procurement cost performance include profitability and rates of return on investments and lead times. The non-financial measure of procurement cost performance includes the quality issues, flexibility, customer satisfaction and efficiency. MacDuffie and Helper (2007) consider procurement cost performance as how effective and efficient an organization procures or acquire products.

Lee and Ansari (2005) note that all procurement activities and operations are in a way connected with the overall economic performance of the firm as reflected in cost reduction. Procurement cost performance is an outcome of efficient as well as effective purchasing process in an organization. Performance is an important dimension because it determines how well an

organization is progressing based on the predetermined goals and objectives. Measuring performance of the procurement function in an organization can help in reduction in costs, improvement in profitability and improving the quality of products in place (Harelimana, 2018).

2.5 Electronic Sourcing and Procurement Cost

Kim, Suresh and Kocabasoglu-Hillmer (2015) studied the influence of strategic sourcing and procurement performance. The moderating study variable was environmental conditions and business features. This was a survey that covered a total of 137 managers in the manufacturing sector in United States. The analysis was conducted using structured equation modeling. The findings indicated that sourcing has significant effect on procurement performance of the firm.

Wang'ombe (2017) studied the influence of sourcing on profitability of flower growing companies in Kenya. The study used a case of Credible Blooms Limited. The specific study variables included supplier development, contract management, supplier relationship as well as early supplier involvement. A total of 35 employees of the firm were targeted. The analysis of the findings indicated that sourcing has positive and significant influence on profitability.

Ochari and Kwasira (2016) looked at e-sourcing and its influence on performance of the procurement function. The study used a case of Nakuru County. The study adopted a descriptive research design and a total of 168 respondents were targeted. From these respondents, 118 were sampled using random sampling techniques and data was gathered with the help of questionnaires. The link between e-sourcing and performance was determined using chi-square. The study established that e-sourcing has been adopted in the procurement function of Nakuru County, it has not been fully implemented. Hence, most counties have not experienced the full potential of the e-sourcing.

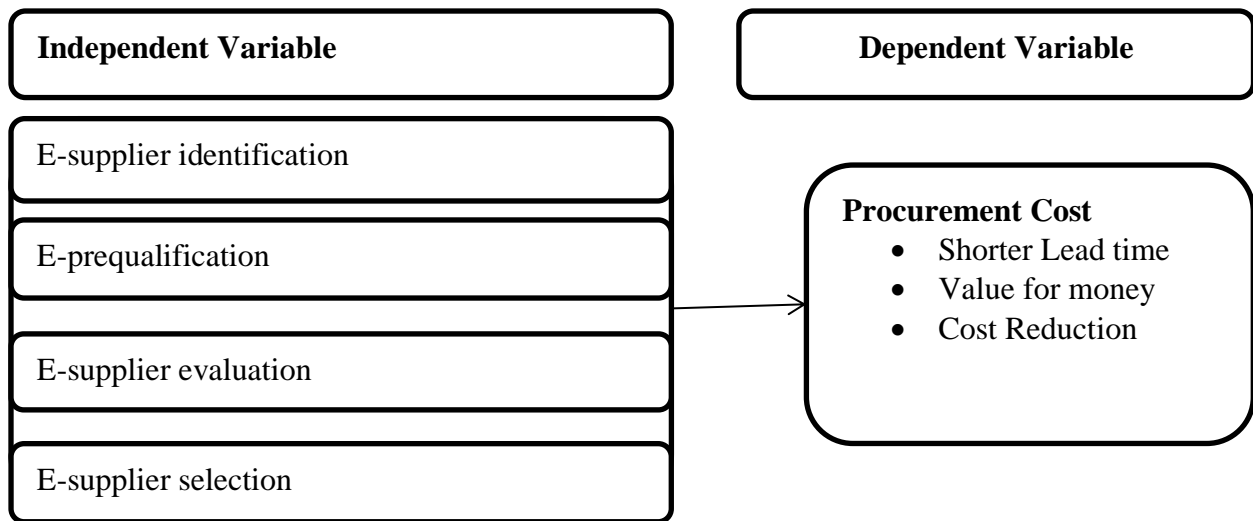
Rotich, Mum and Micheni (2016) looked at e-sourcing and its influence on performance with focus on Kericho County. The respondents of the study comprised of employees in procurement, finance, IT and accounts of the county. The study involved testing of hypotheses. The findings indicated that e-sourcing has positive and significant effect on performance.

Munanu (2017) studied the influence of strategic sourcing on organizational performance with key focus on Administration Police Training College. A total of 33 respondents formed the sample of the study. The type of design employed was case study with quantitative methods. The analysis was quantitatively conducted using frequencies and percentages. It was shown that strategic sourcing and costs efficiency are positively related. Outsourcing also results to more productivity and thus overall performance of the firm.

2.7 Proposed Conceptual Framework

Figure 2.1: Shows the proposed conceptual framework for the study.

Figure 2.1: Proposed Conceptual Framework



Source: Author (2019).

From Figure 2.1, the dependent variable is procurement cost. On the other hand, the independent variable is e-sourcing. E-sourcing has been operationalized into e-supplier identification, e-prequalification, e-supplier evaluation and e-supplier selection.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter outlines the methods that shall be used in answering the formulated research questions. It discusses the research design, population, data collection and analysis of the findings.

3.2 Research Design

The study adopted a descriptive research design to attain the stated objectives. A descriptive design was effective in answering the research questions on; what? Why? How? The design helped the study to determine the influence of e-sourcing and procurement cost.

3.3 Population

Population is the entire group of items or elements that are greater interest to the researcher. The population of the study was 33 Commercial state corporations in Kenya (Appendix I). Since the population was small, census was used.

3.4 Data Collection

The study collected primary data with the help of a structured questionnaire. The questionnaire was divided into sections. Section A which had the general information about the respondents, section B contained information on e-sourcing, and section C had information on procurement cost. The respondents comprised of supply chain/procurement officers and finance managers from the Commercial state corporations. The study adopted a drop and pick latter method in distribution of questionnaires to these respondents.

3.5 Data Analysis

The collected data was entered into the Statistical Package for Social Sciences in readiness for analysis. The findings were analyzed using means, standard deviations and regression analysis.

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \mu_{it}$$

Where Y is = Procurement cost

X₁ = E-supplier identification

X₂ = E-prequalification

X₃= E-supplier evaluation

X₄= E-supplier selection

β₀= Constant and μ_{it} is the error term

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter details the analysis of the data that was gathered from the field with use of questionnaires. The study gathered data from primary sources and the analysis was conducted systematically with aid of SPSS tool.

4.1.1 Response Rate

The study distributed 66 questionnaires to supply chain/procurement officers and finance managers from 33 Commercial state corporations in Kenya. The study received 51 dully filed and complete questionnaires hence representing a response rate of 77.3%. The response rate was in line with Mugenda and Mugenda (2003) who established that response rate of over 70% is sufficient for analysis.

4.2 General Information

The study sought to gather the general information of respondents and the firms as shown in subsequent sections.

4.2.1 General Information on Respondents

The study sought to determine the distribution of male and female respondents as shown in Table 4.1.

Table 4.1: Gender Distribution of Respondents

	Frequency	Percentage
Male	33	64.7
Female	18	35.3
Total	51	100.0

Table 4.1 shows that majority of the respondents 64.7% were male while 35.2% were female. Thus, representative findings were sought for the study from the respondents. Table 4.2 gives the findings on the level of education of the respondents.

Table 4.2: Levels of education of Respondents

	Frequency	Percentage
Certificate	2	3.9
Diploma	5	9.8
Degree	36	70.6
Masters	8	15.7
Total	51	100.0

From Table 4.2, majority of the respondents 70.6% had degrees. This can be interpreted that the respondents of the study were learnt and thus knowledgeable on e-sourcing as sought by the study.

4.2.2 Organizational General Information

The findings on length of organizational existence are indicated in Table 4.3.

Table 4.3: Length of Organizational Existence

	Frequency	Percentage
1- 5 years	4	7.8
5-10 years	18	35.3
10-15 years	18	35.3
above 15 years	11	21.6
Total	51	100.0

The findings in Table 4.3 indicates that majority of the studied organizations (92.2%) had been in operations for a period of over 5 years. This means that the studied firms had operated for a long period of time and thus suitable to be used as point of reference. Table 4.4 gives the findings on number of employees among the studied firms

Table 4.4: Number of Employees in the Firm

	Frequency	Percentage
1- 5	2	3.9
5-10	5	9.8
10-15	17	33.3
above 15	27	52.9
Total	51	100.0

From the findings in Table 4.4, majority of the studied firms (52.9%) had over 15 employees. This means that the studied organizations were large in terms of employee base. The study sought further to determine the average annual procurement budget in the studied firms annually. From the results, majority of the respondents said that their procurement budget for the year was over Kshs. 500,000.

4.3 Procurement Cost

The dependent study variable was procurement cost and the findings are indicated in Table 4.5.

Table 4.5: Procurement Cost

Statement	Mean	Std. Dev
The lead time in the firm has been shortened	3.56	.965
The firm ensures value for money in all the sourcing activities	3.52	1.120
The firm has significantly reduced the costs of ordering items	3.66	.868
Overall Score	3.58	.984

On average, most of the respondents agreed with a mean of 3.58 that their firm respective organizations were doing well as far as procurement costs was concerned. This include reduction in costs of ordering (M=3.66) as well as shortening of the lead times (M=3.56).

4.4 Electronic Sourcing Practices

The first objective of the study was to determine the electronic sourcing practices in place among the studied organizations. The results are documented in subsequent sections.

4.4.1 E-Supplier Identification

The findings on e-supplier identification are shown in Table 4.6.

Table 4.6: E-Supplier Identification

Statements	Mean	Std. Dev
The firm uses internet to identify potential new suppliers	3.60	1.078
The firm has in place a specific criteria for identifying the suppliers	3.92	.844
The firm considers the quality aspect of suppliers before identification	3.80	.980
The firm uses internet to come up with a list of potential supplier for emerging commodities	3.60	.493
The firm continuously maintains a full list of suppliers to cushion the existence of unforeseen preferred suppliers	4.09	.877
Electronic supplier identification helps the firm to frees up time for the firm to focus on other core activities	3.84	.367
Overall Score	3.81	.773

On average, majority of the respondents agreed with a mean of 3.81 that their organization practiced electronic supplier identification. The overall standard deviation on e-supplier identification was less than 1; showing that the studied firms shared similar attributed as far as e-supplier identification practice is concerned. These findings are consistent with Ezeani and Asogwa (2017) who indicate that it is important to use the power of internet to come up with a list of potential supplier for new and emerging commodities, products and services.

Through e-supplier identification, most of the organizations were able to maintain a full list of suppliers to cushion the existence of unforeseen preferred suppliers (M=4.09) and have in place a specific criteria for identifying the suppliers (M=3.92). The finding is in line with Flynn and Davis (2017) who indicate that firms should continuously identify and maintain a full list of suppliers to cushion the exist of normal as well as unforeseen preferred suppliers.

4.4.2 E-Prequalification

The results on e-prequalification are shown in Table 4.7.

Table 4.7: E-Prequalification

Statements	Mean	Std. Dev
The firm selects a list of preferred suppliers with the help of internet	3.57	.744
Preferred suppliers are usually the providers of complementary products that serve a strategic purpose in the firm	3.92	.627
The essence of supplier prequalification process is to come up with a data base of adequate bidders besides ensuring that every bidder has the required ability	3.68	1.009
Electronic prequalification helps in omitting bidders who have not qualified for the contract while quickening the process of evaluating supplier	3.67	.873
Electronic prequalification of suppliers helps in establishing suppliers with specific abilities for bidding in any specified contracts	3.77	1.057
Overall Score	3.72	.862

The overall mean from Table 4.7 is taken as 3.72; which can be interpreted to imply that majority of the respondents agreed on the various statements provided under e-prequalification. In other words, it can be inferred that the studied firms practiced e-prequalification. Fozia, Namusonge and Shaelle (2016) argue that this prequalification process plays an important role as far as procurement operations of the firm are concerned as it helps in omitting bidders who have not qualified for the contract while quickening the process of evaluating suppliers.

Through e-prequalification, the studied firms were able to establish preferred suppliers who are usually the providers of complementary products that serve a strategic purpose in the firm (3.92) while at the same time establishing suppliers with specific abilities for bidding in any specified contracts (M=3.77). The results are supported by Fozia, Namusonge and Shaelle (2016) who noted that prequalification of suppliers helps in establishing firms with specific abilities for bidding in any specified contracts.

4.4.3 E-Supplier Evaluation

The results on e-supplier evaluation are indicated in Table 4.8.

Table 4.8: E-Supplier Evaluation

Statements	Mean	Std. Dev
There is electronic evaluation of suppliers in the firm	3.72	.627
Electronic supplier selection helps the firm to make the final decision as it regards the award of the contract	3.62	.385
Through e-sourcing portal, the firms has been able to automate the evaluation of responses	3.67	.627
Electronic supplier selection considers the technical qualifications of suppliers	3.61	.753
Overall Mean Score	3.66	.598

From Table 4.8, the overall mean score was 3.66; which shows that most of the studied organizations practiced e-supplier evaluation. The value of standard deviation is very low; implying that there was similarity in e-supplier evaluation practice among the studied organizations. Groznik and Manfreda (2015) argue that through an e-sourcing portal, firms are able to automate the evaluation of responses. The criteria for evaluating suppliers in the public sector context in Kenya are well established under the Public Procurement and Disposable Act 2005.

4.4.4 E-Supplier Selection

Table 4.9 gives the findings on electronic supplier selection.

Table 4.9: E-Supplier Selection

Statements	Mean	Std. Dev
The firm selects its suppliers electronically	3.58	.497
Electronic supplier selection is a critical step in procurement activities of our firm	3.84	.880
Electronic supplier selection is key in helping the firm to get the desired level of quality	3.52	.856
Electronic supplier selection helps the firm to get the required level of right price	3.96	.958
Overall Mean Score	3.73	0.798

As indicated in Table 4.9, the overall score is 3.73; which means that most of the studied firms agreed on that they practiced e-supplier selection. Through this e-supplier selection, the study noted that the firm was able to get the required level of right price (M=3.96) and it was a critical step in procurement activities of the firms (M=3.84). The result is supported by Aggrey (2011) who point out that supplier selection is the most critical step in an organization as firms remain more reliant to suppliers.

4.5 Electronic Sourcing and Procurement Cost

The study sought to determine relationship between e-sourcing and procurement costs. The results are shown in subsequent sections.

4.5.1 Model Summary

Table 4.10 gives a breakdown of the model summary of the study

Table 4.10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.819 ^a	.670	.659	5.46336

The value adjusted R square from Table 4.10 is taken as 0.659; which implies that 65.9% variation in procurement costs is explained by electronic sourcing. Thus, apart from e-sourcing, there are also other factors with an effect on procurement costs.

4.5.2 Analysis of Variance

The study conducted an Analysis of Variance (ANOVA) at 5% and the results are indicated in Table 4.11.

Table 4.11: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	7091.858	4	1772.964	23.354	.000 ^b
Residual	3492.249	46	75.918		
Total	10584.107	50			

Table 4.11 gives the value of F calculated as 23.354; which is large enough to infer that the overall regression model of the study was significant.

4.5.3 Regression Coefficients and Significance

The findings of the regression coefficients and significance of the individual variables of the study are indicated in Table 4.12.

Table 4.12: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.652	.692		3.827	.000
X ₁	.011	.003	.008	2.906	.005
X ₂	.051	.016	.070	3.135	.003
X ₃	.190	.042	.768	4.515	.013
X ₄	.174	.029	1.499	5.894	.000

From Table 4.12, the following equation is formulated;

$$Y = -2.652 + .011X_1 + .051X_2 + .190X_3 + .174X_4$$

Where **Y** is = Procurement cost

X₁ = E-supplier identification

X₂ = E-prequalification

X₃ = E-supplier evaluation

X₄ = E-supplier selection

From Table 4.12, at 5% level of significance, the study noted that all the variables had corresponding p-values $p < 0.05$ and $t > 1.96$. This is interpreted to mean that e-sourcing has positive and significant relationship with procurement costs. This finding is empirically supported by Kamotho (2014) who indicated that e-sourcing is expected to yield positive procurement cost. Kim, Suresh and Kocabasoglu-Hillmer (2015) studied the influence of strategic sourcing and procurement cost and established positive relationship.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The analyzed findings of the study are summarized in this chapter. The conclusions as informed by the findings of the study are also provided. The recommendations are also given as informed by the findings of the study. The limitations and areas for further researcher are pointed out the chapter.

5.2 Summary of the Findings

The study was set out to determine the effect of e-sourcing on procurement costs. The two specific objectives of the study were to determine the e-sourcing practices and to establish relationship between e-sourcing and procurement costs. The theories that provided anchorage to the study included: technology acceptance model, resource based view theory as well as the transaction cost theory. The results of the analysis are summarized in subsequent sections.

The first objective of the study sought to establish electronic sourcing practices commonly used by Commercial State Corporations. From the results, the e-sourcing practices commonly adopted in commercial state corporations include e-supplier identification, e-supplier selection, e-prequalification and e-supplier evaluation. Through e-supplier identification, most of the organizations were able to maintain a full list of suppliers to cushion the existence of unforeseen preferred suppliers and have in place specific criteria for identifying the suppliers. Through e-prequalification, the studied firms were able to establish preferred suppliers who are usually the providers of complementary products that serve a strategic purpose in the firm while at the same time establishing suppliers with specific abilities for bidding in any specified contracts. Through

this e-supplier selection, the study noted that the firm was able to get the required level of right price and it was a critical step in procurement activities of the firms.

The second objective of the study sought to determine relationship between electronic sourcing and procurement cost of Commercial State Corporations. From the results, e-supplier identification, e-supplier selection, e-prequalification and e-supplier evaluation all have positive and significant effect on procurement costs. Electronic sourcing was found to have positive and significant effect on procurement cost.

5.3 Conclusion

Most Commercial State Corporations in Kenya do practice e-supplier identification, e-supplier selection, e-prequalification and e-supplier evaluation as key e-sourcing practices. E-supplier identification helps a firm to maintain a full list of suppliers to cushion the existence of unforeseen preferred suppliers and have in place specific criteria for identifying the suppliers. E-prequalification helps an organization to establish preferred suppliers who are usually the providers of complementary products that serve a strategic purpose in the firm while at the same time establishing suppliers with specific abilities for bidding in any specified contracts. E-supplier selection helps the firm to get the required level of right price and it was a critical step in procurement activities of the firms.

E-supplier identification, e-supplier selection, e-prequalification and e-supplier evaluation all have positive and significant effect on procurement costs. Electronic sourcing has a positive and significant effect on procurement cost.

5.4 Recommendations of the Study

Electronic sourcing was largely supported by the introduction of e-procurement in all state agencies as a result of roll out of Integrated Financial Management Systems (IFMIS). The functioning of e-sourcing is largely pegged on availability of internet facilities.

The study recommends that the Public Procurement and Regulatory Authority (PPRA) should effectively play its role as far as e-sourcing practices among commercial state corporations in Kenya are concerned. Electronic sourcing should be incorporated by all state agencies as it enhances cost maximization.

5.5 Limitations of the Study

The study was limited to primary data that was largely gathered with use of questionnaires. The study focused on 33 commercial state corporations. The study looked at e-sourcing and procurement costs. E-sourcing was operationalized as under e-supplier identification, e-prequalification, e-supplier evaluation and e-supplier selection. The study was informed by three theories which were: technology acceptance model, resource based view theory as well as the transaction cost theory.

5.6 Areas for Further Research

The study recommends further studies to be conducted in other firms away from the commercial state corporations. E-sourcing was found to explain only 65.9% change in procurement costs, implying that there are other factors affecting procurement costs apart from e-sourcing which future studies should focus on. Further research is also required on other aspects like supply chain responsiveness apart from procurement costs.

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APPENDIX I: QUESTIONNAIRE

SECTION A: GENERAL INFORMATION

1) What is your gender

Male Female

2) What is your highest level of education?

Certificate Diploma Degree

Masters PhD

Other (Please explain) -----

3) How long has the organization been in existence?

1- 5 years 5-10 years

10-15 years above 15 years

4) What is the average number of employees in the firm?

1- 5 5-10

10-15 above 15

5. Kindly indicate the average procurement budget in your firm annually?

.....

SECTION B: ELECTRONIC SOURCING PRACTICES

6. For each of these statements on electronic sourcing practices, kindly indicate the extent of your agreement on how it applies in your organization. Use the Likert scale which ranges from 1 -5 where 1= strongly disagree; 2 = disagree 3= neutral; 4= agree and 5= strongly agree.

. E-SUPPLIER IDENTIFICATION					
Statements	1	2	3	4	5
The firm uses internet to identify potential new suppliers					
The firm has in place a specific criteria for identifying the suppliers					
The firm considers the quality aspect of suppliers before identification					
The firm uses internet to come up with a list of potential supplier for emerging commodities					
The firm continuously maintains a full list of suppliers to cushion the existence of unforeseen preferred suppliers					
Electronic supplier identification helps the firm to frees up time for the firm to focus on other core activities					
E-PREQUALIFICATION					
Statements	1	2	3	4	5
The firm selects a list of preferred suppliers with the help of internet					
Preferred suppliers are usually the providers of complementary products that serve a strategic purpose in the firm					
The essence of supplier prequalification process is to come up with a data base of adequate bidders besides ensuring that every bidder has the required ability					
Electronic prequalification helps in omitting bidders who have not qualified for the contract while quickening the process of evaluating supplier					

Electronic prequalification of suppliers helps in establishing suppliers with specific abilities for bidding in any specified contracts					
E-SUPPLIER EVALUATION					
Statements	1	2	3	4	5
There is electronic evaluation of suppliers in the firm					
Electronic supplier selection helps the firm to make the final decision as it regards the award of the contract					
Through e-sourcing portal, the firms has been able to automate the evaluation of responses					
Electronic supplier selection considers the technical qualifications of suppliers					
E-SUPPLIER SELECTION					
Statements	1	2	3	4	5
The firm selects its suppliers electronically					
Electronic supplier selection is a critical step in procurement activities of our firm					
Electronic supplier selection is key in helping the firm to get the desired level of quality					
Electronic supplier selection helps the firm to get the required level of right price					

SECTION D: PROCUREMENT COST

8. For each of these statements on procurement costs, kindly indicate the extent of your agreement on how it affects tax compliance in your organization. Use the Likert scale which ranges from 1 - 5 where 1= strongly disagree; 2 = disagree 3= neutral; 4= agree and 5= strongly agree.

Statement	1	2	3	4	5
The lead time in the firm has been shortened					
The firm ensures value for money in all the sourcing activities					
The firm has significantly reduced the costs of ordering items					

THANK YOU

APPENDIX II: LIST OF COMMERCIAL STATE CORPORATIONS IN KENYA

1. Agro-Chemicals and Food Company
2. Chemelil Sugar Company
3. East African Portland Cement Company
4. Gilgil Telecommunications Industries
5. Jomo Kenyatta Foundation
6. Kenya Airports Authority
7. Kenya Broadcasting Corporation
8. Kenya Civil Aviation Authority
9. Kenya Electricity Generating Company
10. Kenya Electricity Transmission Company
11. Kenya Literature Bureau
12. Kenya Ordinance Factories Corporation
13. Kenya Pipeline Company
14. Kenya Ports Authority
15. Kenya Power and Lighting Company
16. Kenya Railways Corporation
17. Kenya Safari Lodges and Hotels
18. Kenya Seed Company Limited
19. Kenya Wine Agencies
20. Kenyatta International Convention Center
21. National Cereals and Produce Board

22. National Housing Corporation
23. National Oil Corporation of Kenya
24. National Water Conservation and Pipeline Corporation
25. New Kenya Co-operative Creameries Ltd
26. Numerical Machining Complex
27. Nzoia Sugar Company
28. Postal Corporation of Kenya
29. Pyrethrum Board of Kenya
30. School Equipment Production Unit
31. South Nyanza Sugar Company
32. Telkom Kenya Limited
33. University of Nairobi Enterprises and Services Limited

Source; State Corporation & Advisory Committee (2019)