

**ELECTRONIC PROCUREMENT ADOPTION PRACTICES ON SUPPLY CHAIN  
PERFORMANCE IN KENYA POWER LIMITED, SOUTH NYANZA REGION**

**BY**

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## DECLARATION

I declare that this research project is my own work and has never been presented for any award.

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Sign

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This project has been submitted for evaluation with my approval as the university supervisor.

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## **DEDICATION**

This research report is dedicated to my dear husband Gabriel Ochien’g Adiema, my children Henry Larry, Francis Pasaka and Diana Cathy who have been of great support and encouragement during my entire post graduate studies not forgetting my friend Ruth Nyaboke for her moral support. Your unconditional support has seen me come this far; may the Almighty God bless you abundantly.

## ABSTRACT

The government of Kenya considers Information Communication Technology as a key pillar in implementation of vision 2030 which targets to transform this country into an industrialized nation. Recently, the ministry of Finance with the support of Public Procurement Oversight Authority (PPOA) came up with a mandate of establishing e-procurement alongside Integrated Financial Management Information Systems (IFMIS) in public sector to enhance supply chain performance. The initiative of implementing e-procurement and IFMIS by the government of Kenya has been hailed as a success towards attainment of vision 2030. Despite these efforts, numerous complaints on system failures, downtimes, massive scandals and indignity which have been attributed to the poor handling of procurement processes thus leading to excessive corruption have been reported leading to the question as to why the intended purpose of e-procurement in improving supply chain performance has been met. This study was therefore designed to determine the relationship between electronic procurement adoption practices and supply chain performance in Kenya Power Limited, South Nyanza Region. The specific objectives were to determine the relationship between e-Tendering and supply chain performance, e-Access and supply chain performance, e-Sourcing and supply chain performance and e-ordering and supply chain performance; of Kenya Power Limited, South Nyanza Region. The study was guided by a conceptual framework where the dependent variable was supply chain performance and independent variable was e-procurement practices. The study was based on the Technological Acceptance Theory (TAM). Correlational and Case Study designs were adopted. The study population was 300 respondents drawn from both staff and prequalified suppliers of Kenya Power Limited, South Nyanza Region. Stratified random sampling was carried out on a sample size of 137 respondents. A structured questionnaire was used to collect primary data. Test re-test method was used help gauge instrument reliability while validity of the instrument was assessed using expert judgment on how well the construct items fit their conceptual definition. Inferential statistic like regression analysis was used to analyze data. Data was presented in form of tables. Regression analysis indicated that e-tendering ( $\beta_1=0.033$ ,  $p>0.05$ ) was positive relationship on supply chain performance. E-access ( $\beta_2= -0.065$ ,  $p>0.05$ ) had a negative relationship-sourcing ( $\beta_3=0.012$ ,  $p>0.05$ ) and e-ordering ( $\beta_4= 0.095$ ,  $p>0.05$ ) were positive relationship on supply chain performance. Besides, the value of  $R^2$  of 2.6% indicated that 2.6% variance in supply chain performance accounted for by the three inventory management controls. The concluded that the three e-procurement practices (e-tendering-sourcing and e-ordering) influenced supply chain positively hence the organization should invest on them and should not invest in access since it has negative relationship. The study recommends that organizations should invest in e-sourcing, ordering and e-sourcing platforms to ensure accurate processes of sending requests for information and prices to suppliers and receiving the response using internet technology are adhered too for the organization benefit from this e-procurement practice and put in place measures to monitor implementation of e-access and no investment should attached to the practice

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## **ABBREVIATIONS AND ACRONYMS**

<b>EP</b>	-	Electronic Procurement
<b>SCM</b>	-	Supply Chain Management
<b>SCP</b>	-	Supply Chain Performance
<b>PPDA</b>	-	Public Procurement and Disposal Act
<b>IFMIS</b>	-	Integrated Financial Management Information System
<b>PPOA</b>	-	Public Procurement Oversight Authority
<b>ICT</b>	-	Information and Communication Technology
<b>IT</b>	-	Information Technology
<b>KP</b>	-	Kenya Power Limited
<b>CSC</b>	-	Commercial State Corporations
<b>TAM</b>	-	Technological Acceptance Theory
<b>NHIF</b>	-	National Housing Insurance Fund
<b>SPSS</b>	-	Statistical Package for Social Sciences
<b>EDI</b>	-	Electronic Data Interchange
<b>EOU</b>	-	Ease of Use



## **OPERATIONAL DEFINITION OF TERMS**

**E-Tendering** - Is the process of sending requests for information and prices to suppliers and receiving the response using internet technology.

**E-Access** (E-Informing/E-notification) - Is the gathering and distributing purchasing information both from and to internal and external parties using internet technology. It involves an organization electronically notifying potential suppliers of a future tendering opportunity.

**E-ordering** - E-ordering is the process of creating and approving purchasing requisition, placing purchase orders as well as receiving goods and services ordered, by using a software system based on internet technology which greatly improves the supply chain performance.

**E-Sourcing** - E-sourcing is the process of identifying next supplies for a specific spend category, using internet technology usually the internet itself.

**Electronic Procurement** – Is the use of the internet to operate transactional aspect of requisition, ordering, receiving and payment for the required services, works and goods.

**Supply Chain** – Is a network of organizations that are involved through upstream and downstream linkage, in the different processes and activities that produce products and services to the customer.

**Supply Chain Performance** - Performance measurement systems are described as the overall set of metrics used to quantify both the efficiency and effectiveness of action. In the context of this research, performance will mean both buyer and supplier performance on timely delivery on the orders.

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## CHAPTER ONE

### INTRODUCTION

This chapter consists of the background, statement of the problem, objectives of the study, research hypotheses, scope of the study, justification of the study and the conceptual framework.

#### 1.1 Background

The beginnings of Electronic procurement were in the early 1980s with the development of electronic data interchange (EDI). This allowed customers and suppliers, most often in the fast moving consumer goods business, to send and receive orders and invoices via secure store and call forward networks. These EDI systems allowed businesses to exchange and synchronize master data files on products, prices, specifications and information about each other's areas and trading practices then in the 1990's internet software started to become available, and software companies started to develop buyer managed electronic catalogues for use.

E-Procurement refers to the use of Internet-based system used to perform individual or all stages of procurement process, including search, sourcing, negotiation; ordering, receipt, and post-purchase review. As noted by Nelson *et al.* (2001), purchasing accounts for the majority of organizational spending. As such, the advent of web-based electronic procurement has been viewed as a 'revolution' because of its potential to reduce the total cost of acquisition. With the emergence of Information and Communication Technology (ICT), companies have been forced to shift their operation from the analogue to digital Supply Chain philosophy in order to sustain themselves (Lee *et al.*, 2007). Over the past decade, both private and public sector entities have been utilizing Information Technology (IT) to streamline and automate their purchasing and other processes (Koorn et al, 2001). Kenya as a country has not been left behind in this. The government of Kenya commissioned procurement regulation 2013, which required all public entities to adopt and implement e-procurement. In connection to that, there have been efforts to ensure that government agencies implement e-procurement, Procurement Regulation (2013) and it is not long ago that the introduction of e-Procurement in Kenya was being hailed as a big success. In many other countries in Africa and indeed other parts of the world, corruption has been a major problem in public procurement (The National Youth Service Scam, Tokyo Embassy Property Scam, Cemetery land Acquisition scam and The

National Housing Insurance Fund (NHIF) conspiracy among others), and the introduction of e-Procurement was seen as one way of countering this.

State corporations are formed and owned by the government in order to meet both commercial and social goals which include: correcting market failure, exploiting social and political objectives, providing education, health, redistributing income and developing marginal areas (Mwangi, 2013; Njiru, 2008).

The Kenya Power Limited was incorporated in 1922 as the East African Power and Lighting Company Limited to serve Kenya, Uganda and Tanzania. Its name changed to the Kenya Power and Lighting Company Limited in 1983. Kenya Power is partly owned by the Government of Kenya with 50.1 percent shareholding, and private investors with a 49.9 percent shareholding. Prior to a major power sector restructuring exercise in 1997, Kenya Power also managed all generating stations on behalf of the government. Kenya Power owns and operates most of the electricity transmission and distribution system in the country and sells electricity to over 4.8 million customers.

The Company's key mandate is to plan for sufficient electricity generation and transmission capacity to meet demand; building and maintaining the power distribution and transmission network and retailing of electricity to its customers.

The Government has a controlling stake at 50.1% of shareholding with private investors at 49.9%. Kenya Power is listed on the Nairobi Securities Exchange. The national grid is the interconnected network of transmission and distribution lines in a country's power system. The total length of lines in Kenya as at June 2015 was about 59,459 kilometres with various regions linked at 220kV and 132kV. Transmission lines comprise 4,054 kilometres while distribution lines total up to 55,405 kilometres. Kenya Power operates and maintains the country's national grid and is responsible for power plant dispatch through the National Control Centre in Nairobi. The corporation is guided by public procurement and asset disposal Act, 2015; government policies, rules and regulations in conducting its procurement activities and is known to be practicing e-procurement largely. The degree and early involvement of suppliers in e-procurement application is directly connected to the success of the process. Birks et al., (2001) points to the fact that, engaging the suppliers in a demonstration and discussion of the changes that might occur during the implementation is very important. As such, Staff and Suppliers of Kenya power forms a good environment to

assess the role of e-procurement adoption practices on procurement performance in Kenya Power Limited.

According to Roma and McCue, (2012), e-procurement is the use of information technology to develop a procurement process that is responsive to changes in the environment. E-Tendering refers to the process of sending requests for information and prices to suppliers and receiving the response using internet technology (McConnell, 2009; Henry, 2000; Neef, 2001 and Heywood et al., 2002). It is an e-procurement phase that involves the union of e-access and e-submission phases. This union comes as result of electronic advertisements of calls for tenders and contract notices at e-noticing phase. E-Informing or e-noticing is an e-procurement phase which entails gathering and distributing purchasing information both from and to internal and external parties using internet technology facilitated by on-line notification systems (McConnell,2009; and Heywood et al, 2002). This contributes to efficiency and effectiveness of the tender process in state corporations leading to enhanced procurement performance (Kamotho, 2014; Gunawardhana et al, 2012; McConnell, 2009; Croom & Brandon, 2005). Since the internet spans the globe, pockets of target market (for an item needed) scattered around the world can all be targeted at once, rather than trying to find different publications, radio stations and television stations that cater to a particular geographical area; thus e-informing has a greater range of coverage which attracts real competition leading to competitive prices of items to the buying entity (Gunawardhana *et al.*, 2012). Besides, since tracking the reach of newspaper and television advertisement is difficult; e-notification allows the advertiser to track the number of impressions an advert gets from the people viewing it, and how many visits their business web site gets from particular adverts. Since targeted nature of internet advertising and the ability to track the effectiveness of adverts, conversion rates from e-notification is typically much better than traditional mediums, thus helps in reducing advertisement cost to the buying company (Doherty, et al, 2013).

According to Eadie *et al.*, (2007), an organization which uses E-procurement has the following advantages: First, Price reduction in tendering: Empirical studies carried out Gebauer *et al.*, (1988) in the United States of America indicated that the two most important measures for the success of procurement processes are cost and time. In this method, there is no paperwork, postage fee and other costs associated with preparation and sending tender documents. It is also faster to send a document electronically as compared to the traditional

method of sending tender documents through post office thus the need to determine the relationship between e- Tendering and Supply Chain Performance (SCP). It results to improved order tracking and tracing, for it is much easier to trace the orders and make necessary corrections in case an error is observed in the previous order thus the need to examine the relationship between e-ordering on Supply Chain Performance. Secondly, there is reduction in time to source materials: Reduction in time has been proved as a relevant benefit by Knudsen (2003) who says “E-procurement is a rapid efficient method of finding and connecting new sources, being a lean channel for communication”. As such assessing, the relationship between e-Sourcing and Supply Chain Performance become vital. Lots of time is spent on paper invoicing which is an indication that establishing the relationship between e-Access and supply Chain performance.

## **1.2 Statement of the Problem**

The government of Kenya considers ICT as a key pillar in implementation of vision 2030 which targets to transform this country into an industrialized nation. As a step to achieving this, the Government moved to set up ICT centers in addition to the laptop project for primary schools. A full ICT board has been set up by the government to spearhead the ICT change in the country which is a positive signal to e-procurement. Recently the ministry of Finance with the support of Public Procurement Oversight Authority (PPOA) came up with a mandate of establishing e-procurement alongside Integrated Financial Management Information Systems (IFMIS) in public sector. The government of Kenya is currently advocating for adoption of e-procurement by all public procuring entities to enhance transparency, effectiveness, accountability and reduction in corruption. Further, it is argued that there is need to have a robust automated procurement system which is interlinked and this will lead to enhanced competitiveness and lowered costs. There have been efforts to ensure that government agencies implement e-procurement, Procurement Regulation (2013) and not long ago, initiatives of implementing e-procurement by the government of Kenya were hailed as a success. The lack of transparency in the manual procurement process has made it impossible for the government and state corporations to realize their objectives leaving e-procurement as the major alternative. Despite all this, procurement function in Kenya has been characterized by massive scandals and indignity which have been attributed to poor handling of procurement processes thus leading to excessive corruption. The devolved units in Kenya are now advocating for the suspension of the implementation of e-procurement systems in counties citing its ineffectiveness in service delivery due to lack of

the required infrastructure. Currently, the performance of the devolved units in delivering services to the stakeholders is minimal due to the numerous challenges they are facing and complaints on their procurement processes. This study is therefore designed to determine the relationship between electronic procurement adoption practices on performance of supply in state corporations.

### **1.3 Objectives of the Study**

The general objective of this study was to determine the relationship between electronic procurement adoption practices on performance of supply chain in state corporations, a case of Kenya Power Limited, South Nyanza Region.

The specific objectives of the study were:

1. To determine the relationship between e- Tendering on Supply Chain Performance of Kenya power Limited, South Nyanza Region.
2. To establish the relationship between e-Access on Supply Chain Performance of Kenya power Limited, South Nyanza Region.
3. To assess the relationship between e-Sourcing on Supply Chain performance of Kenya power Limited, South Nyanza Region.
4. To examine the relationship between e-ordering on Supply Chain Performance of Kenya power Limited, South Nyanza Region.



#### **1.4 Research Hypothesis**

H<sub>01</sub>: There is no significant relationship between e-Tendering on Supply Chain Performance.

H<sub>02</sub>: There is no significant relationship between e-Access on Supply Chain Performance.

H<sub>03</sub>: There is no significant relationship between e-Sourcing on Supply Chain Performance.

H<sub>04</sub>: There is no significant relationship between e-Ordering on Supply Chain Performance.

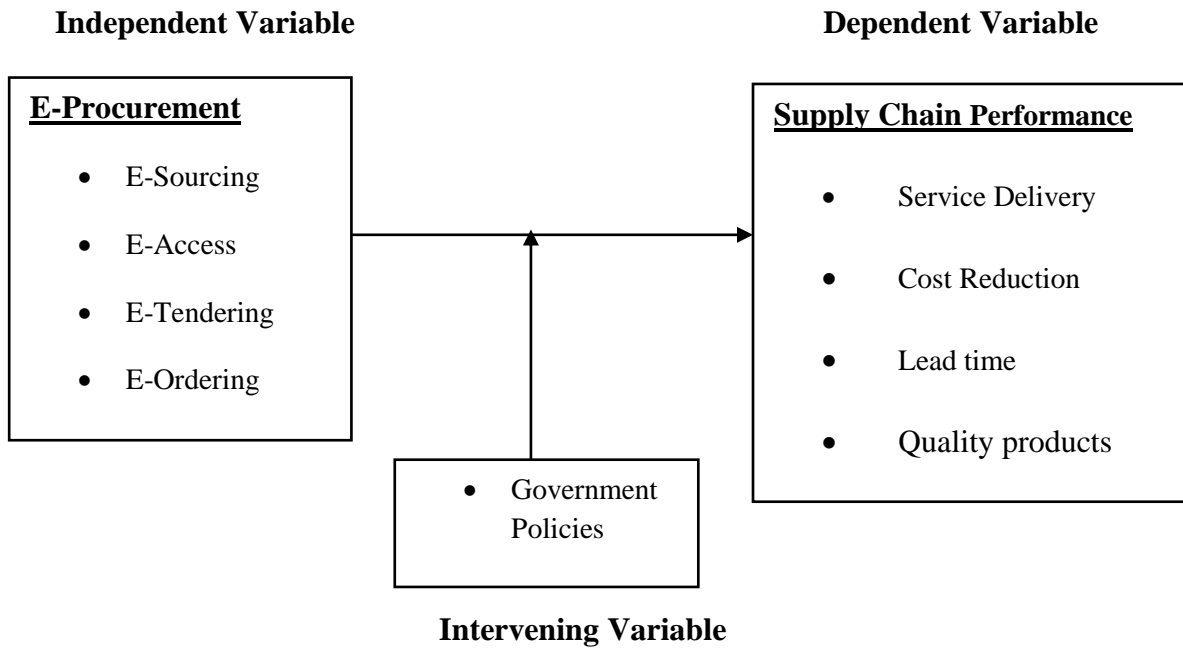
#### **1.5 Scope of the study**

The study covered both e-Procurement adoption Practices and supply chain performance as the main concepts. The study will be conducted in Kenya Power Limited, South Nyanza Region, Kisii Office. Kisii County borders Nyamira County to the North East, Narok County to the South and Homabay County and Migori County to the West. The County lies between latitude 00 30' and 100 South and longitude 340 38' and 350 East. It covers an area of 1,302km<sup>2</sup>, a population of 1,152,282 people as per the 2009 census). The study will be conducted for a period of four months.

#### **1.6 Justification of the Study**

The study covered e-Tendering, e-Access, e-Sourcing, e-Ordering and Supply Chain Performance. The findings of this study will be used by the policy makers to improve the implementation and adoption processes of e-Procurement on supply chain performance in other state corporations, County Government and other beneficiaries. It will also form a basis for further research on academic arena.

## 1.7 Conceptual Framework on e-Procurement Adoption Practices



**Fig.1.1 Conceptual Framework on e-Procurement Adoption Practices**

**Source: Self conceptualization 2017**

The conceptual framework consists of the independent variable e-sourcing, e-Access, e-Tendering and e-Ordering while the Dependent variable is the supply chain performance: Service delivery, Cost reduction, Lead Times and quality products.

## **CHAPTER TWO**

### **LITRATURE REVIEW**

This chapter consists of theoretical, empirical literatures and a summary of literature gaps.

#### **2.1 Theoretical Literature**

Electronic Procurement is a technology based system whose importance is measured in terms of cost and time which are yielded in an environment of greater efficiency and effectiveness. The theoretical framework of this research will be based on Technological Acceptance Model.

##### **2.1.1 Technological Acceptance Theory/TAM**

The theory of technology acceptance is one of the most popular theories in understanding adoption of computer technologies. Adoption of any innovation or especially information technology based requires investment in computer based tools to support decision making, planning communication.

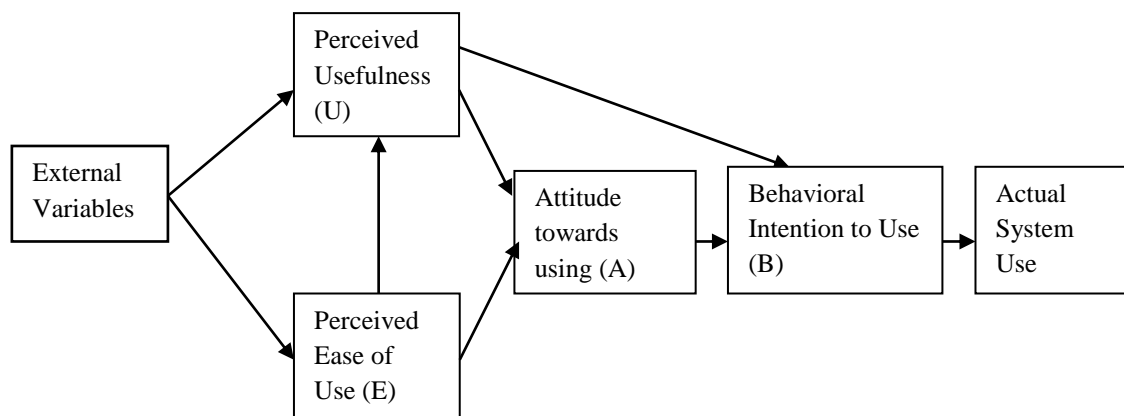
Technology Acceptance Model (Davis, 1989) is one of the most popular research models to predict use and acceptance of information systems and technology by individual users. In TAM model, there are two factors perceived usefulness and perceived ease of use is relevant in computer use behaviors. Davis defines perceived usefulness as the prospective user's subjective probability that using a specific application system will enhance his or her job or life performance. Perceive ease of use (EOU) can be defined as the degree to which the prospective user expects the target system to be free of effort.

According to TAM, ease of use and perceived usefulness are the most important determinants of actual system use. These two factors are influenced by external variables. The main external factors that are usually manifested are social factors, cultural factors and political factors. Social factors include language, skills and facilitating conditions. Political factors are mainly the impact of using technology in politics and political crisis. The attitude to use is concerned with the user's evaluation of the desirability of employing a particular information system application. Behavioral intention is the measure of the likelihood of a person employing the application.

E-procurement adoption entails changes that include reengineering the existing system within the organization that will ultimately impact on the way tasks are conducted (Kaliannan et al,

2008). Major procurement operations carried out within Kenya Power that can be greatly changed as a result of e-procurement adoption practices include the ordering process which involves tasks like: order preparation, order approval and order transmission to the supplier. As such, the perception of employees and suppliers on the usefulness and ease of use of e-procurement system is very critical in realizing full benefits of e-procurement adoption; especially in the implementation of e-ordering. Thus, this model will be employed in answering all research hypotheses pertaining to the effect of e-ordering on procurement performance in state corporations in Kenya.

**Fig. 2.1 Technology Acceptance Model (TAM) Adopted from Kamel (2004)**



## 2.2 Empirical Literature

### 2.2.1 E-Tendering on Supply Chain Performance

Adams (2014) assessed the potential of electronic procurement in public sector, the case of Ghana metropolis. He used 50 respondents. The study revealed that the paper based/manual procurement is suffering challenges from all four themes of the study (Data/Technology, process, People, and compliance). Study further revealed that under the four themes that e-procurement system is not without challenges and majority of such challenges would be technology related. He recommended that procurement acts be reviewed to include elements of e-procurement so as to start incorporating technology aided procurement practices in public sector. Adams (2014)'s recommendation has so far been realized in as much as so many third world countries have incorporated e-procurement systems policies in their main stream government expenditure. However, this is a Ghanaian context and the study does not give other factors that could affect e-procurement other than that of technology. The

researcher elaborated on these factors with reference to the Kenyan state and assess if e-procurement systems have a contract management features set as default into the contract register during e-tendering planning stage of project creation.

In Kenya, Kamotho (2014) studied e-procurement and procurement performance among state corporations. The research used descriptive statistics to analyze the data. The study population was two hundred and ten (210) state corporations with a sample size forty two (42). The study found out that state corporations have adopted most e-procurement practices to enhance their procurement performance. The study also revealed that that the procurement practices adopted have had a significant impact on procurement performance. The study further recommends that the government should put effort to ensure all remnant state corporations adopt e-procurement. In concurrence with many researchers, Kamotho(2014) acknowledges the impact e-procurement is having on procurement performance, however, his recommendations gives very little insight on reasons for existence of some remnant state corporations. This study addressed the practices not yet adopted and specifies the non-compliant procurement partner, is the buyer's side or the seller's side.

Chepkirui (2015) in her study on the effects of e-procurement on supply chain performance in state corporation in Nairobi county, Kenya used descriptive statistics to study 216 procurement officers and the results indicated that e-tendering, e-ordering, e-informing have a positive significant effect on supply chain performance while e-sourcing have a negative significant effect on SCP. The study concluded that e-procurement dimensions with an exception of e-sourcing increases SCP. Moreover, the study did not incorporate suppliers and the challenges they face.

### **2.2. 2 E-Access on Supply Chain Performance**

In USA, Li and Lin (2012) studied Accessing information sharing and information quality in Supply Chain management used structured interviews and a hypothesized framework with a study population of 196 organizations. Their study found out that information sharing and information quality are not impacted by customer uncertainty, technology uncertainty, commitment, trust of supply chain partners. The study concluded that information sharing is impacted positively by Top management support, trust in Supply Chain Partners and shared vision between Supply Chain partners and negatively affected by supplier uncertainty. Whereas the researcher concluded that information sharing is impacted positively by Top

management support, Trust in Supply Chain partners and shared vision between Supply Chain partners, the study missed out on the classes of information; general, top secret and how much information to share. Thus, this study sought to establish the type and information that will impact the Supply Chain by establishing classes of information shared to the external parties.

In Taiwan, Chang ,Tsai and Hsu (2013) in their study of the relationship between e-procurement and supply chain performance used interview with a sample size of 108 and that found that partner relationships, information sharing, and supply chain integration can represent the processes through which e-procurement contributes to supply chain performance. This concurs with the finding of Nyaga (2015). Whereas the study found out that Supply chain integration has the highest standardized total effect on supply chain performance, it was focused on information sharing but not outlining the tenets of confidentiality, integrity and Availability of information.

In Kenya, Osir (2016) studied the role of e-procurement adoption on procurement performance in State Corporation, a case of Kenya Utalii College. The study used a population of 120 employees with a structured questionnaire and found out that other than electronic bid transmission to tenders, e-tendering increase the procurement performance. The study further concluded that e-procurement has been adapted to varying extends by state corporations. As such the state corporations are still using traditional methods of procurement. However the study did not delineate with procurement practice still use traditional method of procurement. This study sought to establish which procurement practices are more essential in cost reduction.

In Kenya, Kingori (2013) studied the effects of e-procurement on SCM at the Teachers Service Commission using 1000 employees from Human Resource Department, Administration, Finance and Supply Chain. A structured questionnaire was used with a sample size of 100. The findings revealed that there was a strong relationship between e-procurement levels of ICT expertise and levels of e-procurement application. The study further concluded that, management should increase the level of e-procurement application as well as practices since they seem to have a positive impact on supply chain performance. Even though the study made these conclusions, the study did not specify the levels of application which enables fast and timely information sharing access in the supply chain.

Further, the study concluded one-procurement application failing to state specific Information system enablers. E-Procurement application such as Transaction Processing Systems (TPS), Management Information Systems(MIS), Decision Support Systems (DSS) and Executive Support Systems (ESS) are key enablers between different levels of expertise, This study therefore established how these IS tools increase information sharing among different levels of expertise

### **2.2.3 E-Ordering on Supply Chain Performance**

In Kenya, Kipkemboi and Langat (2016) in their study of e-ordering and e-informing on supply chain performance in retail outlets in Kenya used a population of 224 procurement officers from 112 Kenyan retail markets. The study revealed that e-ordering contributes immensely to supply chain performance. As a result, there is reduced dependency on manual intervention since the online ordering system does all the supply chain functions. The study concludes that e-ordering and e-informing which are elements of e-procurement dimensions increases supply chain performance. Hence there is need for firms to make use of e-ordering and e-informing in the procurement process. Therefore, electronically consult references for product/service that takes goods quality so as to heighten supply chain performance.

Nyagah, Kairuri and Mwangangi (2015), carried out a study on the influence of e-procurement implementation on supply chain performance in dairy industry at New Cooperative Creameries Limited, Kenya. Using a descriptive research design, the study found out that there was a positive correlation between e-ordering and supply chain performance. The study further recommended that the company should improve supply chain performance electronic order processing. Electronic ordering is the use of the internet to facilitate operational purchasing process, requisition, order processing, order approval and the transmission and acceptance of this by supplier (Croom & Brandon, 2005). This study concurs with Afande (2015), who revealed that there is a positive relationship between e-ordering and Supply Chain Performance. He explained that automated approval systems enhances efficiency in procurement process due to its potential to reduce; the amount of time from requisition submission to purchase order creation, reduce the cost of sending purchase orders to suppliers due to lower processing overheads, increases compliance with spending limits as long as the hierarchy is accurately maintained and checked during approval; controls leakage as end users have to go through additional steps to add suppliers not currently in the vendor master list. The study however, does not give an insight how automated approval

systems enhances efficiency in procurement process. This study bridged the gap by establishing how these factors enhance efficiency in e-procurement.

A study on E-procurement adoption among large scale manufactures in Nairobi Kenya by Mauti (2012) to ascertain the extent to which large scale manufactures have adopted e-procurement; determine critical success factors influencing the success of e-procurement and to establish challenges facing e-procurement was carried out. A questionnaire was administered to forty six (46) out of four hundred, fifty five (455) people. The studies revealed that majority of large scale manufacturers have adopted e-procurement with various e-procurement practices: online advertisement of tenders, online-submissions, short listing of suppliers. Critical success factors and challenges facing adoption were also highlighted. However, the study failed to highlight how employee commitment brings about success to e-procurement.

#### **2.2.4 E-Sourcing on Supply Chain performance**

Twawinyinyu and Iaptane (2012) studied the impact of strategic sourcing and e-procurement on supply chain performance management in Thailand. The purpose of the study was to investigate current and emerging e-procurement practices, identify the critical elements of strategic sourcing and assess the impact of strategic and e-procurement on firms and supply management performance. The methodology employed was a survey questionnaire with a population comprising of company supply chain GSK electronic Thailand and a sample of 40. The study indicated that e-sourcing and e-procurement are not effective in improving flexibility while advanced technologies are. In addition, increased flexibility does not lead to improved supply chain performance. Based on earlier research lower level flexibility (machine and labor) and as higher level flexibility dimensions (volume, mix, product modification and new product development) are key elements for an effective information system like e-procurement. However, the research indicated no relationship between the two. Hence need to find out whether flexibility affects performance and if a relationship exists between the two. This research assessed the impact of flexibility on e-procurement performance.

In Kenya, Ochari and Kaswira (2016) studied the effects of electronic sourcing on performance of procurement function at the county government of Nakuru. They used a descriptive research design with a population of 168 staff of procurement function and a



sample size of 118 of the county government of Nakuru. Their study revealed that the concept of e-sourcing has been adopted but not fully implemented, hence not realizing full benefits of e-sourcing. Even though the researchers discussed the benefits of e-sourcing, the study failed to highlight on issues leading to organizations realizing the benefits of e-sourcing. This study sought to assess the issues leading successful e-sourcing.

Kimutai and Noor (2016) used a cross sectional survey to study the role of strategic e-sourcing practices on supply chain performance in state corporations in Kenya, a case of Kenya Electricity generating Company. The main purpose of the study was to assess the role of strategic practices on Supply Chain performance in state corporations. The study Population comprised of top management, supply chain, ICT, Finance and customer service at KENGEN drawn from 187 state corporations. The study concluded that KENGEN had achieved a given degree of e-sourcing adoption. The results showed that e-sourcing implementation have broadened in reach and deepened in scope. It can be argued that e-sourcing eliminates over reliance on one or few suppliers and thus, increases competition which leads to better prices of works, goods and services. This study established appraisal criteria for new supplier entry into the prequalification list.

In Kenya, Okubo (2014) carried out a study on e-purchasing and operational performance of commercial state corporations. The purpose of the study was to find out if commercial state corporations use e-procurement practices and its effect on operational performance with a sampling frame of thirty (30) state corporations out of One hundred and ninety seven (197). The study found out that e-purchasing practices which included e-reverse auctions-administration, e-tendering and were used by in moderate extend. The study revealed a positive relationship between e-purchasing practices and operational performance and recommended further research to establish the extent to which e-purchasing practices is currently used. Most researches have highlighted numerous advantages behind e-procurement. However, the researcher does not give reason to why e-purchasing is used to a moderate extend. Moreover, firms that implement strategic sourcing experience significant improvement in their supply chain performance management, why the uptake is not full yet advantages of e-purchasing are known? This research would therefore assess which e-purchasing practices are being used currently.

### **2.3 Summary of Literature Gap**

The capacity of the government agencies to achieve the best supply deals in terms of supplies provided by the suppliers is not giving the exact results and the process continues to deprive other suppliers a better chance to access the procurement services and contracts due to lack of viable information about the procurement process. The lack of an E-procurement system in government agencies, the county level has made it impossible for the counties to achieve the best deal of the supply contract and thus little is done in terms of giving the right information. Payments are delayed when it comes to service delivery and thus the county is slow in delivering as a result of timelessness in supply. Furthermore, the county has not been able to effectively pay the suppliers due to late invoicing and delayed approvals for supply of goods and services to. State corporations are formed and owned by the government in order to meet both commercial and social goals which include: correcting market failure, exploiting social and political objectives, providing education, health, redistributing income and developing marginal areas. From the reviews studies have been conducted on e-procurement adoption practices globally among state corporations, they have failed to establish the relationship between e-procurement adoption practices and Supply Chain performance. Even though the researches succeeded in revealing major e-procurement adoption practices necessary in enhancing procurement performance to be; e-tendering, e-award, e-ordering and e-invoicing they failed to indicated how these practices affect performance of supply chain and whether a relationship exist between the practices and supply chain performance hence need for further research on e-procurement adoption practices on supply chain performance at Kenya Power Limited, South Nyanza region.

## **CHAPTER THREE**

### **METHODOLOGY**

This chapter presents the methodology that the researcher used to conduct the study. It outlines the research design, target population, sampling technique, data collection and data analysis.

#### **3.1 Research Design**

The study adopted both correlation and case study research design. Correlational design helped establish the relationship between e-Procurement practices and supply chain performance. While case study design was applicable in the study since a case of South Nyanza region will be used to generalize.

#### **3.2 Study Area**

The study was limited to Kenya Power limited, South Nyanza Region with its headquarter in Kisii town. South Nyanza is a new region with a jurisdiction over four counties namely Kisii, Nyamira, Migori, and Homa-Bay. Kisii County borders Nyamira County to the North East, Narok County to the South and Homabay County and Migori County to the West. The County lies between latitude 00 30' and 100 South and longitude 340 38' and 350 East. It covers an area of 1,302km<sup>2</sup>, a population of 1,152,282 people as per the 2009 census.

#### **3.3 Target Population**

A population is defined as a complete set of individuals, the entire unit of observation, cases or objects with some common observable characteristics (Mugenda and Mugenda, 2003) that one wishes to study. The target population was 300 comprising of staff drawn from Procurement, Finances, Stores, operation and maintenance, marketing and all the 244 prequalified suppliers and contractors of Kenya Power, South Nyanza region as per the table below.

**Table 3.1 Population Table**

<b>Department</b>	<b>Population</b>
Procurement	4
Stores	7
ICT	5
Finance	15
Operation & Maintenance	20
Marketing	5
Suppliers of goods	244
<b>Total</b>	<b>300</b>

*Source: Kenya power, Kisii station*

### 3.4 Sampling Frame

A sample is a portion or a subject of the research population selected to participate in a study as a representative of the research population. The sample size for this study was 169 respondents arrived at as per Krejcie and Morgan, 1970. Stratified random sampling was then used as shown below.

**Table 3.2 Sample size Table**

<b>Department</b>	<b>Population</b>	<b>Proportions</b>	<b>Sample</b>
Procurement	4	$(4/300)*169$	2
Stores	7	$(7/300)*169$	4
ICT	5	$(5/300)*169$	3
Finance	15	$(15/300)*169$	9
Operation & Maintenance	20	$(20/300)*169$	11
Marketing	5	$(5/300)*169$	3
Suppliers of goods	244	$(244/300)*169$	137
<b>Total</b>	<b>300</b>		<b>169</b>

*Source: Kenya power, Kisii station*

### 3.5 Data Collection

Primary data was utilized in the study. Primary data was collected using a structured questionnaire. The data was collected then analyzed using quantitative analysis techniques.

### **3.5.1 Source of Data**

Primary and secondary data was used for the study. The primary data was obtained directly from respondents through the administration of questionnaires while secondary data was obtained from document review.

### **3.5.2 Data Collection Procedure**

Data collection procedure is the process of gathering information from all the available sources using data collection instruments with the aim of using such data in research. The questionnaire for the study was designed and distributed by the researcher to various respondents.

### **3.5.3 Data Collection Instrument**

Questionnaire was the main data collection instrument used for the study. Additionally an interview schedule was used to interview the pre-qualified suppliers through telephone. Questionnaire facilitated the collection of data that ensured the best matching of concepts with reality; it provided the same responses from a given set of respondents and helps reduce inconvenience.

### **3.5.4 Reliability test for data Collection**

Reliability refers to the degree to which the measure of a construct is consistent. This was measured using a test- re-test reliability test that measures consistency between two measurements (tests) of the same construct.

### **3.5.5 Validity test for data collection**

Construct validity is the extent to which the measure adequately represents the underlying construct. This was determined by Face validity test to measure whether the indicators seem to be a reasonable measure of its underlying constructs.

### **3.6 Data Analysis**

Data collected was coded and analyzed using Statistical Package for Social Sciences (SPSS) Version 21 computer software to facilitate addressing the research objectives and hypothesis. Quantitative data was summarized using descriptive statistics which include mean, mode, standard deviations, frequencies and percentages. Regression analysis was used to test the study hypotheses by observing any significant association between e-procurement and supply chain procurement modeled by:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where Y- Supply Chain Performance

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$ - are constants to be determined

$X_1$ - e-Tendering

$X_2$ -e-Access

$X_3$ - e-Ordering

$X_4$ - e-Sourcing

$\epsilon$ - Error term

## CHAPTER FOUR

### RESULTS AND DISCUSSIONS

This chapter presents the results discussion of the data analyzed from the questionnaires. The data was analyzed based on the research objectives and questionnaire items using a statistical tool, to generate frequency distribution tables, graphs and the results of analysis presented.

#### 4.1 Response Rate

Koltler (1997) defines the response rate as the extent to which the final set of data includes all sample members and it is calculated as from the number of people with whom interviews are completed divided by the total number of people in the entire sample, including those who refused to participate and those who were unavailable.

From a sample size of 169 respondents issued with questionnaires, 130 of them were returned dully filled giving a proportion of 76.9%. This was as a good percentage that can represent the sample size.

**Table 4. 1Response Rate**

<b>Response Rate</b>	<b>Frequency</b>	<b>%</b>
Filled in questionnaire	130	76.9
Un returned questionnaire	39	23.1
<b>Total</b>	<b>169</b>	<b>100.0</b>

*Source: Research data, 2017*

#### 4.2 General Information

In section I of the questionnaire, the researcher asked the respondents some of the basic information in order to establish the grounds for the study. The following are some the results that were obtained with regard to the general information.

Distribution of respondents by Gender

#### 4.2.1 Distribution of respondents by Gender

The Table 4.1 below shows the results when the respondents were classified by their gender. The results showed that 64.5 % ( 84) were male and 35.4 % ( 46) were female

**Table 4. 2**Distribution of respondents by Gender

Gender	Frequency	%
Male	84	64.6
Female	46	35.4
<b>Total</b>	<b>130</b>	<b>100</b>

*Source: Research data, 2017*

#### 4.2.2 Distribution of respondents by Age

Table 4.3 , shows distribution of respondents by age groups that the majority of the respondents were above 45 years and between 36-45 were 29.2% .Those between 18-25years were 10.8% and between 26-35 years were 23.8%. The implication here is that most of the Kenya power employees at Kisii station respondents were older

**Table 4. 3**Distribution of respondents by Age

Age	Frequency	%
18-25	14	10.8
26-35	31	23.8
36-45	38	29.2
Above 45	47	36.2
<b>Total</b>	<b>130</b>	<b>100</b>

*Source: Research data, 2017*



**Table 4. 4Distribution of respondents by year of work experience**

<b>Work experience in years</b>	<b>Frequency</b>	<b>%</b>
0-2	19	14.6
3-5	54	41.5
6-10	27	20.8
Above 10	30	23.1
<b>Total</b>	<b>130</b>	<b>100.0</b>

*Source: Research data 2017*

#### **4.2.4 Distribution of respondents by Level of Education**

Respondents were asked to state their highest level of education to ascertain the influence level of education on the implementation of enterprise resource planning. The findings of the study are as presented in Table

**Table 4. 5Distribution of respondents by Level of Education**

<b>Level of Education</b>	<b>Frequency</b>	<b>%</b>
Doctoral Degree	1	0.8
Master's Degree	33	25.4
Bachelor's Degree	65	50.0
Professional Degree	25	19.2
Vocational/technical school	6	4.6
High School or equivalent	0	0.0
Others(please specify)	0	0.0
<b>Total</b>	<b>130</b>	<b>100.0</b>

*Source:Research data 2017*

#### **4.3 Results of Regression**

Regression analysis model summary table was generated and R squared value obtained was singled in and it was then used to show the rate of variation in supply chain performance due to interactions between the independent variables. As a result it was concluded the independent variables and dependent variable (Supply chain performance) gave a positive improvement of 2.6% in supply chain performance in the organization.

**Table 4. 6 Model Summary**

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.160 <sup>a</sup>	.026	.066	.587

a. Dependent Variable: Performance of procurement function

*Source: Research data, 2017.*

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.122	4	.280	.813	.519 <sup>b</sup>
	Residual	42.754	124	.345		
	Total	43.876	128			

a. Dependent Variable: Performance of procurement function

*Source: Research data, 2017*

**Table 4. 7 Anova Results**

Anova was used to give statistical significant test on the relationship between independent variables (E-tendering-Access-Sourcing and E-Ordering). A p value of 0.519 was obtained and compared to significance level of confidence of 5%. From that comparison it came out that  $0.519 > 0.05$  and this lead to acceptance of the re-stated null hypothesis. Hence it was concluded that the independent variables (E-Tendering-Sourcing-Ordering and E-Access) have a significant relationship with dependent variable (supply chain performance). Table presents results of the regression analysis in which supply chain performance was regressed on e-ordering- access, e-sourcing and e-ordering. A multiple regression analysis was conducted to establish the statistical significant relationship between e-procurement practices and supply chain performance. The identified model equation to understand this relationship was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

This was modeled to become:

$$Y = 2.079 + 0.033ET + 0.065EA + 0.012ES + 0.095EO + 0.400$$

**Table 4. 8Regression Results**

Source: Research data 2017

Table indicates that e-tendering ( $\beta_2 = -0.065, p < 0.05$ ) was negative but significant predictor

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	2.079	.400		5.194	.000	1.287	2.871
E- tendering	.033	.069	.045	.482	.630	-.103	.170
E-access	-.065	.069	-.088	-.943	.348	-.200	.071
E-sourcing	.012	.066	.018	.183	.855	-.119	.143
E-ordering	.095	.074	.124	1.289	.200	-.051	.241

of performance of procurement function. E-access ( $\beta_1=0.033, p > 0.05$ ), e-sourcing ( $\beta_3=0.012, p > 0.05$ ) and e-ordering ( $\beta_3= 0.095, p > 0.05$ ) was positive but not significant predictors of performance of procurement function.

Besides, the value of  $R^2$  indicates the prediction power of the proposed model. Consequently, 6.6% of the variance in supply chain performance was accounted for by the four E-procurement practices.

**4.3.1 Results on the Relationship between e-tendering and supply chain performance**

Objective one sought to determine the relationship between e-tendering and supply chain performance. The regression equation showed that a unit standard deviation increase e-tendering was likely to increase supply chain performance by 0.033 i.e. e-tendering ( $\beta_1= 0.033, p > 0.05$ ) this indicated significant positive relationship between e-tendering and supply chain performance. This findings concurs of those Kamotho (2014).The research sought to establish the influence of e-procurement on performance of state corporations and established that e-procurement influences performance and recommended that government should put effort to ensure all remnant state corporations adopt e-procurement. The study acknowledged the impact e-procurement is having on procurement performance. The study of chepkirui concurs with this study too from the conclusion that e-procurement dimensions with an exception of e-sourcing increases performance in organization.

#### **4.3.2 Results on the Relationship between e-access and supply chain performance**

Objective two sought to determine the relationship between e-access and supply chain performance. The regression equation showed that a unit standard deviation increase e-access was likely to increase supply chain performance by -0.065 i.e. e-access ( $\beta_2 = 0.065$ ,  $p > 0.05$ ) this indicated significant negative relationship between e-sourcing and supply chain performance. This findings contradicts those of Chang ,Tsai and Hsu (2013) who sought to establish the relationship between e-procurement and supply chain performance and established that partner relationships, information sharing, and supply chain integration can represent the processes through which e-procurement contributes to supply chain performance. However, the finding of this study concurs with those of Osir (2016) who carried out a study on the role of e-procurement adoption on procurement performance in State Corporation, a case of Kenya Utalii College. The study established that electronic bid transmission to tenders, e-tendering increase the procurement performance.

#### **4.3.3 Results on the Relationship between e-sourcing and supply chain performance**

Objective three sought to determine the relationship between e-sourcing and supply chain performance. The regression equation showed that a unit standard deviation increase e-access was likely to increase supply chain performance by 0.012 i.e e-tendering ( $\beta_3 = 0.012$ ,  $p > 0.05$ ) this indicated significant positive relationship between e-sourcing and supply chain performance. This findings contradicts those of Twawinyinyu and laptane (2012) who sought to investigate current and emerging e-procurement practices, identify the critical elements of strategic sourcing and assess the impact of strategic and e-procurement on firms and supply management performance. The study indicated that e-sourcing and e-procurement are not effective in improving flexibility while advanced technologies are. In addition, increased flexibility does not lead to improved supply chain performance.

#### **4.3.4 Results on the Relationship between e-ordering and supply chain performance**

Objective three sought to determine the relationship between e-ordering and supply chain performance. The regression equation showed that a unit standard deviation increase e-access was likely to increase supply chain performance by -0.095 i.e. e-ordering ( $\beta_1 = 0.095$ ,  $p > 0.05$ ) this indicated significant positive relationship between e-sourcing and supply chain performance. This finding is in agreement with those of Kipkemboi and Langat (2016) who sought to establish the influence of e-ordering and e-informing on supply chain performance. The study revealed that e-ordering contributed immensely to supply chain performance. As a result, reduced dependency on manual intervention since the online ordering system does all the supply chain functions. The study concludes that e-ordering and e-informing which are elements of e-procurement dimensions increases supply chain performance. Hence there is need for firms to make use of e-ordering and e-informing in the procurement process.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSIONS AND RECCOMRNDATIONS

This chapter summarizes the results of the study, conclusion, provide recommendations and areas for further study.

#### 5.1 Summary of the Findings

The purpose of this study was to determine the relationship between electronic procurement adoption practices on performance of supply chain in state corporations, a case of Kenya Power Limited, South Nyanza Region. The summary of findings therefore focuses on the following objectives of the study

Objective one sought to determine the relationship between e- Tendering on Supply Chain Performance of Kenya power Limited, South Nyanza Region. The study revealed that e-tendering had a significant positive relationship on supply chain performance.

Objective two sought to establish the relationship between e-Access on Supply Chain Performance of Kenya power Limited, South Nyanza Region. The study revealed that e-access had insignificant negative relationship on supply chain performance.

Objective three sought to assess the relationship between e-Sourcing on Supply Chain performance of Kenya power Limited, South Nyanza Region. The study revealed that e-sourcing had significant positive relationship on supply chain performance.

Objective four sought to examine the relationship between e-ordering on Supply Chain Performance of Kenya power Limited, South Nyanza Region. The study revealed that e-ordering had significant positive relationship on supply chain performance.

## **5.2 Conclusion**

Objective one sought to determine the relationship between e- Tendering on Supply Chain Performance of Kenya power Limited, South Nyanza Region. The finding that e-tendering had a significant positive relationship on performance of supply chain led to the rejection of null hypothesis that e-tendering does not influence supply chain performance of Kenya power Limited, South Nyanza Region.

Objective two sought to establish the relationship between e-Access on Supply Chain Performance of Kenya power Limited, South Nyanza Region. The study revealed that e-access had insignificant negative relationship on supply chain performance. The finding that e-access had insignificant positive influence on performance of procurement function led to the rejection of the null hypothesis that e-access has no significance on supply chain performance of Kenya power Limited, South Nyanza Region.

Objective three sought to assess the relationship between e-Sourcing on Supply Chain performance of Kenya power Limited, South Nyanza Region. The study revealed that e-sourcing had significant positive relationship on supply chain performance.

The finding that e-sourcing had insignificant influence on supply chain performance led to the rejection of the null hypothesis that e-sourcing does not influence the performance of supply chain of Kenya power Limited, South Nyanza Region.

Objective four sought to assess the relationship between e-ordering on Supply Chain performance of Kenya power Limited, South Nyanza Region. The study revealed that e-ordering had significant positive relationship on supply chain performance.

The finding that e-ordering had insignificant influence on supply chain performance led to the rejection of the null hypothesis that e-ordering does not influence the performance of supply chain of Kenya power Limited, South Nyanza Region.

### **5.3 Recommendations**

In the light of the findings which are informative, the following recommendations from the study were made:

Based on the conclusion of objective one that e-tendering has a positive relationship hence influencing the supply chain performance of Kenya power Limited, South Nyanza Region, the study recommends that organizations should invest in e-sourcing platform to ensure accurate processes of sending requests for information and prices to suppliers and receiving the response using internet technology are adhered too for the organization benefit from this e-procurement practice.

Based on the conclusion of objective two that e-access has a negative relationship hence influencing supply chain performance to a small extent, the study recommends that organizations should put in place measures to monitor implementation of e-access and no investment should attached to the practice.

Based on the conclusion of objective three that e-sourcing has a positive relationship hence influencing supply chain performance of Kenya power Limited, South Nyanza Region, the study recommends that organizations should put much of the investments on e-sourcing since it positively influences performance of the procurement function.

Based on the conclusion of objective four that e-ordering has a positive relationship hence influencing supply chain performance of Kenya power Limited, South Nyanza Region, the study recommends that organizations should put much of the investments on e-ordering since it positively influences performance of the procurement function.

### **5.4 Suggestions for further studies**

From the research findings, conclusions and recommendations, the study recommends further research in the following areas; study should be conducted to assess the influence e-procurement practices on transparency and accountability in public institutions and whether such practices can make organization get value for money in the procurement processes. Further research should be done to establish the integrated role of internal and external audit of e-procurement platform. Further studies should be conducted to establish other factors that influence firm performance apart from strategic procurement techniques.



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## APPENDICES

### APPENDIX I: Introductory Letter

Dear Respondent,

#### **RE: REQUEST TO FILL THE ATTACHED QUESTIONNAIRE**

I am student of Maseno University pursuing a Master of Business Administration (MBA) course in the School of Business and Economic. I am currently on research work and would like to request your assistance to fill the attached questionnaire.

The questionnaire has been designed to gather information on “**ELECTRONIC PROCUREMENT ADOPTION PRACTISES ON SUPPLY CHAIN PERFORMANCE IN KENYA POWER LIMITED, SOUTH NYANZA REGION**”.

The information you will present will be entirely for academic and learning purposes and will be treated with utmost confidentiality.

Thank you.

Orwenjo Margaret Atieno

0724836586

Email: orwenjom@gmail.com

## Appendix II: Buyer Questionnaire

### Section 1: General Information

i. Age (years)

18-25 [ ]

26-35 [ ]

36-45 [ ]

Above 45 [ ]

ii. Gender:

Male [ ]

Female [ ]

iii. Experience (in the corporation in years)

0-2 [ ]

3-5 [ ]

6-10 [ ]

Above 10 [ ]

v. What is the highest level of education you have completed?

Doctoral degree [ ]

Master's degree [ ]

Bachelor's degree [ ]

Professional degree [ ]

Vocational/technical school [ ]

High school or equivalent [ ]

Other (Please Specify).....

**Part A: E-Procurement practices**

1. E-Tendering

In a scale of 1-5, rate the extent to which e-tendering practice aspects in the table below influence supply chain performance in your organization.

Key 1 = No Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Great Extent; 5 = Very Great Extent

	<b>Issue</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
i.	Online advertisement of tenders					
ii.	Timely Short listing of tenders by the e-procurement system					
iii.	Availability of Specifications on the company website					
iv.	Time Call for proposals on the company website					
v.	System have a contract management features set as default into the contract register					

2. E-Access

In a scale of 1-5, rate the extent to which e-Access practice aspects in the table below influence supply chain performance in your organization.

Key 1 = No Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Great Extent; 5 = Very Great Extent

	<b>Issue</b>	<b>(1)</b>	<b>2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
i.	Reliability of information in the website					
ii.	Training of Suppliers of e-procurement system					
iii.	Accessibility of e-procurement link					
iv.	Flexibility of the e-procurement system in terms of navigation within the link					

### 3. E-Sourcing

In a scale of 1-5, rate the extent to which e-Access practice aspects in the table below influence supply chain performance in your organization.

Key 1 = No Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Great Extent; 5 = Very Great Extent

No.	Issue	(1)	(2)	(3)	(4)	(5)
i.	Electronic search for new suppliers					
ii.	Ability of e-procurement system to interaction with international, regional and local suppliers					
iii.	Capability of the system to automatically search new suppliers					
iv.	Ability of the e-procurement system to evaluate suppliers					

### 4. E-Ordering

In a scale of 1-5, rate the extent to which e-Access practice aspects in the table below influence supply chain performance in your organization.

Key 1 = No Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Great Extent; 5 = Very Great Extent

No.	Issue	(1)	(2)	(3)	(4)	(5)
I.	Timely order requisitions and uploading of orders					
II.	Prompt approval of orders					
III.	Process suppliers invoice and Payment to supplier					
IV.	Notification of receipt by the system					

**Part B: Supply Chain Performance**

a) In your own opinion, indicate the extent to which e-procurement system has enhanced performance in your organization.

Key: 1 – 5 where: 1 = No Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent

No.	Issue	(1)	(2)	(3)	(4)	(5)
I.	Functionality of website to facilitate e-procurement					
II.	Accessibility of e-procurement link when and as required					
III.	Flexibility of system search engines during navigation					
IV.	Ease of the system use					
V.	Usefulness of the system					
VI.	System ability to meet special customer specification					
VII.	Duration of deliver cycle time					
VIII.	System ability to comply with system principles; Confidentiality, Integrity and Availability of information.					
IX.	System ability to reduce cost along the procurement processes.					

### Appendix III: Work Plan

<b>Event</b>	<b>Duration</b>	<b>Participation</b>
Identification of the research topic	1 week	Researcher assisted by the supervisor
Proposal Development and presentation	3 Months	Researcher assisted by the supervisor
Data collection	1 Month	Researcher and Research assistant
Data Analysis	2 weeks	Researcher
Interpretation and organizations	2 weeks	Researcher assisted by the supervisor
Report writing	2 weeks	Researcher
Presentation of Project	1 day	Researcher
Proposal correction and submission	1 week	Researcher



**Appendix IV: Research Budget**

<b>S/N.</b>	<b>ITEM</b>	<b>QUANTITY</b>	<b>UNIT PRICE</b>	<b>TOTAL COST</b>
1.	Printing papers	5 reams	500.00	2,500.00
2.	Note Books	10 pcs	100.00	1,000.00
3.	Computer services	Lump sum		5,000.00
4.	Binding	Lump sum		2,000.00
5.	Flash disk	1	3,000.00	3,000.00
6.	Photocopying	Lump sum		3,000.00
7.	Data Collection	Lump sum		30,000.00
8.	Subsistence during field work	Lump sum		20,000.00
9.	Data Analysis	Lump sum		10,000.00
			<b>Total</b>	<b>76,500.00</b>

## **Appendix V: List of the Kenyan State Corporations**

Inventory of State Corporations as at 9 October 2013 as per the State Corporations Act, Chapter 446 of the Laws of Kenya

1. Cereals and Sugar Finance Board
2. Coffee Development
3. Cotton Development Authority
4. Kenya Coconut Development Authority
5. Pyrethrum Board of Kenya (now Pyrethrum Regulatory Authority)
6. Sisal Board of Kenya
7. Tea Board of Kenya
8. Coffee Board of Kenya
9. Kenya Sugar Board (KSB)
10. Agro-Chemical and Food Company
11. Kenya Meat Commission (KMC)
12. Kenya Seed Company (KSC)
13. Kenya Veterinary Vaccine Production Institute
14. National Cereals & Produce Board (NCPB)
15. Kenya Agricultural Research Institute (KARI)
16. Kenya Sugar Research Foundation
17. Tea Research Foundation
18. Agricultural Development Corporation
19. National Irrigation Board
20. Kenya Agricultural and Livestock Research Organization
21. Kenya Marine and Fisheries Research Institute Science and Technology
22. The Kenya Veterinary Board (KVB)
23. Kenya Dairy Board
24. Anti-Female Genital Mutilation Board

25. Kenya National Bureau of Statistics
26. National Coordinating Agency for Population & Development
27. Kenya School of Government
28. Kenya Institute of Public Policy Research & Analysis (KIPPRA)
29. Institute of Human Resource Management
30. Tourism Research Institute
31. Kenya National Trading Corporation (KNTC)
32. Kenyatta International Convention Centre
33. Kenya Tourist Finance Corporation (Formally KTDC)
34. Kenya Tourist Board
35. Export Promotion Council (EPC)
36. Tourism Fund Board of Trustees (Formerly Catering and Tourism Development Levy Trustees)
37. Tourism Regulatory Authority
38. Kenya Universities and Colleges Central Placement Service
39. Kenya Literature Bureau (KLB)
40. Kenya Institute of Curriculum Development
41. Kenya National Examination Council (KNEC)
42. Technical and Vocational Education Training Authority
43. Commission for University Education
44. National Commission for Science, Technology and Innovations
45. Jomo Kenyatta University of Agriculture and Technology
46. Kenya Multi-Media University
47. Kenyatta University
48. The Technical University of Kenya
49. University of Nairobi
50. KCA University

51. Rural Electrification Authority
52. Kenya Electricity Generating Company (KENGEN)
53. Kenya Electricity Transmission Company (KETRACO)
54. Kenya Pipeline Company (KPC)
55. Kenya Power and Lighting Company (KPLC)
56. National Oil Corporation of Kenya
57. Geothermal Development Company (GDC)
58. Energy Regulatory Commission
59. National Water Conservation and Pipeline Corporation
60. Kenya Wildlife Service (KWS)
61. Kenya Water Towers Agency
62. Kenya Forest Service
63. Water Resources Management Authority
64. Water Services Regulatory Board
65. National Environmental Management Authority (NEMA)
66. Kenya Water Institute
67. Kenya Forestry Research Institute Science and Technology
68. National Cancer Institute of Kenya
69. Kenya Medical Supplies Authority (former Kenya Medical Supplies)
70. Kenyatta National Hospital
71. Kenya Medical Laboratory Technicians and Technologists Board
72. Kenya Medical Training College (KMTC)
73. Kenya Medical Research Institute (KEMRI)
74. Kenya Wine Agencies Ltd (KWAL)
75. New Kenya Co-operative Creameries
76. Development Bank of Kenya Ltd
77. KWA Holdings

78. Industrial and Commercial Development Corporation
79. Kenya Investment Authority
80. Kenya Industrial Property Institute
81. Anti-Counterfeit Agency
82. Kenya Bureau of Standard (KEBS)
83. Kenya Industrial Research & Development Institute
84. Media Council of Kenya
85. Kenya Yearbook Editorial
86. Kenya Broadcasting Corporation
87. Postal Corporation of Kenya
88. Brand Kenya Board
89. Information and Communications Technology Authority
90. Communications Commission of Kenya
91. Kenya Institute of Mass Communication
92. The National Council for Children's Services
93. National Campaign against Drug Abuse Authority (now National Authority for the Campaign Against Alcohol and Drug Abuse)
94. National Social Security Fund Board of Trustees
95. The National Social Security Assistance Authority
96. National Construction Authority
97. Research Development United Company Ltd
98. Consolidated Bank of Kenya
99. Kenya Reinsurance Corporation Ltd
100. Agricultural Finance Corporation
101. Industrial Development Bank
102. Kenya Post Office Savings Bank
103. Kenya Revenue Authority (KRA)

104. National Museums of Kenya
105. Kenya National Library Service (KNLS)
106. Kenya Rural Roads Authority
107. Kenya Urban Roads Authority
108. Kenya Railways Corporation (KRC)
109. Kenya Airports Authority (KAA)
110. Kenya National Highways Authority (KeNHA)
111. Kenya Civil Aviation Authority (KCAA)
112. Kenya Roads Board (KRB)

**Appendix VI: Krejcie-Morgan-sample-size-table**

Table 3.1									
<i>Table for Determining Sample Size of a Known Population</i>									
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384
<i>Note: N is Population Size; S is Sample Size</i>					<i>Source: Krejcie &amp; Morgan, 1970</i>				

## **Appendix VII: Authorization letter for Data Collection**