

**CHALLENGES OF E-PROCUREMENT IMPLEMENTATION AMONG  
MULTINATIONAL TEA COMPANIES IN KERICHO COUNTY, KENYA**

**BY**

**EVELYNE CHEPKEMOI**

**D61/76077/2012**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF  
THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTERS  
OF BUSINESS ADMINISTRATION, UNIVERSITY OF NAIROBI**

**NOVEMBER, 2014**

## **DECLARATION**

I declare that this paper is my original work and has never been submitted to any other university for assessment or award of degree.

Signed .....

Date .....

**Chepkemoi Evelyne**

D61/76077/2012

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

Signature .....

Date .....

Mr. Gerald Ondiek  
Department of management science,  
School of Business, University of Nairobi

## **ACKNOWLEDGEMENT**

First and foremost, I thank the almighty God for the grace and strength to do my proposal. I acknowledge my supervisor, Mr. Ondiek who has been my constant advisor to the completion of this proposal, also not forgetting my other lecturers who provided me with the right foundation to be able to undertake this proposal. I also acknowledge the University of Nairobi, department of management science who are doing everything to ensure that we get the right skills for our careers. And to all those who supported me either in one way or another, thank you so much and, may God bless

## **DEDICATION**

I dedicate this project to my Dad for all the sacrifices he made to see that i complete my Studies. Also to my husband and my son Ryan for all those moments they needed me but wasn't around due to my studies

## **ABSTRACT**

Electronic Procurement is the use of electronic computer systems to manage the entire procurement process Francois (2012). While this system can deliver significant cost savings to business, a number of innovative companies and marketplaces are now looking at other appropriate areas of their business to drive forward their business performance throughout the value chain - both supply and demand. The objective of the study was to assess the challenges facing implementation of e-procurement by multinational tea companies in Kericho County. The target population was the heads of procurement departments and two employees drawn from each of the three companies. Questionnaires and interview guide was used as the instrument for collecting data since both primary and secondary data was collected. Data was analyzed using qualitative and quantitative techniques. Qualitative data was analyzed using content analysis. Linear regression model was used. According to data findings; all the four independent variable ; cost, legal, security and supplier enablement were found to have correlation coefficients of 0.49, 0.575, 0.506 and 0.552 respectively with the implementation of e-procurement among the multinational tea companies involved in the study. Conclusions are that the entire four variables that were identified for analysis namely; cost, legal infrastructure, security and supplier enablement were found to be key impediments to the implementation of e-procurement. Recommendations are; As much as resources are always limiting, multinational tea companies should look at e-procurement as a critical investment and set aside adequate financial resources in their budgeting process. Furthermore only the initial investment in procurement of the necessary hardware, software and training of require personnel is resource intensive while the subsequent maintenance and operation cost are substantially low in comparison to the streams of benefits that will accrue from such investments.

## TABLE OF CONTENTS

<b>DECLARATION.....</b>	<b>ii</b>
<b>ACKNOWLEDGEMENT.....</b>	<b>iii</b>
<b>DEDICATION.....</b>	<b>iv</b>
<b>ABSTRACT.....</b>	<b>v</b>
<b>LIST OF TABLES.....</b>	<b>ix</b>
<b>LIST OF FIGURES.....</b>	<b>x</b>
<b>LIST OF ABBREVIATIONS.....</b>	<b>xi</b>
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>- 1 -</b>
1.1    Background of the Stud.....	- 1 -
1.1.1    The concept of e-procurement.....	- 2 -
1.1.2    Challenges of E-Procurement Implementation.....	- 3 -
1.1.3    Multinational Tea Companies.....	- 5 -
1.2    Research Problem.....	- 5 -
1.3    Research objective.....	- 7 -
1.4    Value of the study.....	- 7 -
<b>CHAPTER TWO: LITERATURE REVIEW.....</b>	<b>- 9 -</b>
2.1    Introduction.....	- 9 -
2.2    Theoretical perspective.....	- 9 -
2.3    Components of e-procurement.....	- 10 -
2.4    Challenges Facing Implementation of e-Procurement.....	- 11 -
2.4.1    Supplier Enablement.....	- 12 -
2.4.2    System Security.....	- 15 -
2.4.3    Cost Implications.....	- 18 -
2.4.4    Legal Infrastructure.....	- 20 -
2.4.5    Insecurity in E-Transactions.....	- 22 -
2.4    The Conceptual Model.....	- 23 -

Figure 1: Conceptual framework.....	- 23 -
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>- 24 -</b>
3.1 Introduction.....	- 24 -
3.2 Research Design.....	- 24 -
3.3 Target Population.....	- 24 -
3.4 Data collection .....	- 24 -
3.5 Data Analysis .....	- 25 -
<b>CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION .....</b>	<b>- 27 -</b>
4.1 Introduction.....	- 27 -
4.2 Respondent Characteristics .....	- 27 -
4.2.1 Gender of the Respondents.....	- 27 -
4.2.2 Age Bracket of Respondents .....	- 28 -
4.2.3 Level of Education Attained.....	- 29 -
4.2.4 Work Experience.....	- 30 -
4.2.5 Respondents' Terms of Service .....	- 30 -
4.3 Challenges Faced in Implementing E-Procurement.....	- 31 -
4.3.1 Level of e-procurement use and implementation.....	- 32 -
4.4 Budget Related Challenges .....	- 33 -
4.4.1 Budgetary allocation as challenges.....	- 33 -
4.4.2 Sufficient Budgetary Allocation.....	- 35 -
4.5 Security Related challenges.....	- 36 -
4.5.1 Security as a challenge in implementation of e-procurement system.....	- 37 -
4.5.2 Sources of security challenges.....	- 37 -
4.6 Legal infrastructure challenges.....	- 39 -
4.6.1 Existence of Legal challenges .....	- 39 -
4.6.2 Legal infrastructure elements .....	- 40 -
4.7 Supplier Enablement .....	- 41 -

4.7.1	Supplier Enablement as a challenge .....	- 41 -
4.7.2	Supplier enablement challenges .....	- 42 -
4.7.3	Level to which supplier enablement is a challenge .....	- 43 -
4.8	Regression Analysis .....	- 44 -
<b>CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECCOMENDATIONS.....</b>		<b>- 48 -</b>
5.1	Introduction.....	- 48 -
5.2	Summary of the findings .....	- 48 -
5.3	Conclusions.....	- 51 -
5.4	Recommendation.....	- 52 -
5.5	Areas for further Research .....	- 54 -
<b>REFERENCES.....</b>		<b>- 55 -</b>
<b>APPENDICES .....</b>		<b>- 60 -</b>
	Appendix I: List of Multinational Tea firms in Kericho County .....	- 60 -
	Appendix II: Questionnaire.....	- 61 -



## LIST OF TABLES

Table 1: Age of Respondents.....	- 28 -
Table 2: Level of Education.....	- 29 -
Table 3: Work Experience .....	- 30 -
Table 4: Respondents' Terms of Service.....	- 31 -
Table 5: Level of Implementation.....	- 32 -
Table 6: Type of e-procurement system used .....	- 33 -
Table 7: Budgetary allocation challenges .....	- 34 -
Table 8: Extent of Budgetary allocation challenges .....	- 34 -
Table 9: Extent of Budgetary Allocation .....	- 36 -
Table 10: Security as a Challenge.....	- 37 -
Table 11: Extent of Security Challenges .....	- 38 -
Table 12: Legal Challenges .....	- 39 -
Table 13: Different Legal challenges.....	- 40 -
Table 14: Extent to which the legal infrastructure is a challenge to e-procurement-	40
-	
Table 15: Supplier enablement challenges .....	- 42 -
Table 16: Level to which supplier enablement is a challenge .....	- 43 -
Table 17: Correlation between the independent variables.....	- 45 -
Table 18: Regression analysis model.....	- 46 -

## **LIST OF FIGURES**

Figure 1: Conceptual framework .....	- 23 -
Figure 2: Gender .....	- 28 -
Figure 3: Existence of Challenges .....	- 31 -
Figure 4: Sufficient Budgetary Allocation.....	- 35 -
Figure 5: Supplier Enablement as a challenge .....	- 42 -

## **LIST OF ABBREVIATIONS**

- AGIMO – Australian Government
- ASP's – Application service provider
- B2B – Business to Business
- B2C –Business to Consumer
- CP's – Construction players
- CTC – cut, tear, and curl
- EDI – electronic data interchange
- GDP – Gross Domestic Product
- HDB - Singapore's Housing Development Board
- IBM - International Business Machines Corporation
- ICT - Information Communication Technology
- IPR – intellectual properties protection
- IS – Information Systems
- ISO – Inter Organizational Systems
- IT – Information Technology
- KTDA – Kenya tea Development agency
- NePRA – National e-Procurement Project
- NSE – Nairobi Stock Exchange
- OGC - Office of Government Commerce,
- PSP – procurement service providers
- TBK – Tea Board of Kenya
- UTKL – Unilever tea Kenya ltd
- WWW –WorldwideWeb

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Stud

E-procurement is the acquisition of direct and indirect products and services using the internet and new technologies to facilitate a seamless, end-to-end stream of strategic procurement activities by connecting buyers with suppliers. This is according to International Business Machines Corporation (IBM) (2012)). A properly implemented system can connect companies and their business processes directly with suppliers while managing all interactions between them. This includes management of correspondence, bids, questions and answers, previous pricing, and multiple emails sent to multiple participants.

Successful e-Procurement implementation is only possible when e-Procurement functions are totally embedded in the business process and the system is sufficiently flexible to accommodate the rapid changes in technology which are inevitable. Professor Subramanian (2006). Koorn, Smith and Mueller (2001) described three types of e-Procurement systems which are; buyer e- Procurement systems; seller e- Procurement systems; and online intermediaries.

Baily, Farmer, Crocker, Jessop & Jones (2008) also described three main processes in e-Procurement which include e-sourcing used for contractual processes and whose tools are like e-Tendering-RFQs(request for quotations) and e-Procurement processes which is used for transactional processes with tools that include market places, which use techniques such as e-catalogue. The last process is e-Payment whose tools include virtual or embedded PC(procurement cards). E-sourcing has been defined as the

process of using internet to make decisions and form strategies regarding how and where services or products are obtained.

E-Procurement plays a major role in processing and export of tea, which is necessary for organizations success. Implementation of e-procurement faces a number of critical challenges including the lack of supplier confidence, systems security, confidence in the encryption process, software integrity, password controls and audit trails, limited access by suppliers, limited e-Legislation to support transactions, limited infrastructure and web services, lack of resources to develop, implement and maintain, integration and interfacing with existing systems Jerome (2010).

### **1.1.1 The concept of e-procurement**

E-Procurement is the business-to-business purchase and sale of supplies and services through the Internet as well as other information and networking systems. It connects business houses and business processes with the suppliers by managing all the correspondence between them. Kumar & Senapathi (2012) A study by Croom and Brandon (2005), identified five forms of electronic procurement structures as public web, exchange, market place, company hub and extranet. The public web (Internet) is where buyers have the opportunity to identify potential suppliers via standard search engines (such as Google.com, Yahoo.com) or specialist trading search engines (such as kellys.co.uk). On-line search and comparison of list prices are typically used for specialist or low value purchases. Depending on the nature of the supplier's web site facility, orders may be placed on-line, via email or through the more traditional route of telephone, fax or mail.

The term 'exchange' here refers to trading sites such as the eBay, Business to consumer, e-commerce auction site and the Business to Business auction service provider, Free Markets and Synerdeal. These sites allow buyers or sellers to bid for Contracts; which in eBay's case simply involves bidding for products offered for sale by private as well as commercial sellers, whilst B2B exchanges provide reverse auction facilities (On-line reverse auctions). An extranet is a secure, often security protected, Internet link between buyer and seller. Such extranets are used primarily for shared and collaborative data – such as delivery scheduling and product design data. Pre-Internet, EDI links represent a type of extranet connection, being dedicated to an individual customer. Although there remain concerns for the security of transmission over the World Wide Web (www), extranets represents an effective means of communication between close trading partners. Croom and Brandon(2005)

### **1.1.2 Challenges of E-Procurement Implementation**

E-procurement is a direct outgrowth of the Internet's capabilities, enabling businesses to share information from many sources, including their customers, financial institutions and suppliers. It simplifies the mechanics of the order process and reduces infrastructure and transaction costs. Tremendous opportunities will be realized through e-Procurement. The opportunity to improve the supply chain will define the relationship between the buyers, sellers, and competitors. This is according to Mozeik (2003) some of the challenges that arise from e-procurement implementation are inability to integrate with existing ERP and Procurement systems, inability to on-board and support suppliers (in large numbers) and Complex and unintuitive user interface. Hubwoo (2012)

E-procurement system development and implementation is complex and frequently not fully understood. It has grown and evolved into a complex marketplace with many players offering a variety of e-procurement and business-to-business (B2B) services Croom & Brandon (2004). It is a term incorporating many aspects of electronically-assisted buying including hosting of databases, catalogue management, managing tenders and auctions on behalf of clients through to a complete outsourced procurement service. Croom & Brandon (2011)

While there is debate about how recently e-Procurement has emerged, Dai & Kauffman (2001), noted that there is no doubt that the use of the Internet in e-Procurement provides several advantages over earlier inter-organizational tools. For example Vaidya and Callender (2006) in his journal of public procurement mentioned that Electronic Data Interchange (EDI) has been providing automated purchasing transactions between buyers and their suppliers since it was launched Office of Government Commerce (OGC) (2002).Enterprise Resource Planning (ERP) followed in the 1970s, and then came the commercial use of the Internet in 1980s.

It was only in the 1990s that the World Wide Web - the multimedia capability of the Internet - became widely enabled and provided the essential resource for the automation of procurement OGC(2002).E-procurement practices are necessary to be understood well by the concerned organization. According to PricewaterhouseCoopers e-procurement practices includes enhancing accessibility; Ensuring legal certainty and confidence, removing barriers to cross-border tendering and promoting transparency & accountability.Bausà, Liljemo, Rodriguez & Snaprud (2013)

### **1.1.3 Multinational Tea Companies**

Kenya is Africa's leading tea producer and fourth in the world behind India, China and Sri Lanka. Black tea is the country's leading agricultural foreign exchange earner. It has more than 110,000 hectares of land under tea which is grown mainly in the highlands where there is adequate rainfall and low temperatures. The tea industry is divided between small farms and large estates. The small – scale sector, with more than 260,000 farmers, is controlled by the Kenya Tea Development Agency (KTDA). The estates, consisting of 60-75 private companies, operate their own factories. Tea is the country's leading foreign exchange earner at the moment, with export earnings standing at about Kshs 110 billion up from Kshs 33 billion in 2003, a 230 per cent increase. Tea output accounts for about 11 per cent of agriculture's share of Kenya's Gross Domestic Product (GDP).

In addition to generating vital foreign money, this industry employs millions of laborers in plantations, processing factories, sales and marketing avenues and beverage service industries. Charhai.com (2014) There are three multinational tea companies in Kericho County, Kenya, with Unilever tea Kenya ltd (UTKL) owning a total of 8,250 hectares under tea while James Finlay's is the second with 5,554 hectares of tea. KHRC (2008) Williamson tea is the next which is a family owned business. Attached is a list of multinational tea companies in Kenya, Kericho County.

### **1.2 Research Problem**

Procurement and stores department is always considered the most important department to every organization because of its contribution to organizations efficiency and effectiveness. Most companies continue to lose millions of shillings



and time in purchasing various products. This has forced them to opt to e-procurement in order to cut off on cost among others.

Tea industry in Kenya is undergoing stiff competition with three multinational companies located within Kericho County. This has seen them diversify their products and increase their customers' network. In order to do these, it's necessary to implement e-procurement to accommodate the full network of their customers both internally and across the borders. Despite this, they are still experiencing slow adoption of e-procurement.

Some past studies reports e-procurement implementation having no challenges, while others report challenges like the software is too costly and can only be afforded by the largest companies or the software was too hard to implement, challenges associated with legal infrastructure Jerome (2010), supplier enablement Filipe (2009), technological integration and security issues Barceló (1999) . This has seen most e-Procurement initiatives never delivering on their promise or fail completely. Based on this reports, it is therefore of interest to find out the challenges of e-procurement implementation among the three multinational tea companies in Kericho county, Kenya.

Several studies have been undertaken by various researchers on e-procurement implementation for example: Orori (2011) carried out a study on factors that influence the introduction of e-Procurement on retail industry: A survey of retail chain supermarkets in Kenya and found out there is a lot of resistance to change. Muthigani (2011) studied e-procurement implementation; a case study of selected firms in Kenya; Kingori (2013) researched on effect of e-procurement on supply chain

management; a case study of teachers' service commission while Aini & Hasmiah (2011) studied on E-procurement implementation: a case of the government of Malaysia.

Despite all this studies it is however not clear that any of this past studies on e-procurement implementation has focused on challenges that the organizations are facing in an attempt to implement e-procurement in Kenya's tea sector. This research therefore seeks to address the existing gap while focusing on the multinational tea companies in Kericho County. It seeks to find the answer to the following research question; what are the Challenges of E-Procurement Implementation among Multinational Tea Companies in Kericho County, Kenya

### **1.3 Research objective**

The Main Purpose of Carrying out this Research is to find out the Challenges of E-Procurement Implementation among Multinational Tea Companies in Kericho County, Kenya

### **1.4 Value of the study**

The findings of this research study are of great significance to the existing body of knowledge related to the field of study. The research findings contribute to the literature through an exploratory study on the challenges facing e-procurement implementation.

The findings are of benefit to the stakeholders since it enables them to address current challenges affecting implementation of e-procurement and therefore streamlining procurement activities in the multinational tea companies in Kericho County. The

findings also benefit the general public by enabling them to get value for their money from quality service delivered to them by the Tea sector. Full implementation of e-procurement enables the Tea sector to transact business smoothly with other stakeholders

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter presents the literature of the main review of the past research studies done on this area, the critique of the existing literature and the conceptual framework.

### **2.2 Theoretical perspective**

According to Callender and Schapper (2003), E-Procurement is the purchase of goods or services electronically. It is an integral part of an overall strategic procurement plan in the current business environment. The plan includes, but is not limited to strategic sourcing or supplier rationalization, supply chain automation, and participation in one or more market-places. The advent of the Internet as a business systems platform has been a catalyst for major changes in the operation and status of organizational procurement.

Croom & Brandon-Jones (2007) found out that early e-procurement forecast significant improvements in procurement costs, improved status of the purchasing function, and changes the Structure of supply markets Anne(2008).A study by Hardy, Susan, Williams and Catherine (2006) found out that the National e-Procurement Research Project Australia (NeRPA) was initiated in 2003 in response to ongoing interest among the business and academic communities about the current status of e-procurement in Australian industries and organizations.

The broad aim of the project was to assist Australian organizations to plan for, implement and assess the impact of Information System enabled innovations in

procurement. The key element of the project was a series of national surveys of e-procurement adoption and implementation NeRPA (2003). The focus was on the use of e-procurement to enable value creation and collaborative commerce. This broader, business oriented view encompassed a wider span of activities ranging from strategic sourcing and supplier relationship management through to settlement and payment of goods Knudsen (2002). The focus was on both the strategic and operational aspects of e-procurement.

### **2.3 Components of e-procurement**

Electronic catalogs contain detailed information on products or services available for sale. There are three types of catalogues that address various buyer needs: Product catalogs: Contain data on tangible items such as office products, medical supplies, rolls of steel, etc. Service catalogs: Offer professional service “intangibles”. Commodity-specific catalogs: Offer specific product families or groups such as chemicals, paper, or other raw materials.

E-procurement Processes; existing procurement processes need to be “electrified” end-to-end to support the entire e-procurement process. This includes requisition and order management, real-time tracking and receiving, online order fulfillment, automatic billing, invoicing and payment, as well as workflow management, commerce transactions, and reporting and analysis tools. User maintenance includes defining the individuals authorized to use the e-procurement system, how these users will be enrolled, and how to provide them access to the trading community. This component serves as the foundation for managing the complex buyer-supplier relationships that will occur within the marketplace.

Establishing Buyer/Seller Relationships; this component has two phases: managing supplier relationships and managing pricing. Buyers and sellers may be linked based on their previous buying relationship or based on the buyer's unique needs. Billing Management; E-procurement revenues are generally based on transaction fees. A billing management system will calculate usage charges and generate and distribute statements or invoices to buyer-seller members of the e-procurement network. Suppliers may also use the billing system to calculate ordering charges or to distribute operating costs for specific orders. These functions must directly interface with back office invoicing systems to automatically generate bills.

Price Establishment is for establishing Effective pricing to enables buyers to negotiate the best possible deals and sellers to liquidate excess inventory. Data Transmission is for transmitting data over the Internet involves two facets: messaging agents and security. System Management; Maintaining an e-procurement system involves configuring and monitoring performance usage, average response time, transaction sources, and traffic patterns.

## **2.4 Challenges Facing Implementation of e-Procurement**

The past research studies have identified challenges faced in the implementation of e-procurement which included; challenges associated with strategic initiative, legal infrastructure Jerome (2010), supplier enablement Filipe (2009), technological integration and security issues Barcelo(1999). One challenge is to realize that the Internet is not the strategy but rather the tool for developing e-procurement.

### **2.4.1 Supplier Enablement**

According to research by Aberdeen group (2007), it was discovered that supplier enablement is one of the top three challenges for e-procurement implementation. Suppliers do not fit into organizational plans or may want to do things their way National e-Procurement Project (2004). This may be because organizational processes and systems do not match those used by most of their other customers or because organizational business is insufficient to justify organization's investment in the system.

Supplier enablement is becoming a bigger challenge because forcing suppliers to adopt organizational preferred trading method can be problematic, particularly if there are no alternatives readily to hand Filipe(2009). Most suppliers are not E-procurement enabled because they are not ICT compliant. Moreover, complex purchasing cannot be put in place without considerable personal contact between the parties concerned Lysons (2003).

According to Tan, Felix & Ter (2010), successful e-Procurement system is required to have suppliers willing and able to trade electronically. A study conducted by the AGIMO (2005), showed that supplier adoption is important to the overall success of an e-Procurement program. The study concluded that the more suppliers in the system, the more inclined buyers will be to use it. If suppliers are not correctly involved, then a low adoption rate can constrain users from leveraging the full associated capabilities from e-Procurement solutions.

The lack of a critical mass of suppliers accessible through the organization's e-Procurement system might limit the network effects that underlie these technologies,

delaying the acceptance and adoption of the solution Paulo (2009). According to a study by Lin, Huang, Jalleh & Tung (2010) about the adoption of e-commerce by the health care organizations in Australia, there were complains about loss of interpersonal relationships with suppliers and customers via the use of e-procurement systems.

Therefore, those organizations that had fewer problems in adopting and implementing e-procurement systems were those that had better communication with key stakeholders throughout the entire supply chain and had listened to their concerns. Several interview participants also mentioned that having effective supply chain management in their organizations was not good enough. Benefits only would come about if these management processes could be extended to the suppliers. Some participating health care organizations had some difficulties or simply failed to integrate their e-procurement system with other functions throughout the supply chain.

Most did not have an IT strategy to integrate their e-commerce with other systems. For example, many health care organizations, such as hospitals and pharmaceutical companies, had purchased their own IT/ e-procurement systems; therefore, it was not surprising to see that their systems within the same organizations were unable to communicate, let alone between hospitals or different health care organizations across the entire supply chain. Lin et al (2010)

Vendor/supplier support also can play a critical role in successful adoption and implementation of e-procurement systems for organizations. Case study results revealed that while e-procurement systems' vendors/suppliers were closely involved



in the decisions leading to funding of the project, there was a general lack of interest from the vendor once the systems were purchased and implemented. For example, a significant number of organizations mentioned that it often was difficult to get the various e-procurement software and hardware vendors/suppliers and external consultants to resolve software problems. Effective coordination and communication among the organizations, various vendors/suppliers, and external consultants were noted as being essential. Lin et al (2010)

In the early days of e-procurement, buying enterprises and solution providers underestimated the time, effort, and resources required to enable suppliers to transact business electronically. Though tremendous progress has been made in supplier enablement, all involved parties – end users, suppliers, and solution providers – continue to work to make enablement as simple and cost effective as possible. A survey by Aberdeen group (2005) identified various approaches applicable in supplier enablement with their benefits and trade-offs as buyer managed approach, supplier managed approach, Supplier network approach and Alternative approach.

Buyer-managed approach uses aggregated catalogue of suppliers and the buying organization has control. The buyer incurs all the cost and has limited supplier population. Supplier- Managed approach is the where Buyers access product information through the supplier's site. Here, the usability of the product information can be limited and the buying organization loses control. The advantage is that Leverages industry standard XML schemas to provide maximum control over product data.

Supplier network approach is where Buyers pay subscription fee for access to customize version of suppliers catalog. The advantage is that it provides Single point of integration for product and transaction content management. Not all suppliers in the network are relevant to all buying organizations. Another approach is the Alternative approach where the Supplier portals Smart Forms. It is best for relatively complicated, non-catalog items and does not provide the inherent benefits of machine-to-machine communication.

Individual end users and entire business units naturally resist any change in business processes that takes away buying power and buying flexibility. Over the past few years, user adoption has increased at essentially the same pace as the increase in suppliers enabled. With more products and suppliers on the e-procurement system, users have less reason to try to circumvent the system. Still, end users report that several factors continue to hold back user adoption, including inadequate representation of spending categories within the system, inconsistent purchase requirements, procedures, and supply bases by site or region, and a lack of executive mandates or policies to drive adoption and system compliance. Best Practice enterprises have worked on user adoption for years, and many supply executives at these enterprises have become leading “sellers” of the e-procurement system to end users. Aberdeen group (2005)

### **2.4.2 System Security**

System security is another challenge that hinders the implementation of e-procurement. The perceived challenges are mainly related to technical issues such as lack of information from the technology provider when new versions of the system

are launched. Anne, Åsa & Esmail (2008) According to Bell (2001), in 1999, 59% of companies that were interested in adopting e-procurement cited security as the key barrier.

There are associated risks and challenges in adopting e-procurement, most of which are related to network security issues. There are just so many people outside there that are ever on the prowl, looking for the slightest opportunity to make money from the unwary users of the Web. Sometimes the motive may be to interfere with the business of the competitor, through the Internet. Traditional threats include viruses, worms and Trojans, which can be used to compromise business information confidentiality and integrity, as well affecting the network availability.

The mode and nature of the threats and attacks are quite dynamic, tending always to target at the vulnerabilities in the most widely used applications. Applications like e-mails, instant messaging, spam, etc, may appear harmless to many organizations but these are being used quite successfully to compromise e-procurement security. Shwan(2006)The traditional protections based on firewalls, VPNs, antivirus software, etc, are not enough.

Besides the architecture must be designed and implemented in such a manner that it is dynamic in terms of the architecture being both scalable and adoptable. A layered defense approach provides the best protection result in a three-tier scenario. Specific details on security at each tier must take in cognizance the likely attack and threat scenarios. Client-side and server side security details and requirements are similar in some aspects, but there are certain glaring differences in information security requirements. Shwan (2006)

Also according to Shwan (2006), information stored in the client computer system should be protected to prevent unauthorized access, disclosure, or manipulation of the stored information. This protection needs be both physical and software based. A number of applications are now supporting biometrics as a physical access technology that provides better authentication. Host hardening and the use of secure access controls can greatly enhance client side security.

Repudiation property of the information must be maintained to avoid a customer from disowning a transaction. The use of digital signatures and incorporation of encryption-based approaches when carefully selected and implemented can greatly minimize non-repudiation type of security attacks Hall(2006). Major online security threats that impede implementation of e-procurement include eavesdropping by sniffer programs, software backdoors, spoofing, and denial of service. Dillard (2001)

Issues of privacy and authenticating the identities of the parties involved in e-commerce transactions are also among foremost societal concerns of businesses and consumers. According to the Washington Post, 90 percent of Web sites fail to comply with basic privacy principles. In monetary terms, Forrester Research showed that, due to consumers' privacy concerns, e-commerce companies lost some \$2.8 billion in the last year Escalante (2003). Lin et al (2010) found that some health care practitioners related challenges of e-procurement to disaster recovery and security. They emphasized the importance of having a backup/alternative e-procurement system and IT disaster recovery and data security contingency plans in case of system failure or other security issues.

According to Saeed and Leith (2003) security risks results from unauthorized penetration of trading platforms and failure to protect transaction related data while being transmitted or stored; and privacy risks arise from inappropriate information collection and information transparency. There are also issues on lack of adequate security measures to protect data; and trust issues between buyers and sellers. Kheng and Al-Hawandeh (2002) investigated the adoption of e-procurement in Singapore and presented stumbling blocks to this initiative from the point of view of Singaporean firms. First, there was concern about security and privacy of procurement transaction data. Technical difficulties related to information and data exchange and conversion such as inefficiencies in locating information over the internet using search engines and the lack of common standards that get in the way of the easy integration of electronic catalogs from multiple suppliers.

### **2.4.3 Cost Implications**

The inability to justify costs/benefits as an inhibitor for adoption focuses attention to broader considerations relating to benefits management and value creation in systems development in that benefits do not necessarily reside within the IT domain but incorporate changes in wider organizational activities; requiring changes to be identified and planned for and incorporate varying stakeholder expectations and roles. Tiernan & Peppard 2004; Dhillon (2005)

The challenge is that in a capital-tight environment, cost of acquisition and fielding of e-procurement system can be prohibited software licensing and enterprise findings can run in millions of dollars depending on the size of the organization. According to Australian national survey 2006, there is considerable high cost of acquiring and

managing inter-organizational information management systems, other challenges to implementation of e- procurement as with any other new system fielding is push-back from users.

Both internal users and even vendors can create friction and create the change. For leaders in an organization it is critical to prepare both internal customers and actively communicate with vendors to ensure that they are on- board with the program. In addition electronic procurement is still growing and changing. Hosted solutions are coming up into being referred to as procurement service providers (PSP) that provide externally hosted procurement systems. Williams & Hardy (2006)

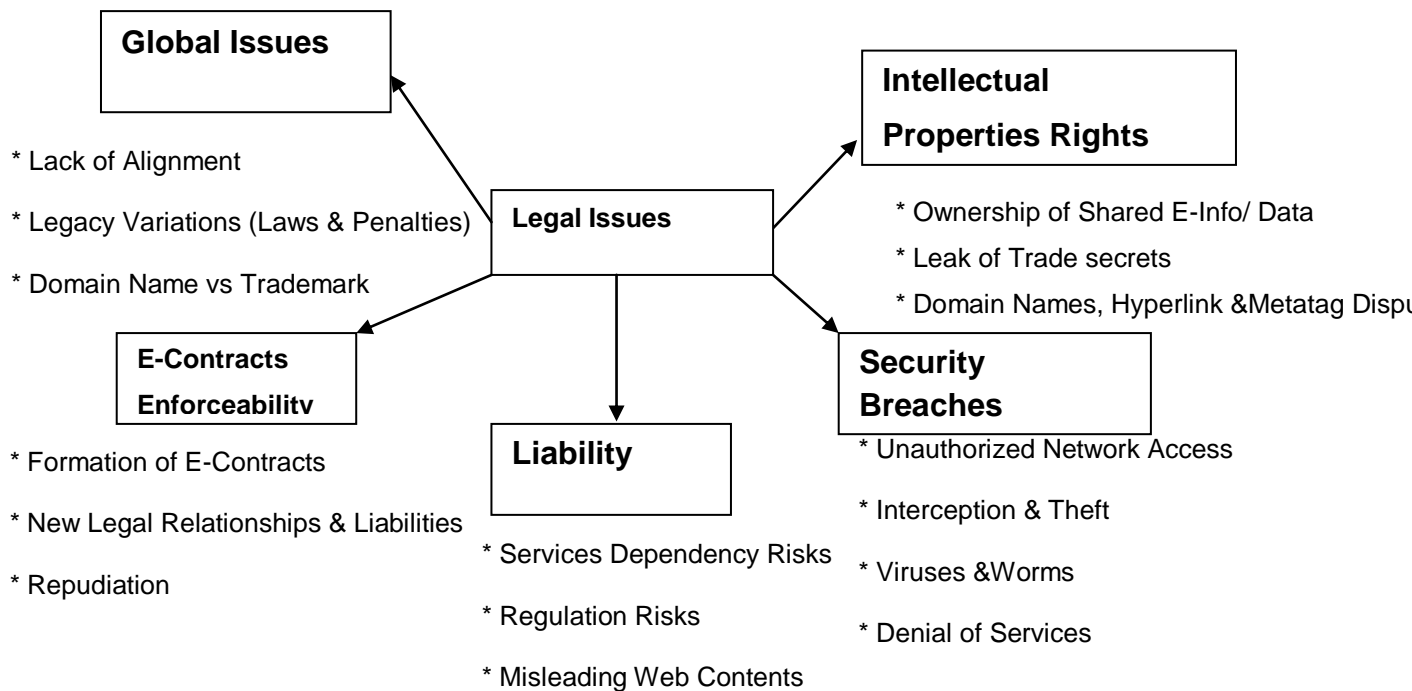
The cost of acquisition and fielding of e-procurement system is prohibitive. Software licensing and enterprise fielding cost run from \$ 200,000 to \$4,000,000 depending on the size of the organization Bourque (2006). The costs include the purchasing license rights and maintenance from software vendors. It is necessary to understand other major cost elements, such as implementation, catalogue and marketplace. Initial costs are the costs incurred by an organization to implement an e-procurement application, include the costs of system installation, initial training, and consulting.

Ongoing costs are the total costs associated with the long term support of an e-procurement solution, including annual maintenance, additional consulting and e6e7ongoing training. Gullo (2006) The most common reasons provided by organizations that have no current plans to implement e-procurement are the high costs of implementation. Hardy et al (2006)

## 2.4.4 Legal Infrastructure

According to a Seng and Hwee (2003), Legal issues relating to e-procurement could be categorized mainly into Global Trading, Contract Enforceability, Liability Risks, Security Breaches and Intellectual Properties Protection (IPR)

**Fig 2.1 Potential Legal Issues of e-Procurement in the Construction Industry**



**Source: Robert (2007).**

The legal issues involved were identified as the top most barriers for web-based e-procurement Eadie et al (2007). Legal issues relating to e-procurement in the construction industry could be categorized mainly into; Global Trading, Contract Enforceability, Liability Risks, Security Breaches and Intellectual Properties Protection (IPR). Williams(2006) According to Barcelo (1999), legal difficulties are one of the main barriers to e-procurement. The difficulties highlighted were: lack of specific legal regulation, different national approaches, and validity and enforceability problems. Similar sentiments were expressed by Pena & Choudary (2001).

According to Eadie, Perera, Heaney & Carlisle (2007), legal validity of exchanges of information is considered a barrier in implementation of e-procurement system. E-procurement is not well established in emerging countries because of legal infrastructure barriers. Karaman & Yamamoto (2007)

Confidentiality issues are magnified with the use of IT as leakage of digital information is easily done, for instance forwarding emails and copying e-documents. This may have serious impact such as mistrust and financial loss on a company. For instance, trade secret, contract negotiation and other exchange of confidential information transmitted across the Internet are subjected to unauthorized access and disclosure, and other security issues. Much organization fears that sharing information will expose them to risks. Seng & Hwee (2003)

Escalante (2003) argues that although the growth of online transactions (particularly credit-based) has relied to some extent on trust, it has however raised the issue of the legality of electronic transactions. It implies equating digital signatures with manual signatures in the traditional contracting contexts. In reality, to apply the term signature to what can be performed using (asymmetric) cryptography technology is simply inappropriate and misleading. Winn(2001) But although digital signatures have acquired legal status, the legal definition of "digital signatures" is proving very difficult to map onto online security technology functions.

Legal liability is the duty of care and responsibilities one owes to another. One may be sued or have to pay for damages if one does not perform that duty of care. In the survey conducted, the construction players (CPs) were most concern over the legal relationships and liabilities issues (mean 2.21) while the Application service providers



(ASP) ranked it second (mean 2.50). The contractual terms and liabilities between parties such as the ASPs and CPs did not have any precedent. Thus the contract drawn may be biased or may have omitted certain clauses which are overlooked due to their inexperience in this new area. For instance, erroneous information provided by the ASP to a subscriber may lead to financial loss. Seng & Hwee (2003)

However the former may avoid liability by using an 'exclusion clause' in the contract, stating it has no responsibility for errors or omissions. For instance, the Singapore's Housing Development Board (HDB), a service provider, protects itself by disclaiming any warranty and limiting its liabilities using the following clauses in its User Agreement: 'HDB makes no warranty that the Services will meet the User's needs or requirements, or that the Services, software or information provided will be uninterrupted, timely, accurate, reliable, secure or error free.' Such one-sided clause may be unfair to the subscriber who paid the ASP for its services. However, the validity of such clause varies in different countries. This poses a complex issue arising from a contract created via the Internet for example which country's legal jurisdiction should be enforced in the event of a dispute? Seng & Hwee (2003). Another point to take note is that CPs had to protect their clients' e-documents to prevent being sued for negligence in safekeeping and maintaining the confidentiality of their clients or partners' confidential information.

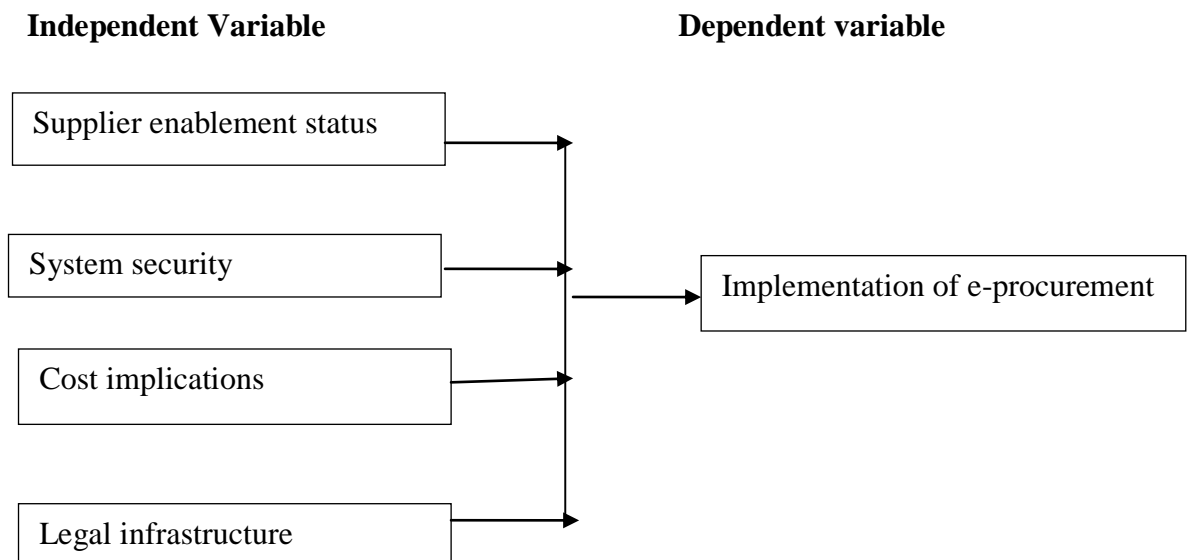
#### **2.4.5 Insecurity in E-Transactions**

Shared systems, shared network resources or web servers that are commonly used are subjected to theft, virus and worm attacks. Hence this has created difficulties in controlling access to a computer which contains confidential information and hence

putting the integrity of the information at risk. These attacks can be either external (hackers) or internal (employees, partners and clients). There are also cases where database of credit cards information is being hacked or unauthorized persons gaining access to sensitive information from systems which are supposed to be secure. Seng & Hwee (2003)

## 2.4 The Conceptual Model

**Figure 1: Conceptual framework**



**Source: Researcher 2014**

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

The aim of this chapter is to provide the pathway through which the objectives of the study were achieved. It contains the research design, target population, data collection instrument and data analysis.

### **3.2 Research Design**

This study employed descriptive research design to assess e-procurement implementation in Kenya's tea industry. This design seeks to find out the perception of employees on challenges encountered in e-procurement implementation and its use by multinational tea firms in Kericho County, Kenya. Therefore Cross sectional census survey techniques were used. According to Creswell (2006) cross-sectional survey allows same variables measured on one occasion for each population unit at a specific point in time.

### **3.3 Target Population**

Target population refers to the entire group of individuals to which the researcher is interested in generating conclusions. This study Targeted 9 individuals from each of the three multinational tea companies in Kericho County. The heads of procurement and stores department and employees were targeted.

### **3.4 Data collection**

Both Primary data and secondary data were collected for the study. Primary data was collected from Employees who make use of e-Procurement applications on their day

to day activities since they provide first hand information. Secondary data was collected from company annual reports on e-procurement, company minutes, cost reduction reports and other company special reports. Questionnaires were self administered to the head of departments and two other employees under procurement and stores department of the three companies. It consisted of both open and closed ended questions. According to Mugenda and Mugenda (2003), the open ended or unstructured questions permit greater depth of response from the respondents while the closed or structure questions are usually easier to analyze. The questionnaire was chosen because the data is easy to obtain and is directly provided by the users. Questionnaire allows greater uniformity in the way questions are asked, ensuring greater compatibility in the response. Interview guides was also used to probe questions.

### **3.5 Data Analysis**

The data was analyzed using both qualitative and quantitative techniques. Qualitative data was analyzed using content analysis. Quantitative data was analyzed using descriptive statistics; mean and standard deviation with the help of Statistical Packages for Social Sciences (SPSS) tool and presented inform of tables. Inferential statistics with the help of linear regression analyses tool was also used. The output was presented in graphs, charts and tables. Interpretations will be done based on the objectives of the study and the research questions. Factor analysis was conducted to establish the main challenges in implementing of e-procurement. Descriptive statistics was used to analyze data.

The following linear regression analyses model was used.

**Equation 1: Regression Analyses Model**

$$\gamma = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Where:

$\gamma$  – Successful implementation of e-procurement

$\alpha$  – Constant

$X_1$ ,  $X_2$ ,  $X_3$  and  $X_4$  – Cumulative scores for Cost, legal infrastructure, security and supplier enablement respectively

$\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$  – Regression coefficient for Cost, legal infrastructure, security and supplier enablement respectively

The equation was to help to find out the extent of e-procurement challenges among Multinational tea companies in Kericho County, Kenya.

## **CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION**

### **4.1 Introduction**

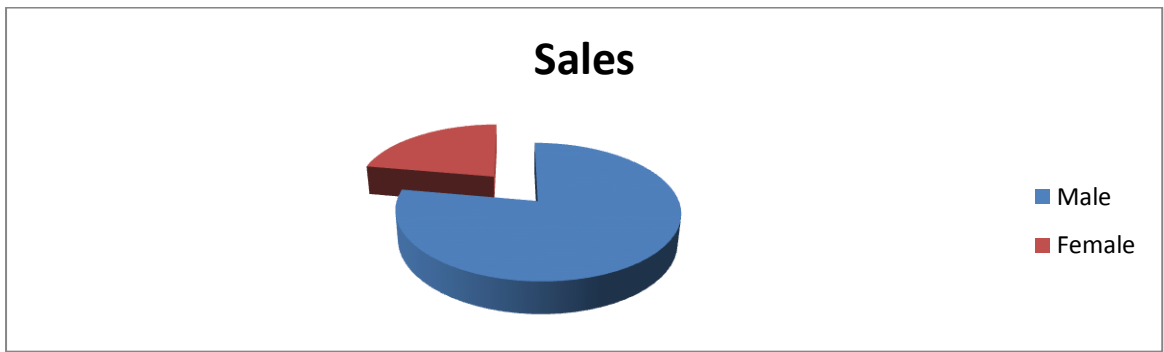
This chapter presents the analysis of data collected in the field, presentation of the same data, charts and figures and interpretation of the same data quantitatively. The study investigated the challenges encountered in implementation of e-procurement by multinational tea companies in Kericho County. This was in the light of the fact that there has been slow adoption of e-procurement in tea firms in Kenya's tea sector. The data collected was analyzed using measures of central tendency and the results presented in tables.

### **4.2 Respondent Characteristics**

#### **4.2.1 Gender of the Respondents**

Each of the respondents was requested to indicate their gender as one of the key attributes of mapping out respondent's characteristics. Their responses were as provided in figure 2 below:

**Figure 2: Gender**



**Source: Survey data (2014)**

From the analysis majority of the respondents (77.7 %), were male while 22.2 % were female. This shows that majority of the employees working in procurement related functions are male.

#### **4.2.2 Age Bracket of Respondents**

The next attribute to be evaluated was the age distribution of respondents and the outcome was as presented in table 1 below

**Table 1: Age of Respondents**

<b>Age Bracket</b>	<b>Count</b>	<b>Percent</b>
20-25 Years	1	11.1%
26-30Years	1	11.1%
31-35 Years	3	33.3%
36-40 Years	3	33.3%
Over 40 Years	1	11.1%
<b>Total</b>	<b>9</b>	<b>100%</b>

**Source: Survey data (2014)**

It was evident from the analysis that Majority of the respondents were aged between 30 – 40 years. Thirty three percent (33.3%) were in the 31-35 years and 36 – 40 years

bracket, while those between 20 and 30 years and above 40 years represented only 11.1%. there is no effects of age on e-procurement implementation but this information is necessary to find out the age distribution of the respondents and the findings shows that there is a fair distribution of employees in terms of age. Both the young and old are implementing e-procurement.

### 4.2.3 Level of Education Attained

The respondents feedback on the highest level of education attained are as presented in table 2 below:

**Table 2: Level of Education**

Highest Level of Education	Count	Percent
Certificate	2	22.2%
Diploma	4	44.4%
Degree	2	22.2%
Higher Diploma	0	0
Masters	1	11.1%
Other	0	0
Total	9	100%

**Source: Survey data (2014)**

Majority of the respondents (44.4%) are diploma holders, while 22.2% were degree and certificate holders, while 11.1 % had masters. There were no respondents with higher diploma and others qualifications respectively. The level of education of an individual does not necessarily affect on e-procurement implementation but the



findings above is indicative of a fair distribution of skill and qualification levels of staff expected in most agricultural sectors.

#### 4.2.4 Work Experience

To establish the respondents' level of understanding of e-procurement systems, they were requested to indicate the number of years they have worked for the tea firms and their response were as presented in table 3 below:

**Table 3: Work Experience**

<b>Years Worked</b>	<b>Count</b>	<b>Percent</b>
Below 2 Years	1	11.1%
Between 3 - 5 Years	4	44.4%
Between 6-10 Years	3	33.3%
11 Years and above	1	11.1%
<b>Total</b>	<b>9</b>	<b>100%</b>

**Source: Survey data (2014)**

The results indicate that majority of the respondents (44.4%) had experience of between 3-5 years; while 33.3% have experience of between 6-10 years Only 11.1% of the respondents indicated that they had experience of less than 2 years and more than 10 years. It is necessary to find out the number of years they have worked for the firm. The individuals who have worked for more than 5 years are well informed on the procurement activities of the organization. This finding of the research more confidence since a good proportion of the respondents had a good exposure on the research objectives.

#### 4.2.5 Respondents' Terms of Service

The terms under which every respondent work for the firm was as indicated in table 4below

**Table 4: Respondents' Terms of Service**

<b>Terms of Service</b>	<b>Count</b>	<b>Percent</b>
Temporary	0	0
Casual	0	0
Permanent	7	77.8%
Contract	2	22.2%
<b>Total</b>	<b>9</b>	<b>100%</b>

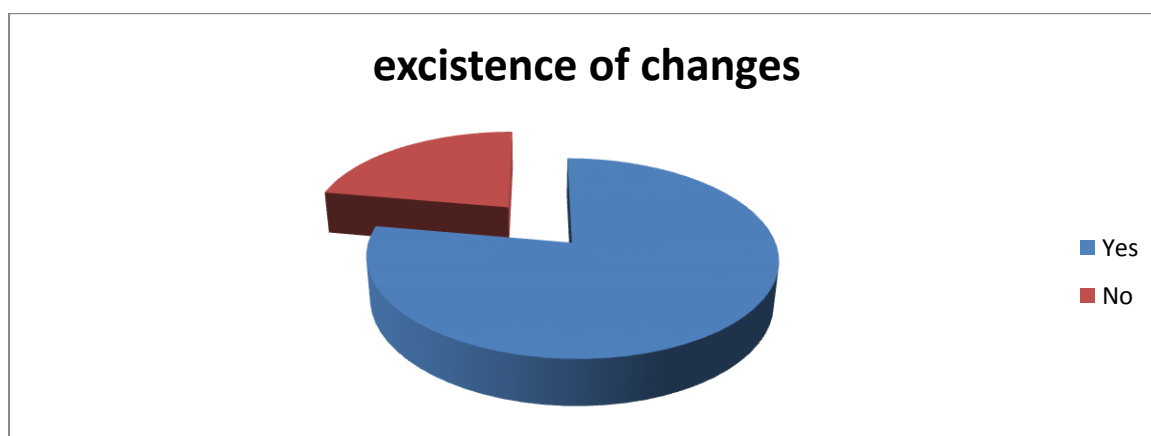
**Source: Survey data (2014)**

Majority of the respondents (77.8 %) were on permanent terms, while 22.2 % were on contract terms. None of the respondents were on casual or temporary employment. This shows that almost all the staffs in procurement and stores department are on permanent employment.

### **4.3 Challenges Faced in Implementing E-Procurement.**

The researcher sought to establish if there were challenges during the introduction and use of the current e-procurement systems in place. The outcome were as indicated in figure 3 below

**Figure 3: Existence of Challenges**



**Source: Survey data (2014)**

Majority (77.8%) of the respondents fully acknowledged that there were challenges with the implementation of the E-procurement system while the remaining 22.2% indicated otherwise. This was in line with existing literature pointing at numerous challenges that are facing the integration of IT into procurement functions in most firms operating outside the core IT infrastructure.

### 4.3.1 Level of e-procurement use and implementation

The respondents were asked to evaluate their e-procurement systems usage and the extent to which they have been implemented in their respective companies.

The outcome were as presented in table 5 below

**Table 5: Level of Implementation**

<b>Level of implementation</b>	<b>Count</b>	<b>Percent</b>
Less than 20%	2	22.2%
21-40 %	1	11.1%
41-60%	4	44.4%
61- 80 %	2	22.2%
Over 80%	0	0
<b>Total</b>	<b>9</b>	<b>100%</b>

**Source: Survey data (2014)**

A marginal proportion (44.4%) of all respondents had implemented their e-procurement within the range of between 41-60%, while 22.2%, 11.1%, and 22.2% had implemented their system to between 61-80%, 21-40%, over 80% and less than 20% respectively. This is an indication that majority were between 40 – 80% level of implementation.

The respondents were also required to indicate the type of e-procurement systems that they were currently using within their units. The responses were as indicated in table 6 below.

**Table 6: Type of e-procurement system used**

E-procurement technology	Count	Percent
Online ordering	3	33.3%
Electronic payment	4	44.4%
Electronic catalogues	4	44.4%
E tendering	2	22.2%
Electronic data interchange	5	55.6%

**Source: Survey data (2014)**

From the findings, 36 % of the respondents were using online ordering 48%, 46%, 32% and 60% were using electronic payments, electronic catalogues, e-tendering and electronic data interchange respectively. This was an indication of the low levels of e-procurement implementation levels in the tea firms involved in the study.

#### **4.4 Budget Related Challenges**

One of the key objectives of this research was to assess the extent to which cost relates challenges were impeding on effective implementation of e-procurement systems in multinational tea companies in Kericho County.

##### **4.4.1 Budgetary allocation as challenges**

For the respondents who acknowledged that they had challenges with the implementation of e-procurement they were further asked to indicate the specific cost in budgetary allocation that they thought was a challenge. Their response were as indicated in table 7 below

**Table 7: Budgetary allocation challenges**

Budgetary allocation (computers)	Count	Percent
Expensive Hardware	6	66.67%
Necessary software	3	33.33%
software Licenses	1	11.11%
Staff Training	4	44.44%
Equip Maintenance	2	22.22%

**Source: Survey data (2014)**

From the analysis hardware costs were ranked as number one with 66.67% followed by staff training, purchase of software, equipment maintenance and software licenses with 33.33%, 11.11%, 44.44% and 22.22 respectively. It is evident that initial implementation related costs were seen by the majority as key challenges to the e-procurement implementation.

The researcher further sought to establish the extent to which each of the indicated budgetary allocation were impediments to the implementation of the e-procurement systems and the results are as indicated in Table 4.3.2 below:

**Table 8: Extent of Budgetary allocation challenges**

Budgetary allocation	Very High	High	Average	Low	Very Low
Expensive Hardware	4(44.4%)	3(33.3%)	2(22.2%)	0(0.0%)	0(0.0%)
Necessary software	5(55.6%)	3(33.3%)	1(11.1%)	0(0.0%)	0(0.0%)
software Licenses	4(44.4%)	4(44.4%)	1(11.1%)	0(0.0%)	0(0.0%)
Staff Training	3(33.3%)	4(44.4%)	1(11.1%)	1(11.1%)	0(0.0%)
Equipment					
Maintenance	5(55.6%)	3(33.3%)	2(22.2%)	0(0.0%)	0(0.0%)

**Source: Survey data (2014)**

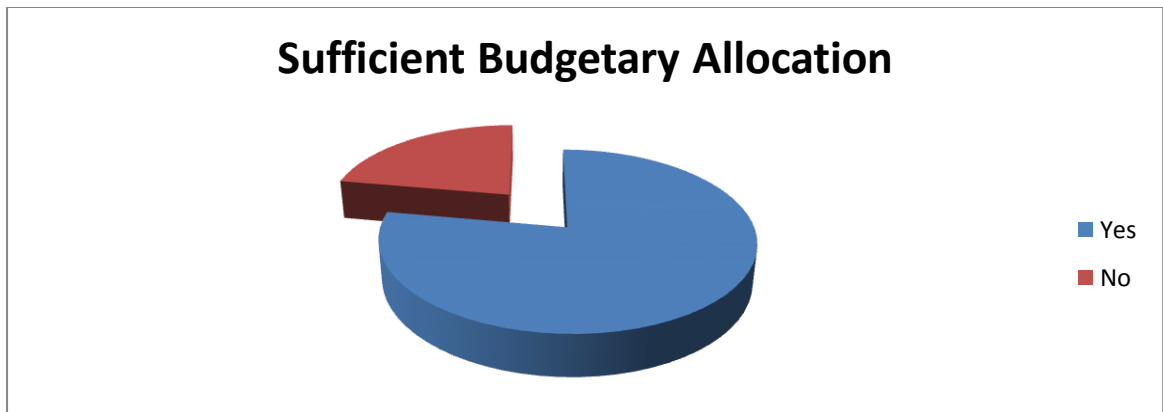
For those who had identified hardware costs as a challenge, 44.4 % indicated to have a very high influence while 33.3% and 22.2% gave it a rating of high and average

respectively. Access to necessary software received 55.6% rating as a very high impediment while 33.3% and 11.1% rated it as high and average respectively. Access to necessary software and accompanying licenses was rated by 44.4% and 10% as very high, high and average respectively. Staff training was found to have a very high deterrent effect on implementation of e-procurement by 33.3% of the respondents while 44.4% and 11.1% rated as high, average and low respectively. Equipment maintenance was rated by 55.6% of the respondents as very high, 33.3% gave it a rating of high and average respectively.

#### 4.4.2 Sufficient Budgetary Allocation

To evaluate further the cost challenges the respondents were requested to indicate the budgetary support they receive in implementation of the e-procurement systems, their feedback were as indicated in figure 4 below:

**Figure 4: Sufficient Budgetary Allocation**



**Source: Survey data (2014)**

Majority of the respondents (77.8%) indicated that they didn't receive any budgetary support specifically directed to implementation of e-procurement systems. Only 22.2

% were able to acknowledge receipt of financial support. This is a clear indication that cost is a key challenge to implementation of e-procurement system.

The respondents were on the same breath asked to indicate the extent to which budgetary allocation affects implementation of e-procurement systems. Their responses were as indicated below:

**Table 9: Extent of Budgetary Allocation**

Value	Count	Percent
Very High	5	55.6%
High	2	22.2%
Low	1	11.1%
No effect	1	11.1%

**Source: Survey data (2014)**

Fifty five percent of the respondents indicated that budgetary allocation affected the implementation of e-procurement systems while 22.2 % and 11.1% indicated a high, low and no effect respectively. This results fully concurs with findings in section 4.3.4 above

#### **4.5 Security Related challenges**

The second key variable was to elevate the extent to which security systems considerations was a challenge to implementation of e-procurement systems among multinational tea companies in Kericho County. The following subsections present the findings.

### **4.5.1 Security as a challenge in implementation of e-procurement system**

As to whether security considerations were recognized as a key challenge to implementation of e-procurement systems, the response were as indicated in table 10 below

**Table 10: Security as a Challenge**

Security as a challenge	Count	Percent
Yes	7	77.8%
No	2	22.2%
Total	9	100%

**Source: Survey data (2014)**

Three quarters (77.8%) of the respondents acknowledge that security consideration was a key challenge to implementation of e-procurement systems while a quarter (22.2%) considered otherwise.

### **4.5.2 Sources of security challenges**

Further the respondents were requested to identify the specific security challenges associated with the implementation of e-procurement systems and their response were as indicated below



**Table 11: Extent of Security Challenges**

Security element	Very High	High	Average	Low	Very Low
Data loss	2 (22.2%)	5 (55.6%)	2(22.2%)	0(0.0%)	0(0%)
Unauthorized Access	6 (66.7%)	1 (11.1%)	2 (22.2%)	(0.0%)	0(0%)
Impersonation	1 (11.1%)	3 (33.3%)	5 (55.6%)	1(11.1%)	0(0%)
Information Leakage	3 (33.3%)	4 (44.4%)	1 (11.1%)	1(11.1%)	0(0%)
Back up Recovery	2 (22.2%)	3 (33.3%)	4 (44.4%)	0(0.0%)	0(0%)
Hacking	1 (11.1%)	2(22.2%)	6(66.7%)	0(0.0%)	0(0%)

**Source: Survey data (2014)**

From the findings, data loss was on average rated as of high in impeding the implementation of e-procurement with a score of 55.6%. This was followed by those who rated it as very high and average with 22.2 %. Exposure to unauthorized access was perceived by 66.7% of the respondents to be a key security challenge considered, while 11.1% and 22.2% gave at a rating of high and average. Impersonation was rated by 11.1% of the respondents as a very key impediment while 33.3%, 55.6 % and 11.1% gave it a rating of high, average and low respectively. Exposure to information leakage as a result of using e-procurement system was rated by 33.3% and 44.4% to of very high and high respectively while 11.1% of them considered it equally as of average and low impediment. Chances of back up recovery for lost information were considered to be of very high consideration by 22.2% of the respondents, this was followed be 33.3% and 44.4% for high and average respectively. Hacking into key company information was considered by 11.1% of the respondents as very high, 22.2% as high and 66.7% as of an average influence in the adoption of e-procurement.

## 4.6 Legal infrastructure challenges

The third variable was concerned with evaluating the extent to which the legal infrastructure impeded the implementation of e-procurement systems among multinational tea companies in Kericho County. The key findings are as presented in subsections below:

### 4.6.1 Existence of Legal challenges

The response on the acknowledgement of legal issues as challenges to e-procurement implementations were as indicated below

**Table 12: Legal Challenges**

Existence of Legal challenges	Count	Percent
Yes	6	66.7%
No	3	33.3%
Total	9	100%

**Source: Survey data (2014)**

A clear majority (96.7%) saw legal infrastructural issues to be the key impediments to effective implementation of e-procurement systems among the multinationals. Only 33.3% did not consider it a challenge.

## 4.6.2 Legal infrastructure elements

**Table 13: Different Legal challenges**

Value	Count	Percent
Lack of Aligned Jurisdiction	2	22.2%
information Confidentiality	6	66.7%
Legal liability	4	44.4%
Repudiation	1	11.1%
Contract Authentication	4	44.4%

**Source: Survey data (2014)**

Legal issues surrounding confidentiality of information was considered a key challenge (66.7%) to using e-procurement systems. This was followed by contract authentication with 44.4% and legal liabilities. Lack aligned jurisdictions (22.2%) and repudiation with 11.1% respectively.

**Table 14: Extent to which the legal infrastructure is a challenge to e-procurement**

	Very High	High	Average	Low	Very Low
Lack of Aligned Jurisdiction	0 (0.0%)	2 (22.2%)	0 (0.0%)	0 (0.0%)	0(0.0%)
information Confidentiality	3 (33.3%)	2 (22.2%)	1(11.1%)	0(0.0%)	0(0.0%)
Legal liability	2 (22.2%)	2(22.2%)	0(0.0%)	0(0.0%)	0(0.0%)
Repudiation	0(0.0%)	1(11.1%)	0(0.0%)	0(0.0%)	0(0.0%)
Contract Authentication	0(0.0%)	0(0.0%)	2(22.2%)	2(22.2%)	0(0.0%)

**Source: Survey data (2014)**

Twenty two percent (22.2%) considered lack of aligned jurisdiction as to be a high impediment to e-procurement implementation. Chances of exposing the firm to legal issue surrounding confidentiality of information was considered by 33.3% of the respondents to be a very high challenge, while the remaining 22.2% and 11.1% considered it of high and average impediment. A legal liability likely to arise from the use of e-procurement was found by 22.2% of the respondents to be a key and high challenge. Repudiation was considered by only 11.1% to be average impediment. Authentication of contracts based on e-procurement systems was seen as a average challenge and low challenge by 22.2 % of respondents.

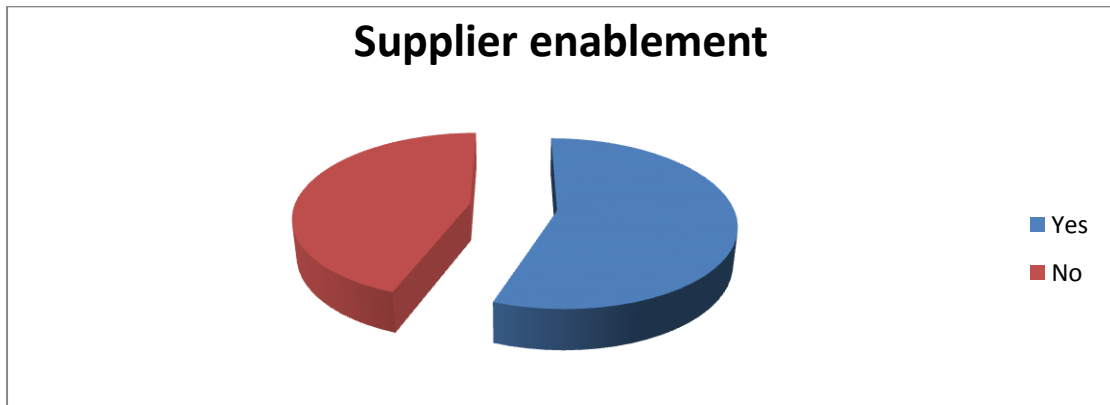
#### **4.7 Supplier Enablement**

The forth and the last variable was concerned with evaluating the extent to which supplier enablement was considered an impediment to effective implementation and use of e-procurement among the multinational tea companies in Kericho County.

##### **4.7.1 Supplier Enablement as a challenge**

The recognition of whether supplier enablement was a challenge to e-procurement implementation received the following response:

**Figure 5: Supplier Enablement as a challenge**



**Source: Survey data (2014)**

A majority of 55.6 % indicated their acknowledgement of supplier enablement as a key challenge to the use of e-procurement. Only a small fraction (44.4% indicated otherwise.

#### **4.7.2 Supplier enablement challenges**

To establish the exact elements of the supplier enablement the hinders effective implementation of e-procurement, the respondents were also requested to indicate the specific components considered a challenge and the results are presented in Table 4.6.2 below:

**Table 15: Supplier enablement challenges**

Value	Count	Percent
Internet connection	6	66.7%
Lack of system integration	5	55.6%
Lack of trained personnel	8	88.9%
Lack of computers	3	33.3%

**Source: Survey data (2014)**

Lack of trained personnel was rated as most impeding element with a rating of 88.9%. This was followed by Internet connectivity to link supplier with 66.7%. Lack of system integration was rated third with 55.6% and lack of computers and related hardware was given a rating of 33.3%.

### 4.7.3 Level to which supplier enablement is a challenge

The extent to which each of the above elements were responded to in regard to the level they are considered a challenge are presented in Table 16 Below

**Table 16: Level to which supplier enablement is a challenge**

	Very High	High	Average	Low	Very Low
Internet connection	2(22.2%)	1(11.1%)	2(22.2%)	1(11.1%)	0(0.0%)
Lack of system integration	3(33.3%)	1(11.1%)	1(11.1%)	0(0.0%)	0(0.0%)
Lack of trained personnel	4(44.4%)	2(22.2%)	2(22.2%)	0(0.0%)	0(0.0%)
Lack of computers	1(11.1%)	1(11.1%)	1(11.1%)	0(0.0%)	0(0.0%)

**Source: Survey data (2014)**

Internet connectivity to facilitate supplier enablement was rated as a very high challenge by 22.2% of the respondents, 22.2% gave it a rating of average while, 11.1% rated it as high and low impedance respectively. Lack of systems integration was seen by majority of the respondents as a very high hindrance while 11.1% saw it to have a high and average influence on e-procurement implementation. Lack of trained personnel to drive the supplier enablement process was seen by 44.4% of the respondents as a very high obstruction to the implementation of e-procurement

systems while 22.2% found it as of high and average hindrance to the implementation. Lack of computers and related hardware to facilitate the enablement of suppliers through the use of e-procurement was seen by 11.1% of the respondents as a very high, high and average challenge to implementation of e-procurement systems by multinational tea companies in Kericho County

#### **4.8 Regression Analysis**

To determine the extent and the contribution of each of the identified challenges to implementation of e-procurement among the multinational companies operating in Kericho County, liner regression analysis was performed with the level of implementation being the dependent variable while cumulative score of key elements of cost, security, legal infrastructure and supplier enablement were taken as the independent variables.

$$\gamma = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Where:

$\gamma$  – Successful implementation of e-procurement

$\alpha$  – Constant

$X_1, X_2, X_3$  and  $X_4$  – Cumulative scores for Cost, legal infrastructure, security and supplier enablement respectively

$\beta_1, \beta_2, \beta_3$  and  $\beta_4$  – Regression coefficient for Cost, legal infrastructure, security and supplier enablement respectively

The outcome of the analysis were first examined to ensure that it does not violate the key requirements of regression analysis specifically existence of multi-co linearity

among the variables. Person's correlation between the four variables was as presented below:

**Table 17: Correlation between the independent variables**

Pearson Correlation	Level of Supplier Implementation	Supplier Enablement	Legal	Security	Cost
Level of Implementation	1.000	0.409	0.575	0.506	0.552
Supplier Enablement	0.409	1.000	0.166	0.287	0.339
Legal infrastructure	0.575	0.166	1.000	0.306	0.402
Security	0.506	0.287	0.306	1.000	0.334
Cost	0.552	0.339	0.402	0.334	1.000

**Source: Survey data (2014)**

All the four independent variable were found to have correlation coefficients of 0.49, 0.575, 0.506 and 0.552 respectively with the implementation of e-procurement among the multinational tea companies involved in the study. All were above 0.3 Recommended as a minimum indication of substantial correlation Pallant (2005). The correlation coefficient between the independent variables was also examined and none were higher than 0.7. This was supported by the value of VIF in table 18 below being less than 10 the maximum allowed as an indication of multi-co linearity presence.

To evaluate the contribution of each of the independent variables in explaining the dependent variable when the variances of the other variables are controlled, standardized beta coefficient was evaluated.

The R Square Value for the model was found to be 0.557 indicating that the four independent variables; cost, legal, security and supplier enablement significantly



explained 55.7% the variance in the level e-procurement of implementation among the tea firms.

This is further supported with the study by Barcelo (1999) who identified challenges faced in the implementation of e-procurement which included; challenges associated with strategic initiative, legal infrastructure Jerome (2010), supplier enablement, Filipe (2009), technological integration and security issues

**Table 18: Regression analysis model**

<b>Model Coefficients</b>	Un Standardized		Standardized			
	Coefficients		Coefficients			
	B	Std. Error	Beta	Sig.	VIF	
(Constant)	-1.439	0.477		0.003		
Supplier Enablement	0.188	0.078	0.189	0.018	1.175	
Legal	0.380	0.084	0.363	0.000	1.242	
Security	0.327	0.102	0.255	0.002	1.218	
Cost	0.305	0.100	0.257	0.003	1.356	
	R Square				Sig.	F
<b>Model Summary</b>	Change	F Change	df1	df2	Change	
	0.557	26.695	4	85	0.000	
<b>ANOVA</b>	Sum of					
Model	Squares	DF	Mean Square	F	Sig.	
Regression	59.292	4	14.823	26.695	0.000	
Residual	47.197	85	0.555			
Total	106.489	89				

**Source: Survey data (2014)**

From the results legal challenges were found to make the biggest single contribution to the challenges in implementation of e-procurement with a beta of 0.363, followed

by cost (0.257), security (0.255) and supplier enablement (0.189) respectively. All the four variables were found to make significant contribution ( $\text{sig} < 0.05$ ). The significance of the relationship were also ascertained by the ANOVA Table below with a level of significance of less than 0.05. Thus it was evident that all the four variable for the study were key contribution to impediments to implementation of e-procurement among multinational tea companies operating in Kericho county.

## **CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECCOMENDATIONS**

### **5.1 Introduction**

This chapter takes a wider look at the overall picture of the results, gives an overall perspective of the outcome in line with the research objectives, and makes conclusions and recommendations.

### **5.2 Summary of the findings**

From the analysis of all responses received the researcher noted the following key findings. From the respondents general characteristics, most of them were male and were spread across all working ages with majority being between 36- 40 years and with working experience of between 3-5 years. To support the authenticity of the finding, most of the respondents (76%) were permanently in their terms of service indicative of the in depth participation in their day to day activities within their sections.

The preliminary element of the research was to see the use and challenges of the e-procurement system within the multinational companies. It was discovered that majority were using the system and specifically for on-line ordering (33.3%), electronic payment (44.4%), sending electronic catalogues (44.4%), e-tendering (22.2%) and the general use of the electronic data interchange platform (55.6%). As to the level to which e-procurement had been implemented in their section most of the respondents indicated a moderate level of implementation mostly ranging between 40-60%.

The first variable of the study sought to analyze the extent to which cost elements were impediments to implementation of e-procurement systems among the multinational tea companies operating in Kericho County. Hardware costs (66.67%), software acquisition (33.33%), staff training (44.44%) and hardware maintenance (22.22%) all received substantial acknowledgement as key cost related impediments to implementation of e-procurement except software licenses (11.11%) within the selected firms. The overall correlation of the cost variable with the level of e-procurement implementation was 0.552 while the standardized Beta coefficient in the regression model was significant and explained 25.7% of the variance in the model.

The second variable was centered on assessing the extent to which security related issues namely: data loss, unauthorized access, impersonation, information leakage, back up recovery and hacking were considered impediments to implementation of e-procurement among the selected firms. The entire four attributes received substantial acknowledgement where 76%, 82%, 61%, 50%, 54% and 76% respectively. The Pearson's correlation of the security with the level of e-procurement implementation was 0.506 while the standardized Beta coefficient in the regression model was significant and explained 25.5% of the variance in the model.

The third variable was concerned with legal issues that surround the implementation and use of the e-procurement system by the selected multinational firms. The overall view by the respondents gave a very high recognition (96.7%) of this element as a key impediment. Legal issues surrounding confidentiality of information was considered a key challenge (89.66%) to using e-procurement systems. This was followed by contract authentication with 85.06% and legal liabilities (77.01%), lack aligned jurisdictions (60.92%) and repudiation with 56.32% respectively. On their rating lack

of jurisdictions, legal liabilities, repudiation, and contract authentication were rated as of very high impediment while information confidentiality was rated as high. The computed correlation of the cost variable with the level of e-procurement implementation was 0.575 while the standardized Beta coefficient in the regression model was significant and explained 36.3 % of the variance in the model.

The last variable was to examine the contribution of supplier enablement as an impediment to the implementation of e-procurement among the multinational tea firms within Kericho County. Internet connectivity to link supplier was rated a most impeding element with a rating of 96.15%. This was followed by lack of system integration, lack of trained personnel and lack of computers and related hardware with 80.77%, 35.90% and 41.03 % respectively. All the four variables received a rating very highly as key impediments. The Pearson's correlation coefficient of the between supplier enablement and the level of e-procurement implementation was 0.409 while the standardized Beta coefficient in the regression model was significant and explained 18.9 % of the variance in the model.

These findings are supported by several researchers who identified that Suppliers do not fit into organizational plans or may want to do things their way. This may be because organizational processes and systems do not match those used by most of their other customers or because organizational business is insufficient to justify organization's investment in the system. National e-Procurement Project (2004) also found out that System security challenges are mainly related to technical issues such as lack of information from the technology provider when new versions of the system are launched. Anne, Åsa & Esmail (2008). According to Australian national survey (2006) cost challenges are mainly from high cost of acquiring and managing inter-organizational information management systems, other challenges to implementation

of e- procurement as with any other new system fielding is push-back from users.

Legal infrastructure challenges are lack of specific legal regulation, different national approaches, and validity and enforceability problems. Similar sentiments were expressed by Pena & Choudary (2001).

### **5.3 Conclusions**

Having set out to evaluate the challenges impeding the implementation of e-procurement among multinational tea firms within Kericho County and analyzed the finding, the researcher made the following conclusion in line with the objectives of the study. It was clear that most of the respondents found the implementation of e-procurement system to be a challenge and its adoption therefore were still below optimum levels. The entire four variables that were identified for analysis namely; cost, legal infrastructure, security and supplier enablement were found to be key impediments to the implementation of e-procurement among the firms involved in the study.

Within the cost variable initial hardware acquisition was identified to be the key followed by staff training, this outcome is clearly in line with what is perceived to be the general pattern within the IT sector despite the governments initiative of lowering relevant taxes on IT units imported into the country. The above challenge is further compounded by the fact most of the firms are not being allocated sufficient budgetary allocation to support its implementation.

Security seems to be the highest impediment to the implementation of e-procurement system within the selected firms, this was evident from their response where majority saw exposure of their valuable information becoming exposed to unauthorized parties

who may use them to harm the firm, unauthorized access and hacking into their system was evidently ranked high. All the other elements related to the ability of the system to provide secure means of carrying out e- procurement functions were notably considered to have a negative effect on the systems implementation.

The legal framework being the back bone of any business operation was also found to have a major impediment to the implementation of e-procurement systems. Legal protection of confidential information and the ability to authenticate and enforce electronic contracts were clearly the most cited challenges. Lack of support from the existing legal infrastructure and means for protecting and safeguarding business interest legally while using electronic platform was also seen to be a key challenge. This is clearly corroborated by the fact that currently the ICT policy in existence has not fully created a supportive legal framework where related issues are addressed.

The integration of suppliers into a seamless procurement platform as a key objective of any e-procurement system was also noted a key challenge. Notably internet connectivity and system integration with those of suppliers were key impediments. Lack of trained personnel and necessary support hardware were still key impediments just as was in the case of cost consideration.

#### **5.4 Recommendation**

Implementation of e-procurement systems remains a key enabler of successful execution of procurement functions especially for firms that must engage in regional and international national procurement. Full adoption and implementation is a necessity that can only be achieved through a collaborative effort among the key

players specific field. Based on this critical importance of e-procurement, the researcher therefore proposed the following recommendations.

As much as resources are always limiting, multinational tea companies should look at e-procurement as a critical investment and set aside adequate financial resources in their budgeting process. Furthermore only the initial investment in procurement of the necessary hardware, software and training of require personnel is resource intensive while the subsequent maintenance and operation cost are substantially low in comparison to the streams of benefits that will accrue from such investments.

Security matters on any IT platform are a concern for all. Despite this, investment in the necessary IT security features in any electronic system will provide substantial deterrent from any unauthorized access or manipulation. The tea companies should therefore invest in security systems within their entire IT platform that will give them the ability to minimize their exposure to such risks.

Despite the fact that most legal issues are the jurisdiction of the government of the day, the tea firms should in collaboration with other sectors with key interest in benefiting from e-procurement push for the development and enactment of the necessary legislation that will entrench e-procurement practices legally. More so there is a positive atmosphere currently supportive of IT as a key pillar for the attainment of vision 2030.

Supplier enablement may be a component that requires both the firms and its suppliers to work together and create a system that is efficient and mutually integrated. It is the researcher's recommendation that both the tea firms should look at



a means of working together as a team and build systems that will allow easier e-procurement functionality. More so each party must solicit the support of the other either by sharing related costs, IT platform and resources. Despite internet connectivity being currently a challenge it may not last due to the advent of the fiber optic cable spreading across the country. This will be a key asset to eliminating most of the challenges associated with supplier enablement.

### **5.5 Areas for further Research**

The researcher suggested further research to be done on areas related to the effects of procurement procedures on procurement performance.

## REFERENCES

- Anne, E., Åsa W. and Esmail S. (2008); *Implementation of Public e-Procurement in Swedish Government Entities: A Proceeding of the International Multi-conference on Computer Science and Information Technology*, pp. 315 – 319, ISBN 978-83-60810-22-4 ISSN 1896-7094, Sweden
- Archer, N. and Yuan, Y. (2000); *Managing Business-To-Business Relationships throughout the E-Commerce*. Internet Research, Vol. 10 Iss: 5, pp.385 – 395.
- Australian Bureau of Statistics (2006); *Business Use of Information Technology*, Perth, Australia
- Baily, P.H. (2008), *Procurement Principles and Management*; Harlow Prentice Hall, England.
- Ballou, Ronald H. (1999). *Business Logistics Management: Planning, Organizing, and Controlling the Supply Chain - 4th ed - Prentice Hall, New Jersey, USA.*
- Bausà P.O., Liljemo, K., Loozen, N., Rodriguez F., J., Snaprud, M. (2013), *A final report on e-Procurement ;Golden Book of Good Practice*; PricewaterhouseCoopers; Europe
- Bell, C. (2001). *Exploiting emerging technology corruptly in the NSW public sector*, available at [http://pandora.nla.gov.au/pan/21452/20020110/www.icac.nsw.gov.au/pub/public/pub2\\_42cp.html](http://pandora.nla.gov.au/pan/21452/20020110/www.icac.nsw.gov.au/pub/public/pub2_42cp.html), last visited May 2006.
- Callender, G. & Schapper, P. (2003), “*Public Procurement Reform in Australia: In Proceedings of International Research Study of Public Procurement* (pp. 48-61), 10-12 April, Budapest, Hungary
- Charhai.com (2014) *Tea, Kenya tea* retrieved from <http://www.Charhai.com>
- Cockatrina (2012) *James Finlays Attachment*; StudyMode.com: Retrieved from [www.studymode.com/essays/James-Finlays-Attachment-949169.html](http://www.studymode.com/essays/James-Finlays-Attachment-949169.html)
- Croom, S. & Brandon-Jones, A. (2005), “*Key Issues in E-Procurement: Procurement Implementation and Operation in the Public Sector*” A Journal of Public Procurement, Volume 5, Issue 3, 367-387

- Dai, Q. & Kauffman, R.J. (2001), “*Business Models for Internet-Based E-Procurement Systems and B2B Electronic Markets: An Exploratory Assessment.*” A paper presented at the Thirty-Fourth Annual Hawaii International Conference on Systems Sciences, Maui
- David, S.L., Philip K. & Edith S.L. (2000), *Designing and Managing the Supply Chain: Concepts, Strategies, and Case Studies.* McGraw Hill, Irwin.
- Dillard C.T. (2001), *e Commerce and Defense in Depth*; SANS Institute, 2003; retrieved from [www.iseca.org/mirrors/sans.org/](http://www.iseca.org/mirrors/sans.org/)
- Dhillon, G. (2005), *Gaining Benefits from IS/IT Implementation: Interpretations from Case Studies.* International Journal of Information Management 25 502-515.
- Eadie, R., Perera, S., Heaney, G., Carlisle, J. (2007), *Drivers and Barriers to Public Sector e-procurement within Northern Ireland’s Construction Industry, IT conference Journal*, Vol. 12, 103-120, retrieved from [www.itcon.org/2007/6](http://www.itcon.org/2007/6)
- Escalante, R.M. (2003), *Socio-Legal Issues Affecting the Use of Digital Signatures for Secure E-commerce Transactions: A Caribbean Perspective*, University of the West Indies, Trinidad
- Essig, M. & Arnold, L. (2001), *Electronic Procurement in Supply Chain Management*; Journal of Supply Chain Management
- Finlay (2014), *History*. Retrieved from [http:// www.finlays.net](http://www.finlays.net)
- Gullo, E. (2006), *Technical challenges in implementing e-procurement*, Formez; A1st High Level Seminar on E-procurement; Good Governance for Development in Arab Countries Initiative; Naples
- Hall, M. (2006), *IM Threats Steadily Evolving*; eSecurity Planet an article retrieved from [www.esecurityplanet.com](http://www.esecurityplanet.com)
- Hardy, C.A. & Williams.S.P (2005), *Public E-Procurement in Action: Policies, Practices and Technologies, Towards Electronic Democracy (TED) Conference on E-Government – Electronic Democracy: The Challenge Ahead, Italy.*
- Harry, G, (2008), *E-Procurement: Not Your Ordinary Online Shopping Experience* IBM website, Global Procurement, New York; retrieved from [www.ibm.com/procurement/proweb](http://www.ibm.com/procurement/proweb)

- Jerome O. 2010, *Transforming Procurement*; Public Procurement Oversight Authority; Action Plan for E- GP implementation in Kenya
- Julia, B. R. (1999), *Electronic Contracts: A New Legal Framework for Electronic Contracts: The EU Electronic Commerce Project*, Computer Law & Security Report, Vol. 15, No.3, 1999
- Karaman, F. & Yamamoto, G. T. (2007), *Barriers to E-Procurement Adoption: The Turkish Case*; IGI publishers, Turkey
- Kishor, V. Sajeev, A. S. M and Callender.( 2006),*Critical Factors That Influence E-Procurement Implementation Success in the Public Sector*; Journal Of Public Procurement, Volume 6, Issues 1 & 3, 70-99
- King'ori (2013), *Effect of e-procurement on supply chain management*; a case study of teachers' service commission, published MBA project, The University of Nairobi, Kenya
- Kheng, C. Al-hawamdeh, S. (2002), *The Adoption of Electronic Procurement in Singapore*, Electronic Commerce Research, Vol. 2, 61-7
- KHRC (2008), *A Comparative Study of the Tea Sector in Kenya: A Case Study of Large Scale Tea Estates*, A Report by Kenya Human Rights Commission, Kenya,
- Koorn, R., Smith, D. & Mueller, C. (2001). *e-Procurement and Online Marketplaces*. Amsterdam, The Netherlands: Compact.
- Knudsen, D. (2002), *Uncovering the Strategic Domain of E-Procurement*. 11<sup>th</sup> International IPSERA Conference, March 2002, Enschede, Netherlands
- Laub, R. (2001), *E-Procurement: Pioneers on the Way to Realizing Benefits*. Accenture Pan-European Survey 2001. Paris.
- Mendoza, L.E., Pérez, M. and Grimán, A. (2006), *Critical Success Factors for Managing Systems Integration Information Systems Management Spring* 56-75
- Mullaney, T.J. (2003), *The E-Biz Surprise*: Retrieved from Business Week, 3832, 12 May 2003.

- Muthigani A. (2011), *Electronic procurement implementation: case study of selected firms in Kenya*, Unpublished research, The University of Nairobi. Kenya
- Pallant, J. (2005). *SPSS survival manual: A step by step guide to data analysis using SPSS for Windows (Version 12) (2nd ed.)*. New York: McGraw-Hill.
- Paulo, A. & Filipe, A. (2009), *Electronic Procurement: Dealing with Supplier Adoption: Management Information Systems Management*, University of Lesbon, Palestine.
- Pena-Mora F. and Choudary K. (2001), *Web-centric framework for secure and legally binding electronic transactions in large-scale A/E/C Projects*, Journal of Computing in Civil Engineering October 2001, Vol. 15 No. 4.248-258
- Public Procurement and Disposal Act, (2005), *Laws of Kenya*
- Public Procurement and Disposal Regulations, (2006), *Laws of Kenya*
- Puschmann, T. and Alt, R. (2005), “*Successful use of e-procurement in supply chains*” *Supply Chain Management: An International Journal*, Vol. 10 No. 2, pp. 122-33
- Quibria, M. G.; Ahmed, S. N.; Tschang, Ted; Reyes, M, Mari, L. (2002), *Digital Divide: Determinants and Policies with Special Reference to Asia*; ISSN.1655-5252
- Satyanarayana J. IAS, CEO, NISG (2007), *Concepts of e-Procurement; A Capacity Building workshop under Nationale-Governance Plan(NeGP); National Institute for Smart Government (NISG); INDIA*
- Seng, K.T. & Hwee Y. W. (2003), *Legal Challenges & Strategies in E-Procurement in Construction*; School of Civil & Environmental Engineering Singapore
- Shwan J. (2006), *Wireless Communications and E-Commerce* retrieved from searchwarp.com
- Shwan J. (2006), *An article on Long champ Paris Commerce Security Challenges*, retrieved from searchwarp.com
- Tiernan, C. and Peppard, J. (2004), *Information Technology: Of value or a vulture?* European Management Journal 22(6) 609-623.

Unilever Tea Kenya Limited (2009), *Avifaunal Assessment Report*

Saeed, K.A., & Leith, R.A. (2003), *Controlling sourcing risk in electronic Marketplaces. Electronic Markets, 13,163-72*

Williams, S.P. & Hardy, C. A., (2006); *E-Procurement: Current Issues & Future Challenges*; the University of Sydney, Australia

Williamson tea website 2014, *Williamson tea company profile*, retrieved from <http://www.williamsontea.com>

## APPENDICES

### Appendix I: List of Multinational Tea firms in Kericho County

List of the three registered multinational tea manufacturers with their factories within Kericho County, Kenya as at July 2014

#### **A. Unilever Tea Kenya Ltd**

1. Chagaik Factory
2. Jamji Factory
3. Kericho Factory
4. Kimari Factory
5. Kimugu Factory
6. Tagabi Factory

#### **B. Williamson Tea Kenya Ltd**

1. Changoi Tea Factory
2. Kaimosi Tea Company Ltd
3. Kapchorua Tea Company Ltd

#### **C. James Finlay (Kenya) Ltd**

1. Kitumbe Factory
2. Koros Factory
3. Kimulot Factory
4. Mara Mara Instant
5. Saosa Factory
6. Chomogonday Factory
7. Changana Factory

Source: Tea Board of Kenya

## Appendix II: Questionnaire

### Instructions

This questionnaire is aimed at collecting information in regard to challenges of e-procurement implementation among multinational tea companies in Kericho, County, Kenya. Please tick the appropriate answer. The information provided will be treated with utmost confidence and thus will be used for academic purposes ONLY.

### SECTION: A: Background information of the respondent

1. Indicate your Gender

Male

Female

2. Which age, bracket do you fall in?

20 – 25 years

26 – 30 years

31 – 35 years

36 – 40 years

40 years & above

3. Which level of education did you attain?

Certificate level

Diploma level

Degree level

Higher Diploma

Masters level



Others

4. For how long have you been working in this organization?

Below 2 years

3 – 5 years

6 – 10 years

11 year & above

5. Indicate your terms of service.

Temporary

Casual

Permanent

Contract terms

## **SECTION B**

6. Do you face any challenges in implementing e-procurement in your organization?

Yes

No

7. If Yes, which of the following are likely to be your cost associated challenges

Budget for computer hardware

Budget for computer software

Acquisition of software license

Training of staff

Maintenance of equipment

8. Indicate from the table below the extent to which those cost associated challenges affect implementation of e-procurement in your organization?

	<b>Very high</b>	<b>High</b>	<b>Average</b>	<b>Low</b>	<b>No effect</b>
Budget for computer hardware					
Budget for computer software					
Acquisition of software license					
Training of staff					
Maintenance of equipment					

9. Do you have sufficient budgetary allocation for implementation of e-procurement?

Yes

No

10. If yes, to what extent does insufficient budgetary allocation a challenge in implementation of e-procurement system in your organization

Very high

High

Low

No effect

11. Do you face any security related challenges in implementation of e-procurement in your organization?

Yes

No.

12. If yes, which of the listed are likely to be security related challenges encountered in your organization in e-procurement implementation?

- Loss of data [ ]
- Unauthorized access to data [ ]
- Impersonation [ ]
- Leakage of sensitivity information [ ]
- Pack – up and recovery [ ]
- Hacking [ ]
- Other, specify [ ]

13. Indicate from the table below the extent to which these challenge affect implementation of e-procurement

Challenge	Very high	High	Average	Low	No. effect
Loss					
Unauthorized access to data					
Impersonation					
Leakage of sensitive information					
Pack – up and recovery					
Hacking					
Other					

14. Do you have challenges of audibility in your organization as a result of using e-procurement system

- Yes [ ]
- No. [ ]

15. If yes, how often to you do you face such challenges?

Always

Very often

Often

Occasionally

16. Do you experience challenges related to legal infrastructure in implementing e-procurement system in your organization

Yes

No

17. If yes, which of the following are likely to be challenges related to legal infrastructure facing your organization in implementing e-procurement in your organization?

Lack of alignment of jurisdiction

Confidentiality of information

Legal liability

Repudiation

Contract authentication

18. Indicate from the table below the extent to which these are a challenge in the implementation of e- procurement system in your organization?

Challenges	Very high	High	Average	Low	No effect
Lack of alignment of jurisdiction					
Confidentiality of information					
Legal liability					
Repudiation					
Contract authentication					

19. Do you have challenge related to hacking in performing business transaction electronically

Yes

No.

20. If yes how often do you face such challenges

Very often

Often

Occasionally

21. What are other challenges related to legal base infrastructure in implementation of e-procurement system in your organization.....

22. Do you face any challenges related to supplier enablement in implementing e-procurement systems in your organization

Yes  No

23. If yes, which of the following are likely to be supplier related challenges you face in your organization

- Absences of internet connection
- Lack of system integration
- Lack trained personnel
- Lack of computers
- Other, specify

24. Indicate from the table below the extent to which, these challenges affect implementation of e-procurement in your organization?

Challenge	Very high	High	Average	Low	No effect
Absence of internet connection					
Lack of trained personnel					
Lack of computer					
Lack of system integration					
Other					

25. Which of the following might be e-procurement enabling technologies use in your organization?

- Online ordering
- Electronic payment
- Electronic catalogues

E-tendering

Electronic data interchange

26. Do you have any supplier enablement strategy in your organization?

Yes

No.