

**INFLUENCE OF ELECTRONIC CUSTOMS MANAGEMENT
SYSTEMS ON SERVICE DELIVERY AT THE
ELDORET KENYA REVENUE AUTHORITY STATION**

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Award of Degree of Master of Arts in Project Planning and Management of the
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DECLARATION

This research project report is my original work and has not been presented to any other University

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DEDICATION

This project is dedicated to all my family members

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My thanks also go to my supervisor, Mr. Yona Sakaja and Dr Migosi for their consistent guidance in helping me carry out quality research, my family with their endless support. I would like to also appreciate the moral support given by my classmates who constantly kept in touch with phone calls, updating and encouraging me all the time. This research work would not have been complete without the invaluable assistance that I received from various people. I would like to thank God who has been with me and energized me during the challenging academic journey as without his love and strength, achieving knowledge would be in vain and would not have made it to this point. Lastly, I sincerely thank my family members for their morally, spiritually and financial support; your love, encouragement, guidance, and understanding will not go unnoticed.

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LIST OF ABBREVIATIONS AND ACRONYMS

AEO	Authorized Economic Operators
AES	Automated Export System
AIS	Automated Import System
ASYCUDA	Automated System for Customs Data
BOC	Bureau of Customs
CA	Capability Approach
CBA	Cost Benefit Analysis
CD	Customs Division
CRMS	Customs Revenue Management Systems
CSD	Customs Services Department
CSPs	Community System Providers
EAC	East African Community
ECS	Electronic Customs Systems
ECTS	Electronic Container Tracking System
EMCS	Electronic Monitoring Customs System
EMS	Electronic Management System
ERCA	Ethiopia Revenue and Custom Authority
ETRs	Electronic Tax Registers
EU	European Union
GCNet	Ghana Community Network Service
ICC	International Customs
ICT	Information Communication Technology
ITMS	Integrated Tax Management System
KPA	Kenya Ports Authority
KPIs	Key Performance Indicators
KRA	Kenya Revenue Authority
MCC	Modernised Custom Code
NACOSTI	National Commission for Science, Technology and Innovation
NCTS	New Computerized Transit System
NTSA	National Transport Safety Authority
OECD	Organisation for Economic Cooperation and Development
RARMP	Revenue Administration Reform and Modernization Program
RESW	Rwanda Electronic Single Window
SA	South Africa
SCT	Single Custom Territory
SERVQUAL	Service Quality
TRA	Tanzania Revenue Authority
UNCTAD	United Nations Conference on Trade and Development
URA	Uganda Revenue Authority
VASP	Value Added Service Providers
VAT	Value Added Tax
WCO	World Customs Organisation
WEF	World Economic Forum

ABSTRACT

The use of information communication and technology in Customs operations has led to rapid transformation. The traditional paper based procedures are being eliminated in favour of electronic procedures that incorporate security elements and trade facilitation measures. This research sought to determine the influence of electronic custom management systems on service delivery at Kenya Revenue Authority station in Eldoret, town. The study followed the following objectives; to establish the influence of electronic customs clearance system on service delivery at Eldoret KRA station, to identify the influence of electronic customs revenue systems on service delivery at Eldoret KRA station, to assess the influence of electronic customs risk analysis systems on service delivery at Eldoret KRA station and to determine the influence of electronic customs monitoring systems on service delivery at Eldoret KRA stations. The study was guided by Amartya Sen capability approach. The research design used was descriptive survey. Four KRA managers in charge of customs at Eldoret station and 382 clearing agents, truckers and exporters formed target population for the study. The study used Yamane (1967) sample determination formula to select 196 the clearing agents, truck drivers and exporters who participated in the research. The KRA personnel automatically participated in the research while the other respondents were selected through systematic sampling method. The data collection instruments used involved questionnaire and interview schedule. The instruments were validated and tested for reliability prior to being taken to the field. Quantitative data collected from the field was analysed by utilising descriptive and inferential statistics. Qualitative data from interviews was analysed using document analysis. Respondents agreed that introduction of e-customs had improved service delivery. However, the respondents seemed to be undecided on the contribution of e-customs revenue and clearance systems on service delivery. They seemed to agree that e-customs risk analysis and monitoring systems had higher influence on service delivery at KRA which was found to be significant ($p < 0.05$). The study recommends that KRA should regularly update their softwares; they need to educate traders and KRA employees on ethics and accountability.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The use of ICT systems has contributed to the growth and rapid expansion of economies by enhancing trade facilitation and improved processes of many organizations. ICT systems are currently used in organizations, and have become a driving force in several revenue seeking agencies globally. Distribution, transport and logistics services, efficient electronic services are imperative to electronic commerce. E-business, that is, transactions involving electronic information exchange, has been growing exponentially for the last ten years and has fundamentally changed the way in which companies and country do business. Several customs reforms have enabled countries exchange information and ideas on a real time basis, this has facilitated them to make decisions faster resulting into faster clearance of goods. Customs electronic systems enabled by use of ICT have facilitated organisations to manage their day to day activities, improve efficiency and cope with rapidly changing world (Oguta Egessa and Musiega, 2014).

Various countries across the world have adopted information communication technology to improve customs service delivery to importers and exporters (OECD, 2011; Tetteh, 2012; Msuka, 2013, Maranga, 2015). In 1991, Germany government adopted a Germany custom information system (OECD, 2012). The system was successful in reducing trade barriers like quotas and tariffs. Germany and neighbouring countries are now in a position to turn their attention to other feasible challenges influencing free flow of goods and services across European Union (EU) borders (OECD, 2011). In Asia China custom revenue service system is classified as the best with roles like transport and distribution being much reliant on

customs procedures and regulations are actually followed (Alcedo & Cajala, 2015). Consumer research agencies have graded the China customs electronic system at 78% efficiency levels. The system has led to customs simplification and harmonization with other users (Gordhan, 2007; Widdowson, 2007).

In Mexico they have adopted customs administrations systems which perform two basic functions: customs control and trade facilitation with neighbouring nations (Horvat, 2011). Mexican customs electronic system was used to prevent permeations of illicit drugs and other hazardous substances, intellectual property rights protection and tariff collection (Ameke, 2016). The system only worked for a shorter period, and resulted to a number of deficiencies. In Colombia, revenue collection is still the main function of the country's customs. In that order, reveal release prior to delivery remains the norm for their cargoes clearance course of action (Horvat, 2011). Consequently, majority of electronic customs in that country suffer from information overload on its system, with frequent delays.

In Africa, South Africa (SA) international custom electronic service system linkage has become increasingly important component in Africa business economic hub (Keen & Mansour, 2011). The systems has been of significant in the following ways; making predictions, clearing time and increasing transparency with other countries trading with (Wondemagegne, 2014). The republic of South Africa has a good internal customs electronic system that make eliminate several complains originating from clearance of goods (Igbanugo & Gwenigale, 2011). Any good customs administration and working system that can offer; immediate release based on pre - clearance reliable, timely customs clearance and creates competitive edge in attracting foreign direct investment and foreign manufacturing,

distribution, transportation and third-party logistics companies. According to African economic forum of 2012, South Africa was ranked to have the best electronic financial systems.

In Rwanda, the Revenue Authority has installed Rwanda Electronic Single Window (RESW) project which responds to the need of managing its borders more effectively and thereafter facilitate efficient cross - border trade with her neighbours. The county (landlocked) had experienced high transport and freight costs for movement of goods, inefficient processes and manual border procedures which led to increased delays and poor infrastructure that undermined the country's competitiveness. Therefore, RESW was conceived with the purpose of reducing delays in customs clearance of imports and exports into and from the country. This led to reduction in costs associated with customs clearance costs hence improved quality of service in customs clearance value chain which Rwanda was able to change (Mattoo & Schuknecht, 2001).

In Kenya, Kenya Revenue Authority (KRA) is a parastatal that was established by an Act of Parliament (Chapter 469 of the laws of Kenya) and it became operational on first of July 1999. KRA is charged with the mandate of collecting revenue on behalf of the Republic of Kenya. Its main purpose includes; collection, assessment, administration and enforcement of laws relating to revenue in Kenya. There are four functional departments and sections of Kenya Revenue Authority comprise the Customs Services Department, the Domestic Taxes Department, the Road Transport Department (some responsibilities currently being undertaken by NTSA) and the Support Services Department which comprises; new business initiatives, finance, internal audit, human resource and administration, legal affairs, research

and corporate planning, ICT, investigations, corporate & public affairs, revenue protection services and tax programmes.

Since its inception, the agency (KRA) faced a number of challenges that generally required enhancement of professionalism in revenue administration. KRA has increasingly introduced changes in its activities every succeeding year through reform strategies which are enunciated in its three - year corporate plans. KRA's second corporate plan included strategies to address these challenges and it started Revenue Administration Reform and Modernization Program (RARMP) that commenced in the years 2004 / 05 with aim of transforming the organisation into; modern, fully integrated and customer oriented organisation.

One of the reforms implemented was the use of customs electronic 'Simba' system to help in clearance procedures both internally and externally. The KRA Customs Services Department (CSD) accounts for over 45% of all our revenue collection. The department's functions are geographically scattered throughout the country and include air and sea port operations, border operations, x-ray cargo scanners, transit management, trade statistics management function (KRA, 2013). The system has been running with both positives and negatives. The same system is applied across all KRA stations in Kenya including Eldoret station.

1.2 Statement of the Problem

In current competitive business environment, organisations have to get achieve maximally through the available resources as it is a requirement. This has seen organisations taking proactive approach to systems modernisation and operations in order to increase efficiency and effectiveness of their operations. This system modernization approaches permits

organisations to upgrade and implement new electronic platforms for them to enjoy maximum benefits (Amin, 2000). Custom electronic system modernisation provides measurable improvements in efficiency and effectiveness of customs operations. This activity ensures on timely delivery and quality (UNCTAD, 2008). In developing countries there are higher expectations of customs systems to streamline operations but that may not be the case. Majority of these countries are crumbling with issues of inefficiencies, slow clearances, delayed payments and poor monitoring units.

Limited studies have concentrated on association between systems modernisation and revenue collection at the KRA. For example Njenga (2009) did an analysis on revenue productivity of the Kenyan Tax System by finding ways of bridging fiscal deficits. The study did not clearly indicate how the systems can help streamline operations. Gidisu (2012) using a case study of customers division of Ghana Revenue Authority examined the influence of automation system procedure on effectiveness of revenue collection. The study did establish a negative influence of electronic system utilisation and cost of tax administration, automation and efficiency of revenue collection resulting from poor customs administration. The 2016 Kenya Tax payers association reported an unstable operation of services in KRA customs electronic system stations across the country. The report findings did show operations efficiency was below average despite higher expectations of the customs electronic system working on service delivery. Therefore, the study sought to establish the influence of customs electronic management system on service delivery at Eldoret KRA station.

1.3 Purpose of the Study

The purpose of the study was to establish the influence of utilisation of customs electronic management system on service delivery at Eldoret KRA station.

1.4 Research Objectives

The research followed the following objectives:

1. To establish the influence of electronic customs clearance system on service delivery at Eldoret KRA station.
2. To identify the influence of Electronic customs revenue system on service delivery at Eldoret KRA station.
3. To assess the influence of electronic customs risk analysis system on service delivery at Eldoret KRA station.
4. To determine the influence of electronic customs monitoring system on service delivery at Eldoret KRA stations.

1.5 Research questions

The study was guided by the following research questions:

1. How does the electronic customs clearance system influence service delivery at the Eldoret KRA station?
2. How does the electronic customs revenue system influence service delivery at the Eldoret KRA station?
3. How does the electronic customs risk analysis system influence streamling operations at the Eldoret KRA station?

4. How does the electronic custom monitoring system influence service delivery at the Eldoret KRA stations?

1.6 Significance of the Study

The study results are relevant to the following stakeholders who rely on the customs department; Kenya Revenue Authority for making policy decisions whose overall objectives is to increase revenue collection. This study is important for KRA to its gaps in service delivery and to initiate corrective actions. Researchers on impacting knowledge on revenue collection systems, traders and business people providing them with knowledge on the challenges facing the customs department and how to assist in minimizing delays in the export and import cycles. This study may instigate other researchers to investigate more about the system which are not covered by this research and other studies. The research may be valuable for other researchers to use it as a source of reference for comprehensive and thorough study on efficiency of the public organization.

1.7 Assumptions of the Study

The researcher assumed that all respondents cooperated and provided accurate information when they were responding to research instruments administered. Secondly, the sample size chosen was adequate to enable the study draw reliable findings on the study topic.

1.8 Limitations of the Study

Limitations of the study may include the bureaucratic procedures of the KRA station that may hinder duration of collecting data. Working patterns within the KRA station was a limitation in meeting the required questionnaire response rate. As result of the busy schedule of the unit of analysis, limitation was seen in the area of getting respondents to adequately

respond to the research tools. This therefore had a negative effect on the results of the study as the required could not be provided by the respondents. To counters this the researcher ensured that respondents were given adequate time to respond to research instruments.

1.9 Delimitation of the Study

The study was conducted out in KRA Eldoret station; it covered employees of the station and various active agents servicing the station. The study delimited itself on contents related electronic customs management system and service delivery.

1.10 Definition of Significant Terms Used in the Study

Customs clearance system: this are systems designed to execute guidelines on export and import, collection of customs duties and facilitation of movement of goods, cargo and people in and outside of a specific country.

Customs electronic management system: refers to the application of ICT which support entire customs clearance process from lodging, acceptance, payments and processing of cargo.

Customs monitoring system is the system deployed to gather data through observation and recording of activities taking place in customs department.

Customs revenue system: revenue system is the entire means by which a government raises its revenue using an application of Information Communication Technology.

Customs risk analysis system: it is an ICT application system that reviews the risks associated with a particular KRA customs clearance procedures and methods.

Service delivery: this is the process of making sure operations run smoothly resulting in increased efficiency within the customs department.

1.11 Organization of the study

The study is organized into five chapters that is chapter one which comprises of back of the study, statement of the problem, purpose of the study, specific objectives, research questions, significance of the study, assumption, limitation of the study, delimitation of the study, definition of significant terms, organization of the study. Chapter two covers literature review, conceptual framework diagram. Chapter three focusses on how the study will be carried out. It explains the research design, target population-sample size, data collection tools, data analysis, data collection procedure, reliability of the study, validity and ethical considerations, research instruments and also sampling procedure. Chapter four focusses on data analysis, presentation, discussion and interpretation and Chapter five focusses on summary, conclusions and recommendations based on the objectives of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The section reviews literature from national to a global perspective based on the key variables of the study. It outlines conceptual, empirical review, theoretical framework, the conceptual framework of the study, and research gap.

2.1 Concept of Customs Electronic Management System

Customs has been history of nations. The history of customs has been identified in special ways through economic, political, social and cultural proceedings (Erceg, 2016). Customs is also a manifestation of country's level of development on which its influence is derived from economic, social and legal development. On traditional purpose, customs had been the keeper of nation's gates borders (boundaries). In this way, customs have been countries' channel of collecting revenue like customs duties and taxes (Horvat, 2011).

With time, customs has transformed as the world has been globalising (Erceg, 2016) and this has put customs administration at the centre of globalisation process. This implies that customs is a key ingredient for competitiveness of countries and companies (multinationals included) in relation to its core aim of controlling international trade across the world. The use of ICT has made customs authorities to automate their processes and this has led to improvement in efficiency of services and reduction of manual processes and validation of data that used to happen when manual methods were used (Wilmott, 2007). This has resulted to the adoption and utilisation of e-customs systems. This is an application of ICT used in public administration (Granqvist, Hintsala & Mannisto, 2012). E-customs is linked with

organisation changes and new aptitudes of public services that aim to enhance quality services provided by government agencies.

An example of customs electronic system application is the Automated Export System (AES) and Automated Import System (AIS) in sync with New Computerized Transit System (NCTS) which strive to improve customs processes (import, export and transport) which ensure that duplication does not happen at the common European Union borders. One of the purposes of AIS has been to warrant that an import function that begins in one EU member state can be completed in another member state without re-submitting the same information to the new customs point. This comprise of exchange of electronic messages related to diverse stages of operations among numerous players like traders, customs organisations and other government departments. This system (AIS) is a clear indicator of how it service delivery expected to be achieved in organizations can be enhanced through ensuring e-customs is adopted. On a study on the effectiveness of NCTS system in the European Union, Doyle and Janssens established that adoption, utilisation and implementation of NCTS resulted to financial profit for private (traders) and government (customs)) through increasing productivity. However, real Cost Benefit Analysis (CBA) has not yet been done but Doyle and Janssens showed that productivity of 30 minutes per every shipment was realised.

2.2 Concept of Service Delivery

Service delivery is a behaviour, attitude or mindset that a person has towards something has been provided to him/her (Parasuraman et al, 2013). The authors argue that the nature of this attitude has not yet been agreed as some states that it comes from comparing expectations with the performance views (disconfirmation) while others suggest that it comes from comparing performance with ideal standards or from individual perceptions on performance (Cronin & Taylor, 2011).

According to Organisation for Economic Cooperation and Development [OECD] (2011), an efficient and effective programme of taxpayer activities is a critical goal of revenue authorities. Revenue authorities across the world need to ensure that taxpayers comply with taxation policies for them to achieve their goals and objectives through voluntary compliance although this seems to be a bigger task. Therefore, for the tax bodies to achieve high level of compliance by members of public, standards and services provided to them need to be higher which will help them observe the laws and acquaint themselves with relevant obligations (OECD, 2012).

A revenue authority uses variety of channels at their disposal to offer services to taxpayers. These services include having physical operation centres (like office enquiry centres) that enable face to face communication, provision of telecommunication inquiry services (including use of call centre stations), use of normal postal correspondence services like Postal Corporation for mail services and through current electronic mediums like internet and other channels (Cheruiyot, 2015). Nevertheless, the channels mentioned above have various

strengths and weaknesses and even cost considerations before a revenue body makes a decision to use them.

According to Naomi and Joel (2011), service delivery has been facilitated through providing taxpayers and authorised agents with constant, clear and timely information, being considerate to taxpayers, tax authority staff being courteous, lack of favouritism, responding to taxpayers enquiries quickly and expeditiously, taking taxpayers complaints and request with all gravity it deserves, explaining to taxpayers grounds for derivatives in tax assessment, provision of expert advice to taxpayers on the consequences of them not remitting their taxes or paying their duties, helping new taxpayer to register, educating and creating awareness to taxpayers with regard to their tax obligations and rights. Given these suggestions by Naomi and Joel, revenue authorities need to develop a strategy of arriving at optimum service delivery. This service delivery is one that assures taxpayers of high standard of services, effectiveness, saves time and meets the organisation objectives for its own and its clients as a whole.

In Ghana, Ameke (2016) explored the effect of operational efficiency on customer satisfaction. The case study involved the use of a customer survey based on a scale called SERVQUAL which was used as a measure of service quality. The research pointed out that that quality service induced by operational efficiency does have a positive influence on customer satisfaction. Thus, operational efficiency at port has high level influence on customer satisfaction.

In Kenya, Mbaki (2013) study sought to establish the processes that the One Stop Border Post strategy implementation was pegged on and the challenges that may have been faced.

The study collected primary and secondary data which was analysed through content analysis and presented in continuous prose. Primary data was collected through questionnaire administered by an interview guide. The study found that the one stop border post strategy was faced with some difficulties that slowed down by difficulties and numerous challenges stood on the way to successful implementation.

2.2. Review of related literature

2.2.1 Electronic Clearance Customs System and Service Delivery

According to Long (2013), implementation of e-customs increases automation in the organisation particularly through reception and inspection of customs through use of three colours channels; red, yellow and green. When the red channel lights up, it means “Stop” the goods at the facility have to be inspected by the customs officials at the location of the goods or at the forwarding agents premises. The customs department ensures that all clarification of the goods have been made through close supervision before they are released. After positive examinations, the clearing agent receives customs receipts and documents through electronic means. The second colour channel is the Yellow one that denotes “Documentation” which suggests that if clearing agents, importers or exports submit and produce folders which are based on the policies, they have ability of exporting or importing of mechandise. The third channel is green one which denotes “Release of Goods” which comes into effective within 10 minutes. The mechandise may thereafter be transported to their destinations (Bekele, 2015).

On import front, the task involving all aspects of foreign trade and custom law is directed to the companies involved in the process. Goods that have been improperly declared and which may lack relevant permission and licenses could result in legal injunctions and removal of the

permission certificate to perform the duties of authorised economic operative. E-customs speeds up clearance of goods and reduces delays in deliveries to their clients. Therefore, overhead costs that affect the cost of imports and price of exports are greatly minimised (Bekele, 2015).

In Croatia, Erceg (2016) argued that adoption of e - customs significantly altering the role of international forwarders and customs authorities. The NCTS was one of e-customs tools being implemented by Croatians when the country was making preparation to join European Union. Erceg found out that utilisation of the NCTS assisted business people to reduce transit time from the Croatian border to products destination. The NCTS also shortened waiting time at the border and this created saving in transit time. It also saved money for preparing customs documentation processes at the border, it facilitated enhanced, quicker and professional work related procedure of transportation of cargo.

In Philippines, Alcedo and Cajala (2015) study assessed the present computerization program of the Bureau of Customs (BOC) with focus on the import and export transactions. Descriptive-survey method was employed in this study using a validated questionnaire to gather the data. Using incidental sampling in choosing the respondents, the subjects of the study were customs brokers/representatives, shipping agents/freight forwarders, and Value Added Service Providers (VASP). The respondents were unanimous that the perceived benefits of the computerization program of the BOC were achieved. However, the elimination of corruption was fairly achieved. On the other hand, the respondents are unanimous in saying that the computerization of BOC was effective. The import/export documentation, however, was only judged fairly effective.

In Nigeria, Bakiyem and Rusu (2014) applied Capability Approach (CA) framework by Amartya Sen's in investigating the influence of e – government scheme that planned to modernise customs procedures and facilitate trade within and among their neighbours. They found out that electronic trade adoption by customs provide businesses and individuals chance to upload and download export and import declarations by electronic means using a single document. This resulted to saving of time and costs as those declarations could be made from any place one is at any time. This improved customs operations and capability which is significant in creating jobs and ability of people to make a living and thereafter human development

In Ghana, Nsiah (2014) sought to examine the electronic cargo clearance procedures at the Port of Tema. The study was at the port of Tema which handles about 80% of Ghana's imports (GPHA, 2006). A mixed sampling technique was used in sampling a total of 142 respondents for the study. Results from data analysis revealed that majority of shippers (92%) were in favour of electronic cargo clearance at the Port. In addition, most (84%) of freight forwarders supported the use of electronic goods clearance system. In respect of the rationale for endorsing the electronic cargo clearance procedures, a high number of the shippers (32%) explained that it would reduce bureaucratic procedures associated with cargo clearance at the Port. Majority of the freight forwarder (34%) also explained that it would ensure efficiency of cargo clearance operations.

Asuliwonno (2011) study sought to investigate nature and degree of automation of customs and port activities in Ghana. The researcher also sought to establish the usefulness of Ghana Community Network Service (GCNet) Limited system installation in customs and port

activities. The research used a case study research design. Data gathered was from port operations and type of operations that were done using the system. This data was collected from primary and secondary sources. Study findings showed that GCNet was essential in enhancing efficiency and effectiveness of port and customs operations in the Ghana. However, research result showed that not all port and customs institutions had adopted the GCNet system because of lack of adequate infrastructure and little knowledge on the use of GCNet system.

In Cameroon, Cantens, Raballand and Bilangna (2016) said that the country introduced reforms in customs administration which included installation of Automated System for Customs Data (ASYCUDA). Cantens et al reported that after four months of installing the system, there was reduction in corruption at customs offices and clearance times were significantly reduced. This they argued electronic customs revenue system transformed the new professional culture in customs services which influenced service delivery

In Ethiopia, Bekele (2015) explored the efficiency of electronic service delivery through taking ASYCUDA as the case study at Ethiopia Revenue and Custom Authority (ERCA). Survey questionnaire was employed to gather data from a sample size of 130 respondents. Study finding indicates that even though ASYCUDA is facilitating the import and export process of the authority, it faces implementation problems. This creates inefficiency in the maximizations of the benefits expected from implementations of ASYCUDA.

In Uganda, Nkote and Luwugge (2010) investigated relationship between automation and customs tax administration from secondary research studies. The results from Uganda Revenue Authority (URA) showed that while automation of revenue systems increased

efficiency of tax administration, automation did not lead to efficiency in cost reduction, decreased clearance time and effectiveness of operations. The respondents inferred that URA achieved the computerisation of customs tax administration at increasing rate of costs because of partial automation of all its systems. In addition, the effect of automation on cargo clearance time implied that computerisation of customs administration at the authority failed to completely unravel delays in cargo clearance time hence not realising the goals and objectives of automation of customs systems.

In Tanzania, Msuka (2013) a study was done on the ineffective custom clearance of cargo and other merchandise at seaport. This study was carried out at the Medical Stores, Dar es Salaam. The study findings indicated that most of the challenges came as the results of clearance procedures in Tanzania being too long, surrounded with corruption environment due to multiple documentation requirements, and the procedures are neither transparent enough nor documented.

Operations in organizations need to be expedited through a quicker clearance procedure. The transport cost of goods in East African region is higher by 60-70% than in United States and Europe and 30% higher than in other Sub Saharan African countries. The reason behind higher costs of transports is attributed to poor customs clearance systems in East African Region. The rate is higher in landlocked countries like Rwanda. In spite of geographical challenges, other difficulties faced include; long delays in acquiring trade permits and clearance, ineffective border administration systems, high incidents of corruption and poor infrastructure development of key installation such as ports, roads, electricity. These challenges contribute to high costs of trade and undermine regions exports competitiveness in

the world market. In Japan, Single Window agency has been leading in customs clearance processes. Under this system, traders within can input or key in data on integrated windows on which they can import or export declarations, aeroplane and vessel transaction and immigration processes with ease, quickly and efficiently.

Manual customs clearance of goods through customers is a lengthy and costly process that documents have to exchange hands manually between different organizations and agencies. Due to lack of coordination between the agencies and organisations, this resulted in longer periods taken to clear cargo at the various terminals within the country (ICF, 2015). According to TRA, it was not an easy task tracking down where the problems were and who was accountable for the delays if a manual system is used. The manual process and decision-making process between agencies is bureaucratic which resulted in difficulty in the monitoring process and the procedures to be followed. With the introduction of new technologies and modernization of customs administration procedures in countries bordering the pacific in Europe, it has led to reduced 60% costs of importing and exporting goods while improving customs efficiency, transparency and risk management (TRA, 2014).

In the United Kingdom, the use of Electronic Management System (EMS) records the declaration to customs by land, air or sea. It allows the necessary players within the industry to complete customs information electronically. The UK e-customs system is linked to 5 Community System Providers (CSPs) who are the self governing trade system that works with the UK revenue authority. The community system providers document and tract the movement of cargo across ports and airports ensuring flow in clearance process which enables them to operate more efficiently.

According to the European Commission (2012), the computerization and oversimplification of processes in customs administration allowed companies within EU to encounter more effectively challenges related to customs in globalisation and increased trade volumes across the region. The report noted that delays at the border points have been due to paper – based procedures and complex rules, this affected competitiveness of companies. The authority has laid down rules and regulations on goods moving in our moving out of the European community customs territory. The e-customs verdict place objectives to be achieved by creating a paperless environment for trade and customs. Over and above, structure, ways and time limits for action so that it facilitates clearance system.

On computerisation of e – customs processes and interoperability of Electronic Customs Systems (ECS), electronic customs systems, the Modernised Custom Code (MCC) provides legal base through which procedures based on electronic data processing methods while electronic decision, therefore, provides for the legal bases for procedures based on electronic data-processing techniques, while the e-Customs decision recognise the methods to be developed and time limits to make them functioning. The e-customs helps in identifying the specific tasks of the commission and member status, coordination and monitoring procedures through collaboration with member nations I customs policy organisation and illustration and update of multi annual strategic plan.

In East Africa, the implementation of customs controls at border points among member states is at consolidation stage of common customs union. The EAC is trying to make this idea functional by forming a Single Custom Territory (SCT) under customs management and free movement of goods (Poloji, 2012). Poloji further attributes that business facilitation at EAC

border points is still a major issue long Tanzania-Rwanda and Kenya-Tanzania border. This has affected clearance of cargo. This border clearance process is cited as the main challenges in the supply chain which regularly undermines the competitiveness of cross national trade by increasing the cost and reducing the reliability of supply. Poloji (2012) also found out that time trade facilitation at border points is still a major issue. It is affecting the clearance of goods, border clearance processes are amongst the most problematic links in the supply chain and frequently undermine competitiveness by increasing the cost and reducing the reliability of supply, the time schedules at the border posts are not synchronised, and border controls interfere with the free circulation of goods.

With the establishment of OSBP at boarder points, all boarder agencies are incorporated into one which results into enhanced efficiency of operations that are well coordinated, harmonised and streamlined. OSBP has resulted in reduction of shipment time for transporters and traders resulting to transit times for traders and transporters leading to more effective use of available resources and material goods at lower costs. OSBP has also resulted to enhanced competitiveness for goods in the EAC due to reduction in processing time which have been assumed to translate into reduction in costs. It has also enhanced the reliability of supply chain by streamlining and harmonising processes leading to foreseeable passage of goods and development of enhanced operational limits through improved of information sharing and data exchange among different agencies (Poloji, 2012).

In the last seventeen years, effectiveness of Kenya customs service was undermined by use of ageing technology, corruption and disorganisation (WCO, 2002) based on a study done by WCO in Mombasa port customs office. As a result, improvements have been seen due to

growth in regional trade and nations anti corruption initiatives that have seen the customs department under KRA to improve its operations. It was also occasioned by the fact that neighbouring countries (Tanzania, Uganda) had began to improved their ports and implemented strategies aimed at expanding inter-continental and regional trade. As Kenya is considered the entry of East and Central Africa, KRA had no option but to begin improving and streamlining customs activities with the aim of improving accountability and quality services.

Sigey (2010) did a research on impact of automation as a structural change strategy on customs clearing processes by KRA. The research finding showed that after the introduction of Trade X – Simba system, there had been enhanced effectiveness, efficiency improvement, improved staff skills, reduction in costs and improved governance processes at customs department.

Serete (2015) assessed factors affecting containerized cargo clearance in the Kenya port. This research embraced a descriptive research design. The target population involved 200 respondents. Stratified random sampling method was used to select 25% of the target population to act as the sample size. The study found out that a strong positive relationship existed between independent variables; documentation process, handling equipment, transport infrastructure and space capacity and the dependent variable containerized cargo clearance at KPA. Single window system on containerized cargo clearance has been seen as a solution to curb congestion problem in KPA.

2.2.2 Electronic Customs Revenue System and Service Delivery

There is an increasing need by the government to generate and increase revenue through taxes to address the increasing recurrent and development expenditures stated in the budget. Electronic customs revenue systems have been verified to improve efficiencies in businesses activities that may increase revenue collections (Zhou & Madhikeni, 2013). De Wulf and Sokol (2005) as cited by Muthama (2013) argues that adoption of technological approaches in ensuring strategic goals of government are achieved is an important direction towards transforming government into a body that can keep shoulder to shoulder with the expectations, needs and even requirements of the current dynamic world (Muthama, 2013). Application of technological solutions towards the strategic goals for government is a key step towards transforming government into an entity that can keep abreast of the needs, requirements and expectations of today's modern world (de Wulf and Sokol, 2005 in Muthama, 2013).

The improved Kyoto Convention resolution is approved to be a Revised Kyoto Convention is the generally accepted reference point for modernising custom operations (Honoham, 2003). Tax system automation is increasingly being used by government tax collection agencies to improve their efficiency and effectiveness. During ancient times, those who collected taxes utilised basic methods to collect taxes. A point to note is that the methods used were rough that they gave the activity a bad name (UNCTAD, 2008).

Therefore, e- customs systems need to be modelled with efficient and effective association between hardware, software, procedures, personnel, controls and data inside the systems. China reported higher 78% revenue after implementation of a custom system; procedures

facilitated more revenues to be collected. To meet streamlining criteria, e-customs systems need to meet appropriate data categorisation classifications (definitions and design) recognised and utilised to record financial data, understand the regular procedures utilised for processing comparable types of transactions, internal control over data entry, transaction processing and established and used for recording financial events, understand the common processes used for processing similar kinds of transactions, the internal controls over data entry, transaction processing, and reporting applied regularly and a scheme that eradicate erroneous replication of transactions entered. Kenyan government after implementation of the revenue system facilitated an increased in 11% in revenue collection which is significant for every nation as it assist the government to acquire properties which are debt free and that enabled the government of the day to improve its economy. For a government of Kenya to ensure sufficient resources are collected they need to ensure its customs electronic system service delivery.

In Nigeria, Umenweke and Ifediora (2016) found out that with e-taxation, taxpayers can conveniently pay their taxes electronically from the comfort of their homes, offices, shops and even while travelling. Tax authorities on the other hand, can now go after tax defaulters with the electronic tax history of taxpayers on their web portals. Research reveals that the adoption of e-taxation in some countries has increased tax compliance amongst taxpayers.

In Ghana, Tetteh (2012) examined the influence of automation systems procedures of the country revenue authority on revenue collection. The research reported findings from cross sectional research design examining investigating GRAs familiarity with automation, effective and efficiency of tax administration. After interviewing forty (40) officials from the

Customs Division (CD) with specific duties and responsibilities in automation system management at the Ghana Revenue Authority (GRA), they found out that automation was a powerful monitoring tool for GRA.

In Ethiopia, Wondemagegne (2014) conducted research on the area of Customs and Revenue Reforms in Ethiopia by taking a case study of ASYCUDA++ which is an extension of reform program on Service Delivery. A non – probability purposive sampling method was utilised to select ERCA employees and customers. On this regard of 200 respondents formed the sample size that was selected to participate in the study. The response which was generated from respondents were processed and analyzed using SPSS. The adoption of ASYCUDA in the operations ERCA was due to its wide range of benefits in simplifying the functions of the Authority. But despite of the benefits, during the implementation stage there are problem which affects its efficiency like frequent break downs, lack of training on the system and deliberate human interference.

Still in Ethiopia, Eshetu (2015) examined how well e-Government is recognized and comprehensively rolled out as a strategic tool to solve such drawbacks on existing tax administration systems at ERCA In terms of the stage of e-Government, ERCA is found at its emerging stage where most of its e-Services are informational (static) than transactional. It was found out that a lot has to be done for ERCA to evolve its e-Service to a stage where all its services are integrated in seamless manner; fiscal transparency is enhanced; knowledge management (for example to control tax evasion) is optimized; and e-Payment augments e-Filing.

Lumumba, Obongo, Obara and Ouko (2010) examined how effectiveness of Electronic Tax Registers (ETRs) had improved the processing of Value Added Tax returns. Target population consisted of 98 VAT registered taxpayers from Kisii town. It was established that introduction of ETR resulted in reduction of costs that businesses enterprises used to incur when they were processing VAT. Research result showed that use of ETRs improved revenue collection for businesses resulting from good sales and regular stock audits. It was also clear that utilisation of ETR was not a wastage of money but had assisted businesses in various ways by cutting costs that the business used to incur in processing VAT. It was found that ETRs have enhanced the revenue collection resulting from sound sales and stock audits. It was found that the use of ETRs was not a waste of funds and has assisted the business in many ways.

Still in Kenya, Muthama (2013) determined the kind of relationship that existed between modernisation on revenue collection at the Kenya Revenue Authority in Kenya with regard to the Simba System. This study employed descriptive study design. The study used secondary data collection. Study findings established that that the number of transactions and the revenue collected increased after the implementation compared to the years before the implementation. The study findings also established that the revenue collected was directly related to number of transaction but inversely related to inflation, operating costs and exchange rates and that there existed a strong association involving system modernisation on revenue collection by Kenya Revenue Authority in Kenya with regard to the Simba system.

Muriithi and Moyi (2003) conducted a research tax reforms and its influence on revenue mobilisation in Kenya. The researchers noted that one of the goals of tax reforms in Kenya

was to guarantee that tax system may be utilised to address continual monetary fiscal discrepancies. For them to conduct the study, they utilised elasticity and buoyancy concepts to investigate whether tax reforms in the country achieved their desired goals and objectives. The researchers went ahead to suggest that tax reforms had positive influence on the general tax structure and on individual tax handles. The elasticity of meandering duties was down and that of direct taxes was higher after the introduction of the reforms. Nevertheless, the positive impact mentioned there, they failed to make VAT receptive to changes in income despite VAT being prime in the tax structure.

Maranga (2015) examined and described the transformative powers of e-government by focusing on utilisation of ICTs to transform a particular public agency, the Kenya Revenue Authority. The research used two main methods of data collection and construction: interviewing senior management at the Kenya Revenue Authority (KRA) and reviewing documents obtained from the KRA and other public sources. Findings suggested that although ICT has had some beneficial effects on the KRA, the changes produced to date fall short of being described as transformative. While the KRA has experienced significant improvements in performance in terms of revenue, it has yet to fully integrate its operations, change its organizational structure to achieve optimal efficiency, or transform the organizational behaviour and culture of its staff in ways that improve its operations or enhance its public image.

Cheruiyot (2015) sought to review iTax system and service delivery by Kenya Revenue Authority, Nairobi stations. The study adopted Cross-sectional research design approach. The study targeted Kenya Revenue Authority employees in Nairobi stations. The study found that

employees' perception towards technology (iTax) has a statistically significant influence on customer service delivery. It found that a better understanding and knowledge of the tax system and access to internet do improve customer service delivery significantly.

2.2.3 Electronic Customs Risk Analysis System and Service Delivery

Risk management concept is applied in most organizations and even in the public sector. Biljan and Trajkov (2016) argued that there is a lot of that could be compared with the issues surrounding customs. On the custom contexts, risks comprise of potential for non – compliance with customs policies like licensing obligations, appraisal provisions, tax exemptions systems, rules of origin, security regulations, trade restrictions and potential let down in facilitating international trade as indicated by World Customs Organisation (2003).

Risk management is a methodical recognition and execution of all necessary strategies important to limit exposure to custom risk as it evaluates which people, cargo and means of shipping should be assessed and to which extent (World Bank, 2005). The prominent risk people, cargo and transport means are subject of high level checks and interventions; regardless of low risk ones who obtain high level trade facilitation. Risk management approach is only the one that may warrant conformity with customs laws and regulations so as to ensure trade facilitation. Through identification, analysis and evaluation and treatment of risks, customs authorities administer daily activities that drastically improve its service delivery hence better performance. By utilising risk management approaches, custom organisations to improve its decision making procedures hence minimising the impact of risk events on their operations (Biljan & Trajkov, 2016).

To address custom frauds like evasion of payment of tariffs and other taxes (duties). According to Biljan and Trajkov, these are evidently through; declaration and acceptance of dishonest customs value, declaration and acceptance of misclassification, declaration and acceptance of illegal origin of cargo, release of import for processing, release of outward processing, illegal removal of products from being supervised by customs and not declaring import goods for customs clearance. These are one of the significant and mostly recognised risks in customs management strategies across the world (Biljan & Trajkov, 2016).

Risk management is important in any organizations to achieve its intended objects. A good risk analysis system needs to identify and mitigate risks related a given system. Electronic risk analysis system is an important component in customs management because it can help identify any risks origination from a process. Elimination and mitigation of risks can be useful in ensuring that processes are done without challenges and inefficiencies.

Subsequently, customs organisations need to balance trade regulatory strategies with goals that facilitate efficient trade. This demand the usability of world best practices like risk management methods that assist in setting up resources to high risk areas. There is need to upgrade intra agency and inter agency cooperation at border posts in order to eliminate excessive replication of processes. However, in Zambia, there are 11 various government departments executing various pieces of legislation, 8 have powers to hold cargoes under their own rules, and this is against the principles of facilitating trade across regions. The rising complication, volume and speed of international business stimulated by technological revolution that has transformed world business practices has critically influenced the way in which customs conduct their activities. As a result, most customs organisations have

executed regimented and well thought strategies of addressing risks as expounded by Widdowson, 2005).

Customs risk system is useful in ensuring that targets are met without any uncertain influence. Its rising growing usage signal a necessary change in the function of government in economic prosperity and its association with the private enterprises. Customs authorities are currently adopting the function of informers and facilitators of customs policies, procedures and rules (Iordache, 2015). Further, current customs tenets comprise of; use of technology, risk management and partnership with traders. These principles were developed by WCO which has been incorporated in the amended Kyoto Convention as adopted by the WCO governing council in the year 1999. Considering previous efforts, SAFE framework of standards further enhances customs activities and address security issues by expanding customs focus to the entire supply chain and putting up the needed security requirements. Improved cooperation among customs authorities and intensified customs – to – trade partnerships that are key to achievement of objectives.

According to the European Union (2017), CRMS comprises; identifying and controlling of high risk cargo interchange using ordinary risk criteria, identification of priority control areas subject to more intense controls for a specific period, systematic and intensive exchange of risk information between customs, the input of Authorized Economic Operators (AEO) in a customs – trade associations to protecting and aiding legitimate business and pre – departure and pre – arrival security risk analysis based on goods information presented through electronic means by traders before arrival or departure of cargoes in and from European Union specifically to cater primarily for security and safety risks.

Geourjon, Laporte, Coundoul and Gadiaga (2012) argued that as a measure of limiting number of invasive scrutiny, majority of customs organisations depend on risk analysis as the best effective tool for facilitating trade and protecting their activities because of the increased in trade volume in recent times. Nevertheless, customs authorities in developing countries have been slow in adopting e-customs risks analysis. The author presents the situation and experience in Senegal where data mining and statistical scoring techniques were suggested to be used by customs authorities in developing nations to evaluate risk and assign declarations to various inspection departments. Geourjon et al revealed that in house development of this system by customs authorities in developing countries may advance the process of modernisation.

According to Biljan and Trajkov (2016) risk indicators and profiles in using e-system includes; vehicles, persons and goods that are routed to one of the channels discussed in the previous section. The e-custom clearance system determines whether the above mentioned goods can be declared; red, green, yellow or blue channel. Thereafter the custom official may reroute the customs declaration to a pre – established channel if the officer has a sufficient reservations that cargoes, persons and vehicles need to be examined. ASYCUDA is the most common ICT software used by customs authorities in control channels in risk management. The software initiates: electronic processing of declarations for export, import and transit, certifies, additional sub – system and revenue collection functions, risk analysis, authorisations and customs tarrifs. The software also introduces sub – system for management of laboratory, intellectual property, knowledge base, e – learning and excise.

When analysing the deployment of EDIs in trade facilitation processes in various countries, Yasui and Engman (2009) observed that e-customs had significant benefits to government authorities, businesses and individual traders. Nevertheless, the extent to which benefits was because of the deployment of electronic customs revenue systems was less clear. Yasui and Engma the benefits to three essential factors; effective adoption and implementation of new customs procedures like risk management, pre – arrival processing and post – clearance audit process that led to reduction in incidents of fraud and improved revenue collection.

Biljan and Trajkov (2016) informed that because customs authorities deal with big scale of revenue across borders, the organisation need to balance the level of controls and intervention used on the one hand and time and costs associated with declaration processing on the other. Present customs control systems need to be founded on selectivity approach and risk management. The risk management approach in organizing and controlling customs activities is a complex process which starts with identification, analyzing and evaluation of possible risks, and continues with treating of selected risks by adoption of risk indicators and profiles.

Igbanugo and Gwenigale (2011) argue that computerised systems in customs processes offer an important instrument to measure transparency when assessing duties and taxes, leads to a significant reduction in the time taken for clearing and reliability. Igbanugo and Gwenigale suggests that when the level of computerisation of is higher in customs processes, there is a high chances of detection of fraud, detailed inspection and firm actions including prosecution process in courts.

Odunayo (2014) examined the role played by internal control systems in the administration of customs services in Nigeria. The internal control systems had two groups of players in it; enforcement and administration. The researcher selected 100 respondents who were given questionnaires to fill. Research result showed that there existed significant difference between internal control systems and proper accountability at the authority. In addition, it was found out that effective use of ICT played a significant role in enhancement of duties collection. This study concluded that effective control systems guaranteed high revenue generation. Moreover, a positive correlation existed between internal check and high level of accountability.

In Kenya, Lukorito (2011) conducted a research on the ICT security threats undertaken by KRA. Lukorito established that spamming; software bugs and identity theft were the most common threats reported by KRA when using ICT. The reason for increased threats was due to inadequate provision of training to employees, staff working experience, usage of outdated software and social media factors. The researcher found out that Integrated Tax Management System (ITMS) was the system that was used but it was prone to many threats. It was also identified that the system identified goods that needed physical examinations in revenue and risk assessment process function. This gave legitimate cargo and those supposed to be of low risk easier passage when they are imported straight from other nations exported to them. Kenya implementation of Simba system that contained a risk analysis system which enables to capture any risks associated with customs operations, and administrators can use it to make required decisions.

2.2.4 Electronic Customs Monitoring System and Service Delivery

A good monitoring system is grounded on the standard of allowing those affected by it to get services and information at their convenience and way through which they want. User-focused customs revenue system demand understanding of user needs and capacity to provide services based on their (OECD, 2005). In order for the monitoring system to be built on these user needs, public agencies must be involved in every stage of function life cycle (identification of people wants, the sketch of services, performance assessment, service delivery and evaluation) (WEF, 2011).

Kavanagh (2007) complement on this saying that victory is simply calculated by taking pre and post – execution performance metrics and thereafter following the metrics over a period of time to reveal constant advancement which called up on the need for baseline value of the Key Performance Indicators (KPIs) based on users need assessment. The monitoring system or EMCS majorly combats economic fraud with up to date information and inspects on cargo being transport under duty suspension, it ensures that movement of excised goods on which duty has been paid to be secure with before dispatch examinations on businesspersons, it also simplify the processes for traders with a standardised, it speeds up release of warrants when cargo arrive their point of destination and create a paperless management (European union, 2017).

When ICT controls are not effectively addressed, incidents of financial losses increases and goes ahead to damage the reputation of the customs organisation by its clients and partners (Odunayo, 2014). For maintenance of efficient cyber security of customs information technological systems, these systems need to be monitored regularly (as well as activity

logging), auditing and analysis. Okundayo indicated that this process may reveal information on the usage of websites and other ICT systems to thwart unauthorised access and attacks on the systems or solve such problems. Those involved in electronic monitoring of customs systems may use this data even if the authorities are not involved in those activities. Customs authorities may outsource these services from one or other entities that will monitor and maintain the cyber security of its data and systems. These entities who are not related to the customs will have right of admission to logging information, monitoring and information processed through customs websites and other ICT systems. This method has been applied in New Zealand where utilisation of ICT systems and websites of customs have embraced regularly monitoring (New Zealand Customs Service, 2015).

In Romania, Vatuiu and Tarca (2010) indicated that e-customs new electronic system allows permitted current monitoring of product improvement within the country. This has improved customs authorities ability to control and monitor trade in excise cargo in duty deferments. It has led to increase in revenue for the excise department, reduction in fraud incidents and achievement of Romania conditions as a member state of European Union with regard to the use of e-customs monitoring systems.

There has been increased on the piracy (along the Indian Ocean), accidents, thefts and damage of container goods in recent times (Miller, 2015). According to Miller, there is need for real time remote tracking and monitoring of containers on transit to assist in reduction of losses associated with container goods. The use of trackers may also provide real time data which may help in retrieving of goods hence minimising damage. In addition, there is reduction in insurance claims costs and insurance premiums because the monitoring systems

lead to low damage and thefts. Miller suggests that effective container transport management and security system need to incorporate sub-systems of container tracking and intrusion monitoring in real time.

Bujak and others (2017) argues that the systems could include; screening, electronic monitoring, border crossing weigh in motion, automatic equipment identification and credentials supervision. Mahlkecht and Madani (2007) opined that the importance of Electronic Container Tracking System (ECTS) is to makes sure security and safety for end supply chain member. Therefore, integrated management and monitoring start at consolidating and packaging stations, goes after road transport and conveyance to the port which includes storage (at the port in case it is applicable), container freight stations (yard), gives alternative ship deck assessment, pass through the drayage and draw to a close with separation and emptying out at the haulier or at the ware house of the end users. These functions may only be provided by applying state of the art monitoring systems. Miller notes that this system may not provided advantages in low cost and flexibility of inter-modal supply chain management and security.

In Jordan, Alfitiani (2010) indicated that the country has applied various approaches to manage transit traffic in recent times and one of them is electronic transit monitoring and facilitation system. This has resulted to significant reduction on the costs of transporting goods through the country as they do not require travelling in a convoy of vehicles a situation they had before. Because of the increased transit traffic, smuggling incidents have reduced and transit time journey has decreased by at least 60%. This shows that transit time actually reduces when ETMS are used.

ICT systems control contains data that is entered into a e-custom systems to ensure that duty has been paid on it. These ICT systems assist in transaction processing that is complete and accurate (Odunayo, 2014). ICT control assist to guarantee proper function of e-customs systems eventually. These controls consist of data centre operations, maintenance, systems software acquisition and security access. From the review of literature, the implementation of electronic customs monitoring system becomes an important component in corrective and improvement of operations. KRA customs systems were designed to have a monitoring system that ensures continuous checks of daily customs operations. The customs system became a critical component to identify inefficiencies and loopholes of a given system.

2.3 Theoretical framework

The study was guided by Capability Approach (CA) developed by Amartya Sen (Sen, 2012). According to many theories, CA has been significant since it was developed in the last 80s and has surfaced as an option to conventional methods for discussing subjects concerning human development. CA emphasises that human development need to be understood in terms of people ability to operate. The core of this approach is the capabilities and functionings. Functionings are beings and doings of an individual and capability means various blending of functions that are realistic. A person's capability is the combination of priceless functions that they can truly access (Sen, 2012).

Therefore, CA has currently being applied in determining the development of ICT in organisations. Based on CA perspective, ICT is not an end to itself. However, it is viewed as being entrenched in the course of human development to enhance the capabilities of person to guide their lives in customs (Zheng & Stahl, 2011) that they have adequate evident of its

importance. For instance Alkire (2005) utilised this method to assess a development programme that focus on capabilities that have been enhanced by a project compared to financial analysis. Furthermore, capability approach tackles the disadvantages of other ideas and recommends a model for evaluating access to information communication technology and its influence on human development.

The study chose Sen CA framework since it moves beyond expenditure, access, deployment of facilities and conveying of skills to essentially record various applications on offer and benefits that are enabled. CA framework stresses on four factors; functionings that are enabled, ICT generated applications, what persons do with opportunities and challenges to achievement of functionings.

2.4 Research gap

A review of several researches both locally and internationally supported various variables of the study. Several researches have indicated how a good clearance system is helpful in verification of processes, but no particular study clearly shows how clearance system is doing prohibition work which has contributed to service delivery. No clear studies have clearly shown how licensing can contribute to service delivery. Lordache (2017) argued the revenue system can contribute to service delivery.

No clear studies have not shown how monitoring system especially when performing statistical analysis have contributed to service delivery.

Clegg and Creg (2010) argued that any system implement should be able to carry out risk analysis. But the argument it did not really support how risk analysis magnitude can have any effects to streamlining of operations. The study factored the research gaps during data collection process to ensure a complete study.

2.5 Conceptual framework

The conceptual model given in Figure 2.1 represents a diagrammatic representation of the variables of the study. The independent variables (clearance system, revenue system, risk analysis, monitoring systems) and dependent variables (service delivery), both the variables are intervened by government legislations and environmental factors. Figure 2.1 shows conceptual framework.

Independent Variables

Dependent Variable

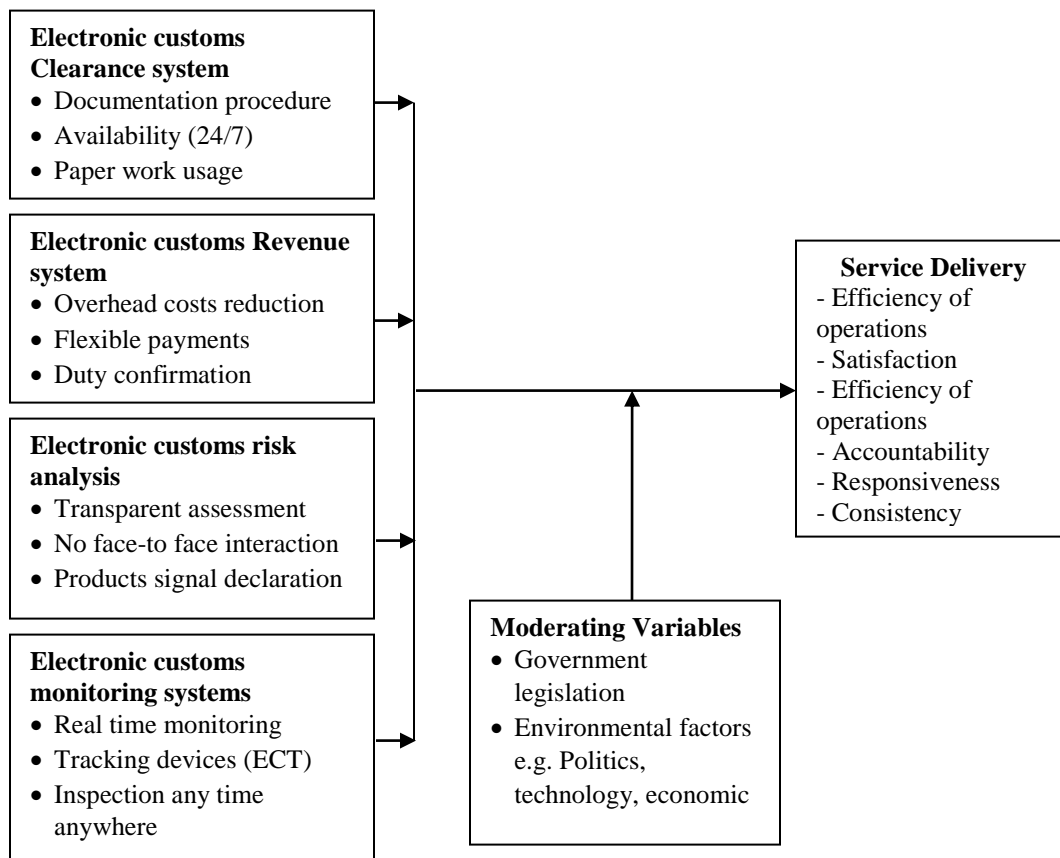


Figure 1: Conceptual framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design and methodological procedures that were followed by the researcher. This chapter is divided into various sections and subsections that include; research design, the target population, sampling size and sampling procedures, research instruments, pilot testing of the instruments, validity and reliability of research instruments, data collection procedure, data analysis procedures and ethical considerations.

3.2 Research Design

The study adopted descriptive research design. A descriptive survey research design is a method in which the views and perceptions of the population is sought by the research through several objectives that are contained in a questionnaire. Survey research design is linked with deductive approach regularly done in social science research studies to answer research questions or prove or disapprove various hypotheses. This design permitted collection of data from large group of respondents. the design is used to answer research questions such as; ‘what, who, how many and how much’ involved in a particular study. The research design excelled at bringing understanding of the variable electronic customs management systems and extends its manipulation on dependent variable (service delivery).

3.3 Target population

According to Mugenda and Mugenda (2009), target population refers to whole group of individuals, subjects or objects that posses observable common characteristics. It is the population which the research needs to generalise the results of a particular study. The target

population of the study involved 4 KRA managers in charge of Eldoret Custom’s station and 384 exporters, truckers and clearing agents. The records were obtained from KRA employee’s muster roll 2017 and KRA customer’s agent registry 2017. These groups were considered to have information regarding customs electronic clearance systems and service delivery. The 4 KRA managers were key respondents for the study. The target population is shown on Table 3.1.

Table 3.1 Target Population

Target Group	Target Population
KRA Customs employees	4
Clearance agents and exporters	384
Total	388

Source: KRA muster roll and agent registry (2017)

3.4. Sample Size and Sampling Procedure

The section covers the sample size and sampling procedure.

3.4.1 Sample size

Because, the population of clearing agents and exporters is high, a sample was undertaken. For Customs stations managers, all of them participated in the research. To establish the appropriate sample size for this study, a formular given by Yamane (1967) was used to compute the sample size based on the model given below:

$$n = \frac{N}{1 + N(e^2)}$$

Where: N= target population (384 in this study)

n= sample size

e= is the level of precision taken as 0.05 in this study.

Therefore, the final sample size for the study was calculated as:

$$n = \frac{384}{1 + (0.05^2)} = 195.91$$

According to the formula, the sample size for clearing agents and exports was 196.

3.4.2 Sampling Procedure

The study employed systematic random method to obtain the sample size from the population. Systematic random sampling technique is one of the probability sampling methods that ensure each person's has an equal chance of being selected. This is a type of probability sampling method in which sample members from a larger population (exporter and clearing agents) are selected to a random starting point (7 in this case) and a fixed periodic interval (2 in this study). This interval (2), called the sampling interval is calculated by dividing the population size by the desired sample (384/196=2). This method was chosen because the researcher had the list of all exporters and importers. Table 3.2 shows the sampling frame for this study.

Table 3.2 Sample Size

Respondents	Target	Sample size	Sampling procedure
Customs managers	50	4	Purposive sampling
Clearance agents	148	196	Systematic sampling
Total	198	200	

3.5. Research Instrument

The study used questionnaire to collect data from exporters and clearing agents. According to Kothari (2012), questionnaire consists of a number of questions that are printed and typed in a definite form and order (Kothari, 2012). The questionnaire is very important when a researcher is fascinated by facts, attitudes, opinions respondents' motivation and their level of familiarity with a particular topic (Nachmias & Nachmias, 2008).

The advantage of a questionnaire is because it generates a substantial amount of quantitative data and assist study to obtain an extensive coverage of illustrative data at comparatively low cost in terms of; effort, money and time (Cohen & Manion, 2007). The researcher developed the questionnaire based on the objectives of the study; Section A contained demographic data, Section B contained questions on Electronic Customs Clearance System and Section C had questions on electronic customs revenue system. Section D of the questionnaire also had questions on electronic customs risk analysis, Section E comprised of questions on electronic customs monitoring system and Section F contained questions on service delivery. The questionnaire was for, truck drivers clearing agents and exporters. The questionnaires was on a Likert scale of five; strongly disagree, disagree, undecided, agree and strongly agree.

Interview guide was prepared to solicit information from four customs managers in charge of electronic customs management system. The interview guide was semi-structured according to the objectives of the study. The interview also sought managers' opinion on how service delivery standards and efficiency has been affected by electronic customs management systems adopted.

3.5.1 Pilot Testing of the Instruments

The piloting approach also assessed the data and theory supported understanding of research instruments used. Pilot study was done at Eldoret KRA outstation located in Eldoret International Airport which is outside the study area for a period of 2 working days by involving 5 respondents. The airport station is involved in custom activities where goods and products being exported or imported are verified at there.

3.5.2 Validity of Research Instruments

According to Sarantakos, (2005), validity is the accuracy and meaningfulness of deductions that are based on research findings. It also refers to the extent to which findings obtained from analysis of data actually represent the phenomenon being investigated. Validity refers to the extent to which a measurement gives consistent results. The study sought expert advice to assess the validity of research instruments used in the study. The experts who were involved in validation of the research instruments consist of supervisors and other lecturers from department of extra mural studies. The comments made by the supervisors were effected prior to testing of reliability of the research instrument.

3.5.3 Reliability of Research Instruments

Cohen and Manion (2007) observe that reliability tests the extent of precision in measurement. Reliability ensures that an instrument produce analogous result after repeated trials (times). The study used the split half method in estimating reliability of research instrument. This was done during pilot study by involving 5 respondents from KRA Eldoret International Airport outstation. Thereafter, correlation coefficient was used to calculate the internal consistency of the research questionnaire. The calculation of correlation

interpretation is that a value greater than 0.7 indicated that the instruments were reliable (Sotirios, 2005). The study obtained a reliability value of 0.7894 for the four objectives of the study. Considering that they were above 0.7, the researcher considered them as reliable.

3.6 Data Collection Procedure

After ensuring that the questionnaires are valid and reliable, the research sought introductory letter from University of Nairobi, Department of Extra Mural Studies to seek research permit. After receiving the letter, the researcher sought research permit from National Commission for Science, Technology and Innovation (NACOSTI) which is in Nairobi. After receivership of research permit, the researcher sought approval to conduct research from KRA North Rift region to conduct the research at customs station. Once approval had been granted, the researcher sought truck drivers, exporters and clearing agents consent to participate in the research. The questionnaire was issued to them by the researcher. Interview with four managers of customs was arranged in advance to find a suitable time to conduct the interviews. The process of data collection lasted for one month.

3.7 Data Analysis Procedure

After collection data, the data was arranged in a systematic way to ensure that those that are not filled well were removed. Data analysis involved use of two methods; qualitative and quantitative approaches. Quantitative was coded and entered into electronic spreadsheets through use of Statistical Package for Social Sciences (Version 22.0). Thereafter, data analysis was done using descriptive statistics to answer research questions; frequencies, percentages, means and standard deviation. Inferential statistics; Chi Square was computed to check on the relationship between independent variables and dependent variable. Qualitative

data from open-ended questions was analysed thematically using content analysis and presented together with quantitative data. Data analysed as presented in narrations and tabular form.

Table 3.3 shows the research analysis matrix.

Table 3.3 Data Analysis Matrix

Objectives	Predictors	Indicators	Research instrument	Measurement	Analysis technique
To establish how the electronic customs clearance system influence service delivery	Licensing Verification Prohibition	Speed Efficiency Satisfaction Transparency Consistency	Questionnaire and interview schedule	Interval ordinal	Descriptive & inferential and thematic content method
To identify how the revenue system influence service delivery	Payment function Invoicing Receipt & collection	Speed Efficiency Satisfaction Transparency Consistency	Questionnaire and interview schedule	Interval & ordinal	Descriptive & inferential and thematic content method
To assess how risk analysis system influence service delivery	Causal relation Magnitude communication	Speed Efficiency Satisfaction Transparency Consistency	Questionnaire and interview schedule	Internal & ordinal	Descriptive & inferential and thematic content method
To determine how monitoring system influence service delivery	Tracking function Reporting Statistical analysis	Speed Efficiency Satisfaction Transparency Consistency	Questionnaire and interview schedule	Internal & ordinal	Descriptive & inferential and thematic content method

3.8 Ethical consideration

The research confine to the ethical principles pertaining research. At first, the respondents were informed of the objectives of the study and informed consent was prior to the filling in the questionnaire. Cohen and Manion (2007) suggest that informed consent is an important issue that one has to consider. The aims of the study were explained to respondents to make them make informed decisions. The participation of respondents in the study was voluntarily and they were allowed to withdraw from the study at any time. Moreover, confidentiality of the responses they gave was upheld, no any person's name of anything that he/she may be identified with was used in this research study. The names of all the informants were coded to conceal their identity and maintain confidentiality.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study on the influence electronic customs systems on service delivery at KRA station in Eldoret, Kenya. The KRA station is located at Kenya Pipeline Depot on the outskirts of Eldoret, town. Petroleum goods and products for export to Uganda, Rwanda, Burundi and Congo are cleared at the station. The study collected quantitative and qualitative data from clearing agents, transporters, exporters and KRA officials in charge of e-customs. The findings are presented using descriptive and inferential statistics based on the objectives of the study.

4.1.1 Instruments Return Rate

Table 4.1 shows the instruments return rate based on the respondents sampled.

Table 4.1 Instruments Return Rate

Respondents	Numbers issued	Response Rate	Percentage
Customs managers	4	4	100.0%
Clearance agents, truckers and exporters	196	165	85.05%
Total	200	169	85.53%

Table 4.1 shows that out of the four e-customs officials targeted, all 4 participated in the interview projecting a 100.0% response rate. In addition, out of 196 questionnaires issued, 165 were returned signifying a 85.05% response rate. On average, the study attained 85.53% response rate from respondents which is considered to be acceptable if it is above 75.0% as said by Cohen and Manion (2007).

4.2 Demographic Data

The study sought to determine the respondents who participated in the study, their goods that they declared at KRA station, experience in export business and their understanding of automated systems for customs data.

4.2.1 Respondents who participated in the Research

Table 4.2 shows the kind of respondents who participated in the research.

Table 4.2 Respondents who participated in the Research

Category	Frequency	Percent
Exporter	6	3.6
Truck driver	111	67.3
Clearing agent	48	29.1
Total	165	100.0

Table 4.2 shows that 111 (67.3%) of respondents were truck drivers, 48 (29.1%) were clearing and forwarding agents and 6 (3.6%) were exporters. The result implies that majority of KRA customers in clearing are truck drivers who clear products on behalf of their employers. Therefore they understand how e-customs operate and its influence on service delivery. Research findings showed that goods declared at KRA Eldoret station were petroleum products.

4.2.2 Experience in Customs Operations by Respondents

The study also asked the respondents to indicate how many years they had been working export business of various products. The results are given in Table 4.3.

Table 4.3 Experience in Customs Operations by Respondents

Experience	Frequency	Percent
2 years and below	10	6.1
From 3-5 years	76	46.1
From 6-10 years	49	29.7
Above 10 years	30	18.2
Total	165	100.0

Findings indicate that 10 (6.1%) had been working for 2 years and below, 76 (46.15) had been working for 3-5 years, 49 (29.7%) had been working from 6-10 years and 30 (18.2%) have been working for more than 10 years. The result therefore shows that respondents have a significant number of years working with KRA in the clearing and forwarding operations.

4.2.3 Respondents Understanding of Automated Systems for Customs Data

The study sought respondent opinion on their level of understanding of automated systems for customs data. Their responses are presented in Table 4.4.

Table 4.4 Understanding of Automated Systems for Customs Data

Response	Frequency	Percent
Yes	139	84.2
Somehow	16	9.7
No	10	6.1
Total	165	100.0

Results show that most 139 (84.2%) of respondents agreed that they understood e-customs systems, 16 (9.7%) were somehow aware and 10 (6.1%) were not aware of automated systems for customs clearance. This shows that majority of respondents are versed with how automated systems for cargo clearance at KRA Eldoret station works.

4.3 Electronic customs clearance system and service delivery

The first objective of this research was to determine how electronic customs clearance systems influenced service delivery at Eldoret, KRA station. Therefore the respondents were asked to indicate the level at which they agreed or disagreed on the influence of e-clearance systems and service delivery. The Likert scale used ranged from strongly disagree (1) to strongly agree (5). The results of the analysis are given in Table 4.5 using descriptive statistics.

Table 4.5 Electronic customs clearance system and service delivery

Statements	SA	A	U	D	SD	M	SD
(procedures) The e-clearance systems has shortened long procedures needed for paper documentation	0 (0.0%)	137 (83.0%)	18 (10.9%)	6 (3.6%)	4 (2.4%)	3.7455	.64064
(Availability) E-customs service is available 24/7 not dependent on customs working hours	8(4.8%)	107 (64.8%)	18 (10.9%)	32 (19.4%)	0 (0.0%)	3.5515	.85829
The customs office location and location of the product do not have to be same	10 (6.1%)	117 (70.9%)	8 (4.8%)	12 (7.3%)	18 (10.9%)	3.5394	1.08480
(paperless) The use of automation has reduced paper work	10 (6.1%)	46 (27.9%)	26 (15.8%)	83 (50.3%)	0 (0.0%)	2.8970	1.00986
There is seamless flow of data between KRA and exporter through use of e-customs	10 (6.15)	55 (33.3%)	66 (40.0%)	34 (20.6%)	0 (0.0%)	3.2485	.85115
There is prompt feedback when using e-customs	20 (12.1%)	48 (29.1%)	10 (6.1%)	20 (12.1%)	67 (40.6%)	2.6000	1.54130
Composite scores						3.2637	0.99767

Key: SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree, SD=Strongly Disagree, M-Mean and SD-Standard Deviation.

The research findings shows majority 137 (83.0%) of respondents agreed that electronic clearance systems had shortened long procedures needed for paper documentation at the

customs offices. The descriptive results suggests that most that respondents agreed ($M=3.74$ and $SD=0.64$) with the statement. This implies that respondents perceive that the number of days has greatly reduced since the introduction of e-customs systems the number of days that they used to wait for the clearance of their petroleum products has significantly reduced leading to reduction in accommodation and other transit costs. Research findings also showed most 107 (64.8%) of respondents agreed that electronic custom services is available in 24 hours and this was not dependent on the authority working hours. The descriptive results suggests that most respondents tended to agree ($M=3.55$ and $SD=0.85$) with the statement. This shows that clearance of cargo and other goods at the inland depot is not dependent on the time of day as it operates 24/7 hours a day. This has greatly reduced waiting time associated with long queues at KRA station thereby improving service delivery and customer satisfaction. A significant 117 (70.9%) of respondents agreed that the location of the customs office and product location do not have to be similar after the introduction of e-customs clearance systems. Only 12 (7.3%) disagreed and 18 (10.9%) strongly disagreed with the statement. this information when summarised suggests that respondents agreed ($M=3.53$ and $SD=1.08$) that customs location and location of the product do not have to be in the same location.

However, research findings shows that 83 (50.3%) of respondents disagree that use of automation has reduced paper work, 26 (15.8%) were undecided, 46 (27.9%) agreed and 10 (6.1%) strongly agreed. The results shows that respondents were undecided ($M=2.89$ and $SD=1.01$) on the statement. This shows that despite KRA migrating to use of e-clearance systems, papers are still used. This shows that automation of customs clearance has not reduced paper work.

Research results also showed that 66 (40.0%) of respondents were undecided on whether there was seamless flow of data between KRA and exporters through use of e-customs, 55 (33.3%) agreed, 10 (6.1%) strongly agreed and 34 (20.6%) disagreed. This shows that respondents were undecided (M=3.24 and SD=0.85) on the statement. This implies that respondents agree that sometimes there is seamless flow of data while in other times; there is no seamless flow of data. This suggests KRA to ensure that there is always seamless flow of data between them and exporters on the use of e-customs.

In addition, 67 (40.6%) of respondents strongly disagreed and 20 (12.1%) disagreed that there prompt feedback when using e-customs. Only, 20 (12.1%) strongly agreed, 48 (29.1%) agreed and 10 (6.1%) were undecided. The respondents also appeared to be undecided (M=2.60 and SD=1.54) that there is prompt feedback when using e-customs. The delay in giving prompt feedback is associated with situations where the e-customs clearance systems are jammed. The lack of prompt feedback result to delays and jamming of e-customs systems. Average statistics shows that the respondents were undecided (M=3.26 and SD=0.99) on the influence of electronic customs clearance system on service delivery at Eldoret, KRA station.

To answer the first research question for the study, a cross tabulation analysis was done.

The results are presented in Table 4.6.

Table 4.6 E-customs clearance and Service delivery cross tabulation

			Service delivery			Total
			Low	Moderate	High	
E-customs clearance	Very low	Count	4	30	0	34
		% within clearance	11.8%	88.2%	.0%	100.0%
	Low	Count	0	66	0	66
		% within clearance	.0%	100.0%	.0%	100.0%
	Moderate	Count	0	49	16	65

	% within e-customs clearance	.0%	75.4%	24.6%	100.0%
Total	Count	4	145	16	165
	% within e-customs clearance	2.4%	87.9%	9.7%	100.0%

Research findings indicate that for those who indicated that e-customs clearance was very low, 4 (11.8%) rated service as low and 30 (88.2%) said it was average. For those who indicated that e-customs clearance systems as low, 66 (100.0%) rated service delivery as moderate. For those who indicated e-customs clearance as moderate, 49 (75.4%) rated service delivery standard as average and 16 (24.6%) rated service delivery as high. The results presented above indicate that as the utilisation of e-customs clearance increase, service delivery standards increases. This findings are in line with Long (2013), who concluded that with increased automation of e-customs in the organisation particularly through reception and inspection of customs through use of three colours channels; red, yellow and green. Further, ICF, 2015 agreed that with manual customs clearance of goods was a lengthy and costly process that documents have to exchange hands manually between different organisations and agencies. Due to lack of coordination between the agencies and organisations, this resulted in longer periods taken to clear cargo at the various terminals within the country.

4.4 Electronic customs revenue system and service delivery

The second objective of the study was study was to determine how electronic customs revenue systems influenced service delivery at KRA station. The aim of e-customs systems introduction by KRA management was to improve revenue for the government and reduce costs of clearance by the exporters. Therefore, the respondents were asked to indicate the degree to which they agreed or disagreed with the statements measured in Likert scale of five

(Strongly Disagree-1, Disagree-2, Undecided-3, Agree-4 and Strongly Agree-5). The results of analysis are presented in Table 4.8.

Table 4.8 Electronic customs revenue system and service delivery

Statements	SA	A	U	D	SD	M	SD
Confirmation of duties paid is confirmed instantly due to the use of e-customs revenue systems	19 (11.5%)	114 (69.1%)	22 (13.35)	10 (6.1%)	0 (0.0%)	3.8606	.68873
The owners of the goods can pay their duties at the comfort of their homes/offices electronically	19 (11.5%)	98 (59.4%)	26 (15.8%)	22 (13.3%)	0 (0.0%)	3.6909	.84549
Electronic payments augment electronic filling	12 (7.3%)	44 (26.7%)	109 (66.1%)	0 (0.0%)	0 (0.0%)	3.4121	.62458
We have been able to cut costs as a result of using e-customs revenue systems	12 (7.3%)	47 (28.5%)	90 (54.5%)	16 (9.7%)	0 (0.0%)	3.3333	.75169
Overhead costs that may affect the cost of imports have greatly minimised through use of e-customs	10 (6.1%)	30 (18.2%)	39 (23.6%)	86 (52.1%)	0 (0.0%)	2.7818	.95043
We can make more clearances on products due to use of e-customs resulting to more taxes to KRA	0 (0.0%)	44 (26.7%)	16 (9.7%)	99 (60.0%)	6 (3.6%)	2.5939	.92326
Composite scores						3.2788	0.79736

Key: SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree, SD=Strongly Disagree, M-Mean and SD-Standard Deviation.

Research findings shows most 114 (69.1%) of respondents agreed that confirmation of duties paid is confirmed instantly as a result of e-customs revenue system installation. This shows that majority of respondents tended to agree with the statement based on means and standard deviation statistics (M=3.86 and SD=0.68). This indicates that exporters/clearing agents do not have actually to wait in queues for their duties paid to be confirmed but the system

available confirms the dues paid instantly. This reduces incidents of corruption and accountability occasioned by irregular payments that are actually not receipted in the organisation account. Secondly, 98 (59.4%) of respondents agreed that owners of cargo can pay their duties and taxes at their convenience through use of electronic payment methods, only 22 (13.3%) disagreed and 26 (15.8%) were undecided. This shows that respondents agree ($M=3.69$ and $SD=0.84$) that payment of duties and taxes has been simplified as one does not need to go to banking halls for them to make payments. This implies that queues associated in the banking halls are reduced because the exporters can pay at their convenience. When someone makes electronic payment, incidents thefts are minimally reduced and accountability is enhanced.

Research findings showed that 109 (66.1%) of respondents were undecided on the statement that electronic payments augmented electronic filing systems. This shows that these two systems have not yet been linked and therefore clients have to file their declarations then make payments later. Only 44 (26.7%) agreed and 12 (7.3%) strongly agreed with the statement. Majority of respondents were undecided ($M=3.41$ and $SD=0.62$) on the statement. This shows that the system has not been linked with the filling systems inconveniencing exporters. Furthermore, the finding also showed that 90 (54.5%) of respondents were undecided on the notion that they have been able to reduce costs because of use of e-customs. Only 47 (28.5%) agreed and 12 (7.3%) strongly agreed and 16 (9.7%) disagreed. This shows that respondents were unsure ($M=3.33$ and $SD=0.75$) that they had been able to cut costs as a result of using e-customs revenue systems. This indicates that some believe they have cut costs while others have not yet cut costs. It was also revealed that 86 (52.1%) of respondents disagreed that overhead costs have greatly been minimised through use of e-customs, 10

(6.1%) strongly agreed, 30 (18.2%) agreed and 39 (23.6%) were undecided. This shows that respondents undecided (M=2.78 and SD=0.95) that overheads costs which affect the cost of importation have been greatly minimised due to the use of e-customs. This shows that to some respondents, e-customs payment has reduced overhead costs to some exporters while others it has not.

On whether they had opportunity to make more clearances on products due to use of e-customs resulting to more taxes to KRA, 44(26.7%) agreed, 16 (9.7%) were undecided, 99 (60.0%) disagreed and 6 (3.6%) strongly disagreed this statement. this shows that respondents were undecided (M=2.59 and SD=0.92) on the statement. This implies that despite the use of e-payment systems, clearance of good has increased moderately. This implies that clearances of products needs to be fully digitized to minimise delays and increases revenue for the government. Average statistics shows that the respondents were undecided (M=3.27 and SD=0.79) that electronic customs revenue systems has improved service delivery at KRA Eldoret station. This indicates that electronic customs revenue systems have moderate effect on service delivery at Eldoret KRA station. To answer the second research question, a chi square analysis was computed.

The results are presented in Table 4.9.

Table 4.9 E-customs revenue and Service delivery cross tabulation

		Service delivery			Total	
		Low	Moderate	High		
e-customs revenue	Moderate	Count	0	118	0	118
		% within e-customs revenue	.0%	100.0%	.0%	100.0%
	Occasionally	Count	4	27	16	47
		% within e-customs revenue	8.5%	57.4%	34.0%	100.0%
Total		Count	4	145	16	165
		% within e-customs revenue	2.4%	87.9%	9.7%	100.0%

Result show that for those who indicated that they used e-customs revenue system moderately, their service delivery standard was moderately 118 (100%). While those who indicated that they occasionally used e-customs revenue systems, service delivery was moderate for 27 (57.4%) of respondents and high for 16 (34.0%) of respondents. This implied that when e-customs revenue is regularly used, service delivery standards increased. Zhou & Madhikeni, 2013 argue that with increased need of generating and increasing of revenue by the government tax revenue collections becomes the major contributor to this thus better mechanisms to maximize this collection are needed. Electronic customs revenue systems have been verified to assist in making sure that this targets are achieved.

4.5 Electronic customs risk analysis system and service delivery

One of the aims of introducing e-customs systems by KRA was to reduce risks associated with cargo clearance that can have significant effects on the economy of the country. Therefore, this study sought to get respondents opinion on how e-customs risk analysis system influenced service delivery at KRA station. Therefore, the respondents were asked to indicate the degree to which they agreed or disagreed on the influence of electronic customs risks analysis system and service delivery. The statements were measured on a Likert scale of five; (Strongly Disagree-1, Disagree-2, Undecided-3, Agree-4 and Strongly Agree-5). The results of analysis are presented in Table 4.11.

Table 4.11 Electronic customs risk analysis system and service delivery

Statements	SA	A	U	D	SD	M	SD
reduced risks associated with clearance of products	70 (42.4%)	73 (44.2%)	22 (13.3%)	0 (0.0%)	0 (0.0%)	4.2909	.68981
transparency assessment of duties and taxes	50 (30.3%)	99 (60.0%)	16 (9.7%)	0 (0.0%)	0 (0.0%)	4.2061	.59977

Elimination of the need for face to face interaction between customs officials and traders reduces corruption incidents	59 (35.8%)	52 (31.5%)	22 (13.3%)	22 (13.3%)	10 (6.1%)	3.7758	1.23640
Pre-arrival processing and post-clearance audit reduces fraud and improves revenue	16 (9.7%)	106 (64.2%)	33 (20.0%)	10 (6.1%)	0 (0.0%)	3.7758	.70149
IT systems determines whether goods will be declared green, red, yellow or blue channel during clearance	64 (38.8%)	30 (18.2%)	26 (15.8%)	35 (21.2%)	10 (6.1%)	3.6242	1.34505
KRA staff regularly use risk management systems	14 (8.5%)	14 (8.5%)	50 (30.3%)	87 (52.7%)	0 (0.0%)	2.7273	.93941
Composite scores						3.7334	0.91866

Results show that 70 (42.4%) of respondents strongly agreed and 73 (44.2%) agreed that use of e-customs has led to reduction in risks associated with clearance of cargo. Only 22 (13.3%) were undecided suggesting that risks have been greatly reduced when clearing goods at the customs station due to the use of e-customs (M=4.29 and SD=0.68). This shows that products are cleared well with minimal or no risk as a result of utilisation of e-customs risk analysis system.

Research result also revealed that 99 (60.0%) of respondents agreed that transparency assessment of duties and taxes has been improved due to the use of e-customs. The descriptive statistics show that respondents agreed (M=4.21 and SD=0.59) with the statement. This is because, the system can be able to detect if there is anomaly when products are being applied for clearance. The certificate of origin which is shared

electronically ensures that duties and taxes charged on products are correct. Results also showed that 59 (35.8%) of respondents strongly agreed, 52 (31.55) agreed, 22 (13.3%) were undecided, 22 (13.3%) disagreed and 10 (6.1%) strongly disagreed that e-customs risk management has led to elimination of the need for face to face interactions which reduces incidents of corruption. Therefore, Respondents appeared to agree ($M=3.77$ and $SD=1.23$) with the statement. This is due to the fact that it is not necessary for the clearing agents or exporters to meet in person with custom officials thereby reducing incidents where bribing or corruption can occur. This implies that the incidents of corruption have greatly been reduced through use of e-customs. Most 106 (64.2%) of respondents agreed that pre-arrival processing and post – clearance audit reduced fraud and improved revenue of the government and also to them. Descriptive statistics suggests that respondents tended to agree ($M=3.77$ and $SD=0.70$) with the statement. This implies that when products are processed prior to arrival and cleared, incidents of fraud are decreased between the exporters and customs officials from KRA. Furthermore, this suggests that frequent audits are conducted on products before they are released for export by manufacturers. A significant 64 (38.8%) strongly agreed and 30 (18.2%) agreed that the e-customs systems installed can be able to declare the goods using the following colour channels; red, yellow, blue or green when clearing them. This shows that respondents agreed ($M=3.62$ and $SD=1.34$) with the statement. This implies that products that have wrongly been cleared can be identified through use of ICT systems that have various colours to indicate the status of cleared products at KRA station. This is one of the main risk management method used by majority of countries in the world customs and revenue collecting organizations.

However, the 87 (52.7%) of respondents disagreed and 50 (30.3%) were undecided that KRA personnel in charge of customs regularly used risk management systems. The overall descriptive statistics suggests that respondents were undecided (M=2.72 and SD=0.93) on the statement. This implies that there is a problem among KRA staff towards embracing risks management systems and this may open avenues for malpractices and corruptions incidents. Composite statistics shows that respondents agreed (M=3.73 and SD=0.91) that electronic customs risks management systems influences service delivery to a higher extent. This suggests that organisation should strive to utilise e-customs risk management systems.

To answer the third research question for the study, a cross tabulation analysis was computed to check on the association between e-customs electronic risk analysis variable against service delivery. The results are presented in Table 4.12.

Table 4.12 Electronic Risk Analysis and Service delivery cross tabulation

			Service delivery			Total
			Low	Moderate	High	
Electronic risk analysis	Moderate	Count	0	43	0	43
		% within electronic risk analysis	.0%	100.0%	.0%	100.0%
	High	Count	4	98	12	114
		% within electronic risk analysis	3.5%	86.0%	10.5%	100.0%
	Very high	Count	0	4	4	8
		% within electronic risk analysis	.0%	50.0%	50.0%	100.0%
Total	Count	4	145	16	165	
	% within electronic risk analysis	2.4%	87.9%	9.7%	100.0%	

Results shows that for those who said that electronic customs risk analysis were moderate, 43 (100.0%) perceived service delivery to be on moderate level. For those who indicated that e-customs was highly used, 4 (3.5%) mentioned service delivery as low, 98 (86.0%) indicated that it was average and 12 (10.5%) said the level was high. While for those who mentioned

that e-customs risks analysis systems usage as high, 4 (50.0%) said service delivery was moderate and 4(50.0%) said that service delivery was high. This shows that as usage of e-customs risks analysis systems is being used, service delivery standard increases.

Biljan and Trajkov, 2016 agree with this findings by stating without monitoring system that are effective reliable then dishonest declaration of custom items and values is experienced, declaration and acceptance of misclassification, acceptance of illegal origin of cargo is done, release of import for processing, release of outward processing, illegal removal of products from being supervised by customs and not declaring import goods for customs clearance is experienced. With monitoring systems in place such discrepancies become minimal thus maximized revenue collection based on the actual declared portfolio.

4.6 Electronic customs monitoring system and service delivery

It is necessary that goods released for export to other countries are monitored so that they are not diverted to the local market. This calls for efficient customs monitoring and tracking system. The fourth objective of this study was to determine how e-customs monitoring systems influenced service delivery at Eldoret KRA station. Therefore, the respondents were asked to indicate their level of agreement or disagree on the influence of e-customs monitoring systems and service delivery. The following Likert scale was used: Strongly Disagree-1, Disagree-2, Undecided-3, Agree-4 and Strongly Agree-5. The results of analysis are presented in Table 4.14.

Table 4.13 Electronic customs monitoring system and service delivery

Statements	SA	A	U	D	SD	M	SD
A carrier that has been tampered can be inspected away from the destination port to prevent potential	115 (69.7%)	14 (8.5%)	36 (21.8%)	0 (0.0%)	0 (0.0%)	4.4788	.83072

negative impact or destruction							
Use of e-customs has led to reduction in deterioration theft, diversion and counterfeiting	75 (45.5%)	54 (32.7%)	26 (15.8%)	10 (6.1%)	0 (0.0%)	4.1758	.91032
Use of e-customs monitoring system leads to a more efficient and individual container traceability	50 (30.3%)	93 (56.4%)	22 (13.3%)	0 (0.0%)	0 (0.0%)	4.1697	.64035
The capability to establish responsibility in case of thefts or damage to goods leads to reduction of costs of insurance claims and lowering of insurance premiums	71 (43.0%)	58 (35.2%)	26 (15.8%)	0 (0.0%)	10 (6.1%)	4.0909	1.06392
Real time monitoring and remote containers tracking help to prevent thefts of cargo	18 (10.9%)	117 (70.9%)	16 (9.7%)	4 (2.4%)	10 (6.1%)	3.7818	.89764
E-customs system allows real time monitoring of the status of products and goods movement	12 (7.3%)	75 (45.5%)	64 (38.8%)	4 (2.4%)	10 (6.1%)	3.4545	.90023
Composite scores						4.0253	.87386

Research findings shows that 115 (69.7%) of respondents strongly agreed that a carrier that has been tampered can be inspected away from the destination port to prevent potential negative impact and potential destruction. The result suggest that respondents strongly

agreed (M=4.47 and SD=0.83) with the statement. This monitoring ensures that products move safely from their point of departure to the destination as it is done in conjunction with other revenue authorities from other countries. The use of cargo tracking has ensured that products on transit are safe since they are monitored 24/7 through the electronic cargo monitoring system.

It was also evident that 75 (45.5%) of respondents strongly agreed and 54 (32.7%) agreed that use of e-customs has reduced incidents of thefts, diversion of cargo from their intended destination and counterfeiting. Descriptive statistics suggests that respondents agreed (M=4.17 and SD=0.91) with the statement. This process has ensured that the products being sold to consumers have been inspected and declared that they are fit for public consumption. The process is done through cooperation with other agencies like the energy regulation commission. This shows that respondents agreed that thefts, diversion of products from their point of destination and adulterated fuel have significantly been control through use of e-customs monitoring systems.

It was also evident from the findings that most 93 (56.4%) of respondents agreed that utilisation of e-customs monitoring systems has led to efficiency in tracing of containers. This shows that majority of respondents agreed (M=4.16 and SD=0.64) with the statement. This shows that e-customs monitoring system ensures that containers can be located within a shorter period of time in times when they have been diverted while on transit. Research results also showed that 71 (43.0%) of respondents strongly agreed and 58 (35.2%) agreed that e-customs systems has the ability to determine responsibility in case of theft or damage which reduce insurance costs and lowers premiums to be paid. Only 26 (15.8%) were

undecided and 10 (6.1%) strongly disagreed with the statement. The descriptive results suggests that respondents agreed (M=4.09 and SD=1.06) with the statement. This has reduced costs associated with theft that usually hurt the exporter. Therefore, the use of e-customs monitoring systems has led to reduction in insurance claims and lowered insurance premiums because it can easily identify the persons responsible for damage or theft quickly. Furthermore, majority 117 (70.9%) of respondents agreed that real time remote placed tracking gadgets fitted on the containers assist to prevent thefts or diversion of goods on transit. This shows that majority of respondents also agreed (M=3.78 and SD=0.89) with the statement. This is because the trackers are installed in places where the truck drivers or their owners do not know and therefore reducing incidents of it being switched off. Moreover, the real time monitoring increases confidence of exporters with the e-customs systems on tracking and monitoring goods on transit. Lastly, 75 (45.5%) of respondents agreed and 64 (38.8%) were undecided on the issue that e-customs allows real time monitoring of status of cargo movement while on transit. This shows that respondents agreed (M=3.45 and SD=0.90) that e-customs allows real time monitoring of the status of products and goods movement while on transit. To answer the fourth research question for the study, a cross tabulation analysis was computed.

The findings are presented in Table 4.14.

Table 4.14 E-customs monitoring and Service delivery cross tabulation

		Service delivery			Total	
			Low	Moderate	High	
E-customs monitoring	Low	Count	0	10	0	10
		% within e-customs monitoring	.0%	100.0%	.0%	100.0%
	Moderate	Count	0	22	0	22
		% within e-customs monitoring	.0%	100.0%	.0%	100.0%
	High	Count	4	54	4	62

		% within e-customs monitoring	6.5%	87.1%	6.5%	100.0%
	Very high	Count	0	59	12	71
		% within e-customs monitoring	.0%	83.1%	16.9%	100.0%
Total		Count	4	145	16	165
		% within e-customs monitoring	2.4%	87.9%	9.7%	100.0%

Research findings shows that for those who said that e-customs monitoring systems was lowly used, 10 (100.0%) indicated that service delivery was moderate, while those who indicated that e-customs monitoring was averagely used, 20 (100%) said that service delivery standard was high, while for those who said that e-customs monitoring was high, 4 (6.5%) said service delivery was low, 5 (87.1%) indicated to be on moderate and 4 (6.5%) said it was high. For those who said that e-customs monitoring was highly used, 59 (83.1%) said that the service standard was moderate and 12 (16.9%) said that it was high. The result therefore indicates that for improvement in service delivery levels, e-customs monitoring systems have to be continuously emphasised to be used.

This findings are supported by OECD, 2005 where they state that good monitoring system is based on the standard of allowing those affected by it to get services and information at their convenience and way through which they want. User-focused customs revenue system demand understanding of user needs and capacity to provide services based on their. In order for the monitoring system to be built on these user needs, public agencies must be involved in every stage of function life cycle (identification of people wants, the sketch of services, performance assessment, service delivery and evaluation) (WEF, 2011).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings on influence of electronic customs management system and service delivery at KRA Eldoret, Kenya. The chapter also presents the conclusions of the study, recommendations, implications and suggestions for future research.

5.2 Summary of Findings

The aim of this study was to establish how adoption and use of electronic customs management systems influenced service delivery at KRA Eldoret station. The study collected quantitative and qualitative information from KRA officers in charge of customs, exporters, truck drivers and clearing and forwarding agents. Demographic results showed that the respondents understood the concept of e-customs management systems. The main goods cleared at the station are petroleum products. The study found out that more than 93.9% of respondents had been working for more than 3 years. In addition, 84.2% indicated that they were aware of the automated system for customs data.

5.2.1 Electronic customs clearance system and service delivery

The first objective of this study was to investigate how e-customs clearance systems affected service delivery at Eldoret, KRA station. Research findings showed that the respondents were undecided ($M=3.26$ and $SD=0.99$) on the influence of electronic revenue systems and service delivery at Eldoret KRA station. They only agreed that e-customs clearance systems had shortened long procedures needed for proper documentation, e-customs clearance system

was available 24/7s and custom location and product location did not have to be similar. However, the respondents were dissatisfied with the delay in receiving feedback when using e-customs clearance systems and not all paper work has been reduced as a result of automation. Computed chi square statistics revealed that there existed significant relationship ($\chi^2 (4) = 42.286, p < 0.01$) between use of e-customs clearance systems on service delivery at Eldoret KRA station. This implied that e-customs clearance procedures had moderate effect on service delivery.

5.2.2 Electronic customs revenue system and service delivery

The second objective of the study sought to determine how electronic customs revenue system and service delivery at Eldoret KRA station. The adoption of e-customs systems was aimed at improving revenue generated from taxes and duties paid on fuel products exported to neighbouring countries. It was found out that confirmation of duties paid is verified instantly thereby reducing time required for one to be manually confirmed by customs officers on payment done. This brings also satisfaction to truckers, clearing and forwarding agents and exporters. It was also established that as a result of migrating to e-customs, owners of petroleum products can pay their duties at the comfort of their workplaces or homes. This aspect improved revenue generated by the station towards meeting organization targets. The respondents appeared to be unsure on the statement that electronic payments augmented electronic filing.

The issue of exporters cutting costs as a result of using e-payment for duties and taxes had marginally been achieved. In addition overhead costs which affects the cost of important had not been significantly reduced ($M=2.78$ and $SD=0.95$). Some agreed that it has lowered

costs because; there is no need for an additional material (documentation) when doing customs declaration procedure and that there was less purpose for keeping shipment which translates to less warehousing costs. Cross tabulation statistics showed that whenever, e-customs revenue systems was used occasionally, service delivery increased to a higher level by 34.0%. This was further justified by chi square statistics that showed that there existed significant association ($\chi^2 (2) = 57.132$ $p < 0.01$) between e-customs revenue systems and service delivery standards at KRA. This was because electronic presentation of manifests, records, payment of taxes was confirmed electronically by banks. This ensured that incidences of malpractices were reduced. The system also generates real time revenue and trade statistics for decision making purposes by customs authorities' management.

5.2.3 Electronic customs risk analysis system and service delivery

Risk management is the organised identification and implementation of various strategies aimed at limiting contact with risks associated with customs. This process may enhance compliance of traders with regulations hence facilitating trade by customs. The third objective of the study was to investigate the influence of electronic customs risk analysis system on service delivery at Eldoret KRA station. Research findings showed that regular use of e-customs risk analysis resulted to reduction in risks associated with clearance of products. It was also found out that use of e-customs risk analysis provided a crucial instrument for lucidity evaluation of taxes and other duties. The use of e-customs has also eliminated the need for face - to face interaction between traders and custom officers thereby reducing incidents of corruption.

Computed chi square statistics ($\chi^2(4) = 21.513$ $p < 0.01$) showed that there existed significant relationship between electronic customs risks analysis system and service delivery at Eldoret KRA station. This implied that continuous usage of risk analysis system helped improved service delivery levels at the organisation.

5.2.4 Electronic customs monitoring system and service delivery

The fourth objective of the study was to determine the influence of electronic customs monitoring systems on service delivery at Eldoret KRA station. Research findings showed that majority of respondents agreed that e-monitoring systems influenced service delivery. For instance, the respondents indicated that electronic cargo tracker system can be used to inspect cargo away from destination port to avert possible damaging impact and thieves' destruction. The respondents also agreed ($M=4.17$ and $SD=0.91$) that use of e-customs has led to reduction in thefts, counterfeiting and diversion of products meant for export to other East African Community countries and Democratic Republic of Congo (DRC).

Computed chi square statistics showed that there exist significant relationship ($\chi^2(6) = 14.946$ $p < 0.01$) between e-customs monitoring systems and service delivery at Eldoret KRA station. This implied that continuous monitoring of cargo electronically increased service delivery standard to KRA clients. The respondents agreed that goods tracking and monitoring system facilitated flow of accurate and well timed timely information across all parties involved like; government agencies and supply chain partners. This led to optimisation logistics procedures in handling containers. The capacity to ability ascertain liability in case of theft or damage, merit to end to end container monitoring result to reduction in insurance claims costs and may lesson insurance premiums.

5.3 Conclusion

The study was conducted to determine the influence of e-customs management systems on service delivery at Eldoret KRA station. Research findings established that e-electronic customs management systems utilised by KRA at Eldoret station involved; clearance systems, revenue systems, risk analysis system and monitoring system. Composite mean computed showed that the respondents agreed that e-customs monitoring systems (M=4.02 and SD=0.87) and e-customs risk analysis systems (M=3.73 and SD=0.91) had higher influence on service delivery to truck drivers, clearing and forwarding officers and exporters compared to e-custom clearance system (M=3.26 and SD=0.99) and e-custom revenue system (M=3.27 and SD=0.79) which had moderate influence. This showed that e-custom risk analysis and monitoring systems had impacted highly on service delivery compared to e-customs clearance and revenue system. This was due to the fact that the respondents indicated that the customs officials were inadequate and incidents of corruption were still prevalent. It was also observed that not all activities relating to clearance of products at the authority had migrated to e-filing as traders were required to use paper-based methods. In general, the study established that there is a significant influence ($p < 0.05$) between electronic customs management systems and service delivery standards at KRA Eldoret station.

5.4 Contribution to body of Knowledge.

Table 5.1: Contribution to body of knowledge

Objective	Contribution to knowledge
To establish the influence of electronic customs clearance system on service delivery at Eldoret KRA station.	Despite the provision of proper clearance systems within this terminals, the laid down procedures with regards to clearance are not followed thus need for more accountability from the concerned quarters.
To identify the influence of Electronic customs revenue system on service delivery at Eldoret KRA station.	KRA has invested a lot of resources on the e-customs platform, despite all these resources being used, it has not been able to maximize the output required thus need for through audit of the systems involved.
To assess the influence of electronic customs risk analysis system on service delivery at Eldoret KRA station.	The authority has been able to acquire state of the art technologies to make sure it operates effectively but a lot of risks have emerged from all the stakeholders involved thus need for a more elaborate risk analysis framework to seal the available loopholes.
To determine the influence of electronic customs monitoring system on service delivery at Eldoret KRA stations.	KRA ha monitoring systems used to determine what is brought into the country but despite this it has been difficult in refraining illegal items from entering the country. With this loopholes, KRA should be able and hold all those involved accountable.

5.4 Recommendations

Based on the findings of the study, the researcher makes the following suggestions for practical and policy action by the concerned authorities.

1. To improve on the e-customs clearance system, there is need for KRA to ensure that all their clearance process are digitized through e-filing. This will reduce paperwork and delays associated with manual process that have not yet been transformed.
2. To improve on the revenue collected through e-customs revenue systems, there is need for KRA management to discipline employees found engaging in corruption related activities. This may be undertaken through training of both traders and its employees on the need for accountability and transparency during declaration of good and making duties and payments.
3. To mitigate risks associated with customs services, there is need for KRA to ensure that they upgrade their software frequently to minimise incidences of networks being jammed. This will ensure that declaration of products will not be shifted to manual methods.
4. To address issues of monitoring, there is need for KRA to ensure that they use work in collaboration with trucking companies on the adoption of latest tracking gadgets that cannot be easily tampered with. There is also need for KRA to hire more staff to ensure cargo is adequately assessed before being released for export or local market usage. This will prevent the entry of adulterated fuel in the local market.

5.5 Suggestions for Future Research

The study makes the following suggestions for further studies;

- (1) A similar study can be undertaken in other border customs offices of Busia, Malaba, Namanga, Lunga Lunga among others that are involved in import and exports of other products since this study focused on petroleum products,

- (2) A comparative research need to be undertaken to determine the effectiveness of Kenya e-customs systems and Uganda – ASCUDA on service delivery standards
- (3) A study on the influence of e-customs management on revenue collection by KRA in Kenya.

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Appendices

Appendix I: Letter of Transmittal

Evans Sakhasia
University of Nairobi
P. O Box
Eldoret.

Dear Respondent,

Re: Request To Fill A Research Questionnaire

My name is Evans Sakhasia, a postgraduate student at the University of Nairobi, Eldoret Sub-Centre. I am conducting carrying out a research on the following title “Influence of customs electronic management system on service delivery at Eldoret KRA station.” To enable me complete the work, I kindly request for your time to answer the questions attached with this letter. Please observe that all questions in the questionnaire are important in this study. The information you will give will be used purely for academic purposes, although important for those designing effective e-customs clearing processes. I would like to assure you of confidentiality. Your cooperation will be highly appreciated. Thank you in advance.

Yours Sincerely,

Evans Sakhasia

MAPPM Student

University of Nairobi-Eldoret Sub Centre

Appendix II: Questionnaire for Clearing Agents, Truckers and Exporters

Instructions

You are requested to fill in this questionnaire by giving your opinion. Do not indicate your name on the questionnaire booklet. Kindly please mark (√) in the box that matches your answer to the questions.

Section A: Demographic Data

1. What kind of business are you engaged in now?
 a) Exporter [] b) Truck driver [] c) Clearing Agent []
2. What kind of goods do you declare?

3. For how many years have you been engaged on this work?
 a) Up to 2 years [] b) From 3 to 5 years [] c) From 6 to 10 years []
 d) Above 10 years []
4. Do you know about the Automated System for Customs Data?
 Yes [] Somehow [] No []

Section B: Influence of Electronic Customs Clearance System on service Delivery

5. The following section seeks your view on the influence of electronic customs clearance on service delivery at KRA station, indicate the extent to which you agree or disagree on the statements provided in the table below.

Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
i. The e-clearance systems has shortened long procedures needed for paper documentation					
ii. E-customs service is available 24/7—not dependent on a customs working hours					
iii. The customs location and the location of the product do not have to be identical					
iv. The use of automation has reduced paper work					
v. There is seamless flow of data between KRA and exporter through use of e-customs					
vi. There is prompt feed back					

when using e-customs					
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Section C: Influence of Electronic customs revenue system on service delivery

6. The following section seeks your view on the influence of electronic customs revenue system on service delivery at KRA station, indicate the extent to which you agree or disagree on the statements provided in the table below.

Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
i. We can make more clearances on products due to use of e-customs resulting to more taxes to the KRA					
ii. We have been able to cut costs as a result of using e-customs revenue systems					
iii. Overhead costs which affect the cost of imports have been greatly minimized through use of e-customs					
iv. Confirmation of duties paid is confirmed instantly due to the use of e-customs revenue system					
v. The owners of the goods can pay their duties at the comfort of their homes/offices electronically					
vi. electronic payments augment electronic filling					

Section D: Influence of electronic customs risk analysis system on service delivery

7. The following section seeks your view on the influence of electronic customs custom risks analysis on service delivery at KRA station, indicate the extent to which you agree or disagree on the statements provided in the table below.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
i. The use of e-customs has reduced risks associated with clearance of products					
ii. Use of e-customs provide a crucial tool for transparency the assessment of duties and taxes					
iii. Pre-arrival processing and post-clearance audit reduces fraud and improves revenue					
iv. Elimination of the need for face-to-face interaction between customs officials and traders reduces corruption incidents					
v. IT system determines whether goods will be declared on green, red, yellow or blue channel during clearance					
vi. KRA staff regularly use risks management systems					

Section E: influence of electronic customs monitoring system on service delivery

8. The following section seeks your view on the influence of electronic customs monitoring system on service delivery at KRA station, indicate the extent to which you agree or disagree on the statements provided in the table below.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
i. E-customs system allows real time monitoring of the status of product and goods movements					
ii. Real time remote containers tracking and monitoring help to prevent losing track of container and goods					
iii. The ability to determine responsibility in case of damage or theft leads to reduce insurance claims costs and lower insurance premiums					
iv. Use of e-customs monitoring system leads to a more efficient and individual container traceability					
v. Use of e-customs has led to reduction in deterioration theft, diversion and counterfeiting					
vi. The tampered carrier can be inspected away from the destination port to prevent potential negative impact and potential destruction (when high jacked by terrorists)					

Section F: Service Delivery Levels at KRA Eldoret

9. What changes does the adoption of electronic customs clearance systems have brought in the following? (Please put \surd marks as per your perception of the service delivery system of KRA.)

	Very high	High	Average	Low	Very low
1 Efficiency of operations					
2 Effectiveness of operations					
3 Accountability					
4 Transparency					
5 Less bureaucratic					
6 Consistency					
7 Responsiveness					
8 Timely					
9 Concern about customers					

10. What can you say on the influence of e-customs use on service delivery at Eldoret KRA station?

.....

11. What are the challenges that you have encountered so far when using e-customs?

.....

.....

12. What can you recommend to be done to improve e-clearance?

.....

The end

Thank you for responding to questions

Appendix III: Interview Schedule for KRA Staff

Interview Questions

1. How long have you worked at KRA customs offices?
2. What has been your experience in e-customs usage?
3. What can you say on the performance of e-customs technology being used by KRA currently?
4. Are all employees working at customs competent to handles issues arising from the use of e-customs?
5. What can you say on the service delivery levels before and after implementation of e-customs?
6. What is your perception on the influence of electronic customs clearance system on service delivery at Eldoret KRA station?
7. What is your perception on the influence of Electronic customs revenue system on service delivery at Eldoret KRA station?
8. What is your perception on the influence of electronic customs risk analysis system on service delivery at Eldoret KRA station?
9. What is your perception on the influence of electronic customs monitoring system on service delivery at Eldoret KRA station?
10. What do you think needs to be done to improve the usage of e-customs on improving service delivery at Eldoret KRA station?

The end

Thank you for your time

Manuscript Information	
Manuscript Number (ID)	3528
Title	INFLUENCE OF ELECTRONIC CUSTOMS MANAGEMENT SYSTEMS SYSTEM ON SERVICE DELIVERY AT ELDORET KENYA REVENUE AUTHORITY STATION

Congratulations! The review process for the American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS) (ISSN (Print) 2313-4410 & ISSN (Online) 2313-4402) has been completed. The journal during its journey which started in 2010 received submissions from 50 different countries and regions, which were reviewed by international experts.

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by Evans Simiyu Sakhasia

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