EFFECTS OF TECHNOLOGY ACCEPTANCE AND MODERNIZATION PROGRAMS ON THE PERFORMANCE OF CUSTOMS OFFICERS, MOMBASA, KENYA

BY

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DECLARATION

Declaration by Candidate

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DEDICATION

There are a number of people without whom my work might not have been written and to who I am greatly indebted.

To my parents David and Elizabeth and family who have been a source of encouragement and inspiration throughout my life and to my son David Junior.

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ABSTRACT

The tax and customs automated system in KRA have continuously evolved in pursuit of the objectives of the Modernization Programme that came into force in 1986. The challenges that confront the tax authorities today include tax evasion, budget deficits, complex and cumbersome tax code among others. Numerous studies have been conducted on technology and modernization programs at KRA. However, they did not delve into the effects of technology acceptance and modernization programs on the performance of customs officers at KRA. This study intended to bridge the gap that exists. The purpose of this study was to establish the effects of technology acceptance and modernization programs on the performance of customs officers, Mombasa Kenya. The study focused on perceived ease of use and facilitating conditions as the independent variables, and performance as the dependent variable. The study adopted explanatory survey design with the aim of identifying any causal links between the variables that pertain to the research problem. The target population was employees of KRA in the 3 selected border points namely Mombasa international Airport, Kilindini and Lunga Lunga, based on the inflow and outflow of goods and parties involved in cross border trade. In this study however no sampling was done given the number of respondents is small, a census of all customs officials was conducted. The study relied on data collected through self-administered questionnaires structured to meet the objectives of the study. Statistical Package for Social Science (SPSS) version .20 was used to conduct both descriptive and inferential statistical analysis. The study found that perceived ease of use had a positive and significant relationship with performance of customs officers (β=0.544, p=0.000), facilitating conditions had a positive and significant relationship with the performance customs officers (β=0.499, p=0.000). Based on the findings, the study concluded technology acceptance and modernization programs had a significant and positive effect on the performance of customs officers. The study recommends that there is need for more training on technology and it should be offered so as to improve on the skills, knowledge and professional capacity of the employees as this will improve service delivery in terms of clearance and increased revenue. There is also need to conduct a study on the challenges facing technology acceptance at the border points in Kenya.

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ACRONYMS AND ABBREVIATIONS

CBK	Central Bank of Kenya
CPS	Customs Preventative Services
CRM	Customs Reform and Modernization
GDP	Gross Domestic Product
GoK	Government of Kenya
IS	Information System
IT	Information Technology
JKIA	Jomo Kenyatta International Airport
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KRA	Kenya Revenue Authority
MIT	Massachusetts Institute of Technology
PEOU	Perceived Ease of Use
PSI	Pre-Shipment Inspection
PU	Perceived Usefulness
RARMP	Resource Mobilization Modernization Program
SPSS	Statistical Package for Social Sciences
TAM	Technology Acceptance Theory
TRA	Theory of Reasoned Action
TTF	Task-Technology Fit
UTAUT	Unified Theory of Acceptance and Use of Technology
VAT	Value Added Tax

DEFINITIONS OF OPERATIONAL TERMS

Adoption — Decision to acquire and use an existing idea, innovation or technology as the preferred course of improving performance (Kuuya, 2015)

Facilitating Conditions — Extent to which an individual perceives that technical and organizational infrastructure required to use intended system are available (Kamal, 2012).

Perceived Ease of Use — Perceived ease of use is the degree to which the person believes that using a particular system will be free from of effort (Azmi & Bee, 2011)

Perceived Use — The degree to which a person believes that a particular technology will enhance his performance (Azmi & Bee, 2011)

Social Norms — A person's perceptions of other people's acceptance, such as family, colleagues, friends, and significant others, who would influence the individual decision towards entrepreneurial intention (Tsai, Chang, and Peng, 2016)

Technology — An enabler or a vehicle to disseminate knowledge (Oye, Iahad and Ab.Rahim 2012)

Technology acceptance — How people accept and adopt some technology for use (Samaradiwakara and Gunawardena, 2014)

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter presents the background to the study, statement of the problem, Objectives of the Study, Hypothesis, Significance of the Study, Scope of the Study.

1.1 Background to the Study

Tax reform measures like payment of taxes via mobile money, taxation of real estate sector, single customs territory, transfer pricing and implementation of electronic cargo tracking system and a few others are mainly undertaken in order to restore buoyancy to revenues, strengthen modern taxes, and drastically reduce the complexity and lack of transparency of the system through changes in tax legislation, tax administration and minimal tax evasion (World Bank, 2013). Reforms may also address the issue of equity in the distribution of the tax burden as well as composition of the tax structure. There is, as well, the question of the administrative adequacy of the tax system-usually approached within the wider context of political structures and feasibilities. The WCO revised Kyoto Convention of 1999, which Kenya was a signatory besides another 144 countries, was an international convention on the simplification and harmonization of Customs procedures. It provided a framework and standards for processing goods in international commerce. It is in this backdrop of global trends that the KRA Customs Reforms and Modernization program was developed (Asala, 2012).

The revenue structures in Kenya have not been as productive as desired. Too often the growth in revenue has failed to catch up with the national budget, a situation that has occasioned huge government budget deficit between the demand and supply of public budgetary resources According to the CBK annual reports 2010- 2013, the Kenyan

Government budgetary operations in the fiscal year 2011/12 resulted in a budget deficit of Ksh 181.5 billion (5.5 percent of GDP) on commitment basis in the fiscal year 2011/12 (CBK Annual Report, 2013).

Government budgetary operations in the fiscal year 2012/13 resulted in a budget deficit of 6.8 percent of GDP on a commitment basis, compared with 5.5 percent in a similar period in the fiscal year 2011/12 and the target 8.9 percent for the review period (CBK Annual Report, 2013).. Both the Government revenues and expenditures increased but less rapidly than projected during the 2011/12 fiscal year. Slow growth of the economy and challenges in passing the VAT Bill were among factors that constrained tax revenue growth (CBK Annual Report, 2013). The growth in expenditure is attributed to the implementation of the new Constitution and higher salaries and wages awarded to the civil servants. Kenya's public and publicly guaranteed debt increased from 49.3 percent of GDP in June 2012 to 51.7 percent in June 2013. The increase is attributed to borrowing for infrastructure and a lower than expected growth performance (CBK Annual Report, 2013).

Modern reforms on the customs administration's programs are aimed at raising adequate revenues to finance public expenditures on social goods and services. The issue has grown in importance in light of the recent fiscal crises in most countries. According to Bird (2013) the fiscal crises have been proven to be the mother of tax reforms in most countries. The views of tax reform to mobilize tax revenues have been increasing in the field of public finance among the academia and international institutions because countries are faced with declining external assistance in general. The recent global crisis has put considerable strain on inflows of international resources which have effectively forced Kenya to focus on domestic resource mobilization. Modernization Program (RARMP) Revenue Administration Reform and

Modernization Program was commenced in 2004/05 with the objective of transforming Kenya Revenue Authority into a modern, fully integrated and client-focused organization (KRA, 2018). The customs reform and modernization (CRM) aimed at Enhancing and modernizing service delivery in customs services department (Asala, 2012).

Kenya has experienced significant changes in its economy over the last four decades unlike many other Sub-Saharan countries today, it is a high tax-yield country with a tax-to-GDP ratio of over 20 per cent. As a result, Kenya is able to finance a large share of its budget, while external donor finances are used to cover a much smaller share than in other countries of the region. Presently, external donors' aid forms a paltry 3.9% while the bulk of government expenditure is financed through taxation, which the government aims to keep at or above 22% of GDP (GoK, 2014). This however does not mean that Kenya has a high tax collection ration since its base is still extremely narrow.

According to Murithi and Moyi (2013), like most developing countries, Kenya has had to contend and still contends with the common problems that plague tax systems of developing countries. These, they identify to include, the existence of tax systems, with rates and structures that are difficult to administer and comply with and that are unresponsiveness both to growth and discretionary tax measures hence offering low tax productivity. This means that for the country to increase its revenue collection, it needs to modernize its collection policy and carry out the necessary tax reforms that will yield an increased tax base. It is for this reasons that the study will focus on determining the mediating effect of social norm on the relationship between

technology acceptance and adoption of the modernization programs in Kenya's customs administration.

1.1.1 Kenya Revenue Authority

The Kenya Revenue Authority (KRA) was established by an Act of Parliament, Chapter 469 of the laws of Kenya, which became effective on 1st July 1995. The Authority is charged with the responsibility of collecting revenue on behalf of the Government of Kenya and its main purpose is the assessment, collection, administration and enforcement of laws relating to revenue. Since its inception, Kenya Revenue Authority faced a number of challenges that generally required enhancement of professionalism in revenue administration. It has increasingly introduced changes in its activities every succeeding year through reform strategies which are enunciated in its three-year corporate plans. Its second corporate plan included strategies to address these challenges and it actuated the Revenue Administration Reform and Modernization Program (RARMP) which commenced in 2004/05 with the objective of transforming Kenya Revenue Authority into a modern, fully integrated and client-focused organization (KRA, 2018).

The RARMP included the Customs Reforms & Modernization Project, the Domestic Taxes Reform & Modernization Project, the Road Transport Reform & Modernization Project, Investigation & Enforcement Reform & Modernization project, KRA Infrastructure Development Project, KRA Business Automation Project and the Human Resource Revitalization Project (KRA, 2018).

According to Aliet (2008), the aforementioned Customs reform and modernization project comprised the following sub-projects: Customs replacement system; Review of Customs procedures and processes; Implementing an Electronic Cargo tracking

system; Scanner imaging systems implementation; Direct banking; Community Based System; Taking-over from Pre Shipment Inspection(PSI) Companies; Patrol boats & Helicopter; Restructuring of CPS (Customs Preventative Services); K9 section; Preparation of Excise Act.

1.2 Statement of the Problem

Although the tax system in KRA has continuously changed, in pursuit of the objectives of the Tax Modernization Programme that came into force in 1986, the challenges that confront the tax authorities today are not much different from the pre-reform challenges. Tax evasion remains high, with a tax gap of about 35% and 33.1% respectively (KIPPRA, 2004). The tax code is still complex and cumbersome, characterized by uneven and unfair taxes, a narrow tax base with very high tax rates and rates dispersions with respect to trade, and low compliance (KIPPRA, 2004).

Attempts have been made to understand the effect of custom reforms and modernization programs such by Ondiek (2013); Atambo and Katuse (2017); Munene and Nduruhu (2016); Gitaru (2017); Asala (2012); Wambua (2008); Odundo (2007); and Aliet (2008). While these studies attained their objectives, they did not delve into the effects of technology acceptance and modernization programs on the performance of customs officers in Mombasa, Kenya. This study intended to bridge this gap in knowledge that exists.

Kenya Revenue Authority is charged with the responsibility of collecting revenue on behalf of the government, having this in mind it has faced a few bottle necks such as tax evasion which in turn stalls revenue collection. This has been addressed through different phases of modernization reform programs over the years , including; Turn over tax, payment of taxes via mobile money, single customs territory, taxation of real

estate, transfer pricing, electronic cargo tracking system, transfer pricing, county taxation, integrated tax management systems and dynamic risk management systems which require trainings and infrastructure which KRA has embarked on.

This study focused on two main variables: Perceived Ease of Use and facilitating conditions. The technology acceptance is important to improve adoption of technology. Cho and Sagynov (2015) investigate the effects of PEOU on technology and concluded that it affects behavioral intentions. Alraja (2016) found that facilitating conditions have a significant effect on employees to adopt the technology in companies. Therefore, there is need to study the relationship between technology acceptance and adoption of the modernization programs in customs administration in Kenya hence this study.

1.3 Objectives of the Study

1.3.1 General objective

The objective of this study was to determine effects of technology acceptance and modernization programs on the performance of customs officers in Mombasa, Kenya.

1.3.1 Specific Objectives

The study was guided by the following specific objectives:

i) To establish the relationship between Perceived Ease of Use of technology and the performance of customs officers in Mombasa, Kenya

ii) To determine the relationship between facilitating conditions and the performance of customs officers in Mombasa, Kenya

1.4 Hypothesis

The study was guided by the following hypotheses:

H_{01}: There is no significant relationship between Perceived Ease of Use of technology and the performance of customs officers in Mombasa, Kenya

H_{02}: There is no significant relationship between facilitating conditions and the performance of customs officers in Mombasa, Kenya.

1.5 Significance of the Study

Revenue authorities such as Kenya Revenue Authority will have a better understanding of effects of technology acceptance and modernization programs on the performance of customs officers especially as a point of reference as far as assisting in decision making regarding the technology acceptance and adoption of the modernization programs leading to better revenue performance. This research will provide valuable lessons learnt in the implementation of the Customs Reform and Modernization program.

Aid tax practitioners, policy makers, firms and individuals adopting the ever-changing tax systems and laws gain an insight on the effects of technology acceptance and modernization programs on performance of customs officers. If the recommendations of this study are put into practice by the relevant authorities, the country stands to benefit a great deal from an improved tax reforms in terms of instituting better reforms for better revenue performance.

Provide additional information for the already existing body of literature regarding the effects of technology acceptance and modernization programs on the performance of customs officers and provide basis for further research. The findings of this study will

enrich existing knowledge and hence will be of interest to both researchers and academicians who seek to explore and carry out further investigations.

1.6 Scope of the Study

The study took 5 months (April- August 2019), focusing on the customs administration in selected border points in Kenya. The study was conducted in 3 border points in Mombasa region namely Kilindini, LungaLunga, Moi International Airport based on the inflow and outflow of goods and parties involved in cross border trade. The unit of analysis was government employees offering customs services from the selected border point.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter examines and presents an increasing body of knowledge pertaining to technology acceptance and adoption of the modernization programs. The chapter therefore provides theoretical and empirical information from publications on topics related to the research problem. It begins with a theoretical review where a number of theories that explain the

Effects of technology acceptance on the performance of customs officers are discussed in length. An empirical review is thereafter provided where previous studies on technology acceptance and adoption of the modernization programs are presented and discussed.

2.2 Concepts of the Study

2.2.1 Employee performance

Employee performance embodies the whole belief of the employee about their conduct and contributions to the accomplishment of the organization (Ahmad & Shahzad, 2011). Similarly, Anitha, (2013) define employee performance as an indicator of financial or other outcome of the employee that has a direct connection with performance of the organization as well as its achievement, further revealed that working atmosphere, leadership, team and co-worker relationship, training and career development, reward programme, guidelines and procedures and workstation wellbeing as well as employee engagement are major factors that determine employee performance. Employee performance brings about firm performance as a whole, in such a way that successful effort of fulfilled, inspired, and devoted human resources produce innovative ideas for new products or services and increase quality

performance, operative performances, and client satisfaction directly (Sadikoglu & Cemal, 2010).

Furthermore, employee performance is associated with quantity of output, quality of output, timeliness of output, presence/ attendance on the job and efficiency of the work completed (Mathis & Jackson 2009). It is the successful completion of tasks by a selected individual or individuals, as set and measured by a supervisor or organization, to pre-defined acceptable standards while efficiently and effectively utilizing available resource within a changing environment. Alagaraja1 and Shuck (2015) disclose that employee performance can be measured by means of regular training and improvement. In addition, Thomas and Feldman, (2010) take on measures of employee performance as core job performance, that includes in-role performance, security performance, and inventiveness, trailed by citizenship performance, branded into equally targets-specific and wide-ranging organizational citizenship. In the current study, employee performance was measured in terms of accomplishment of tasks, increased output and improved efficiency.

2.2.2 Technology acceptance

Technology Acceptance refers to how people accept and adopt some technology for use (Samaradiwakara and Gunawardena, 2014). The Technology Acceptance Model (TAM) assumes that individuals are more likely to use computers if they see positive benefits from their use. In 1986, Fred Davis developed the TAM foundation to explain how and when users decide to accept and use a technology. The main elements of Davis's TAM model are perceived usefulness and perceived ease of use. The model suggests that when users are presented with a new software package, perceived usefulness and perceived ease of use influence their decisions about how and when they will use the new software.

Recently, numerous studies have been conducted using the original TAM—or an extended version of TAM—to examine the usage of IT. For example, Davis, Bagozzi, and Warshaw (1989) examined an intention model called the Theory of Reasoned Action (TRA) with TAM to discover "synthesizing elements of the two models in order to arrive at a more complete view of the determinants of user acceptance." Taylor and Todd (2001) extended, integrated, and compared the TAM model with two variations of the Theory of Planned Behaviour (TBP) to determine which model is the most helpful in understanding the technology usage. Venkatesh, Morris, Davis, and Davis (2003) extended TAM, building a new model called Unified Theory of Acceptance and Use of Technology (UTAUT), which helps managers assess the likelihood of technology success as well as understand the drivers of technology acceptance.

2.2.3 Perceived ease of use

Perceived Ease of Use refers to when users facing difficulties in using technology due to the complicated features or too many steps involved, might resist using the system (Davis, 1989). Davis also defines Perceived ease of use as the degree to which a person believes that using a particular system would be free of effort. For instance, a research done by Salman et al. (2014) stated that ease of use can influence the attitude of support staff either directly or indirectly towards usage of technology. In other words, ease of use determines the expectations of employee towards technology. Other research done by Bugembe (2010) which stated that the technology acceptance model can identify why users accept or reject information technology and how user's acceptance is influenced by system. Employees expect that technology could be user friendly and easy to be used in order to assist them to perform their work better.

Further, PEOU involves an individual's assessment of the effort involved in using a system (Lee et al., 2012). In the current study perceived ease of use refers to the degree to which customs system is perceived as easy to understand and operate by customs employees. It is submitted in this study that when users anticipate effortless experience when utilizing custom system, it is likely that they will end up trusting that system. Besides, the custom system perceived ease of use is likely to trigger the intention to use it. Therefore, it can be expected that the more the users anticipate effortless use of the custom system, the more they are likely to trust and consequently use the system. Previous studies have supported a positive relationship between perceived ease of use and trust (Schepers & Wetzels, 2007), which results to enhanced employee performance.

2.2.4 Facilitating conditions

Facilitating Conditions is defined as extent to which an individual perceives that technical and organizational infrastructure required to use intended system are available (Kamal, 2012). According to Venkatesh et al. (2003), it is the believe that an organizational and technical infrastructure exists to support the system. Many scholars (Chang et al., 2007; Chau and Hu, 2002) found that facilitating conditions have a positive effect on the use of technology. Al-Shafi (2010) observed that facilitating conditions had a direct correlation with e-government adoption. Based on the current study, if custom employees are able to access required resources, as well as to gain needed knowledge and having the necessary support to use information technology infrastructure, they will be more likely to perform better.

Facilitating conditions such as resources availability, skills as well as technical infrastructure could play a significant role towards custom system use among custom officers. Availability of technical and organisational infrastructure required to use a

system represents the facilitating conditions, which could be said to play a critical role and have direct impact on the use of any system. Facilitating conditions, therefore, represents potential factor that could influence custom officers to use custom system (Hamzat & Mabawonku, 2018). The current study provides valuable insight into the influence of facilitating conditions on performance of custom officers.

2.3 Theoretical Review

2.3.1 Technology acceptance theory

This theory was advanced by Venkatash & Davis 2000 & Venkatesh 2000. It outlined perceived usefulness and usage intentions as it related to the processes of social influence and cognitive instrumental. Venkatesh and Davis reported that perceived usefulness is based on usage intentions in many empirical Technology Acceptance Models. It is important to understand the determinants of the perceived usefulness construct because it drives usage intentions and how these determinants influence changes over time, with increasing system usage. Although the original TAM model was based on the determinants of perceived ease of use, the determinants of perceived usefulness enabled organizations to design organizational interventions that would increase user acceptance and usage of new systems. For this reason, Venkatesh and Davis conducted a study published in 2000 to extend TAM that examined how the perceived usefulness and usage intention constructs change with continued information system (IS) usage.

In his study on the adoption of electronic tax filing systems in Taiwan, Wang (2002) used the extended technology acceptance model. The extended TAM is basically the original TAM model with an additional factor of "perceived credibility". This is in addition to the two factors namely "perceived usefulness" and "perceived ease of use". Wang introduced the new factor based on the belief that a person's intention to

use an electronic tax filing system could be affected by his perception of the security and privacy concerns. The study was based on a sample of 260 users in Taiwan who had filed income tax returns.

Wang (2002) defined security as protection of information or systems from unsanctioned intrusions or outflows. He further notes that security breach fears affect the growth of online systems. Privacy, on the other hand, refers to the protection of various types of data that are collected, with or without the knowledge of the users, during the 14 user's interaction with the electronic tax filing system. The findings of the study were that, perceived credibility had a stronger influence on the intention to adopt an online system than perceived ease of use and perceived usefulness. The recommendation from the study was that the system provides the necessary security and privacy for the intended users for a successful adoption.

Technology Acceptance Model 2 incorporates the subjective norm, voluntariness, and image, which are three interrelated social forms. These forms help to determine if an individual will adopt or reject a new system. In addition to these three forms, Venkatesh and Davis (1996) as noted in Lai (2017), indicated that the cognitive determinants of perceived usefulness in TAM2 could be described as perceived ease of use, output, output quality, and job relevance.

2.3.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

This theory was advanced in 2003 by Venkatesh et al. The theory seeks to explain the link between revenue collection and adoption of electronic tax systems by the general public (Shaupp et al., 2010). It states that several behavioral facets namely: performance expectancy, effort expectancy, social influence and facilitation conditions affect the adoption of electronic systems.

Veras and Preziosi (2011) posit that the expectations by end users of availability and quality of infrastructure such as internet form the performance expectancy envisaged by the model. They further explain that effort expectancy entails the perceived ease of use and complexity of the system; the social influence includes factors such as age and gender whereas the facilitating conditions comprise the incentives given to the users of the system. In analyzing the UTAUT model, Lai (2017) explains that the performance expectancy of a technology entails five key attributes namely: the perceived usefulness of the system or technology; its ability to fit into the requirements of the job (job-fit); the relative advantage that will be gained from using the system; extrinsic motivation associated with the use of the technology; and the expected results or outcomes that will accrue from the use of the system.

The four constructs of Unified Theory of Acceptance and Use of Technology defined by Venkatesh *et al.* (2003) are: Performance expectancy (The level a person considers that the use of a new technology would help to improve their work performance and this construct is included as perceived usefulness in TAM); Effort expectancy (The degree to which the user perceives the system as easy to use and this construct includes scale items from TAM); social influence (the degree to which the user perceives that others who are important to the user believe that the user should use the system and this construct includes scales from subjective norms in TAM) and facilitating conditions (The degree to which the user believes that conditions are adequate for effective use of the system, including organizational readiness and infrastructure adequacy. This construct encompasses perceived behavior control, TAM and other variants).

Past research studies have used the UTAUT model to test a variety of areas involving the acceptance of technology. For instance, Robinson (2006) applied the UTAUT

model to a study of students 'adoption of technology in marketing education. Additionally, several researchers have performed studies that have validated the UTAUT model in Internet technologies and virtual communities (Park et al., 2007; Pappas and Volk, 2007; Loke 2008; Lin and Lee, 2006; Hennington and Janz, 2007; Debuse et al., 2008; Chieh-Peng and Anol, 2008; Anderson et al., 2006).

Further, Koivumaki, Ristola, and Kesti (2008) used the UTAUT model to study the adoption of mobile technology thereby adding to the literature on technology acceptance. This study added to the literature through the study of mobile technology. Further studies added more dimensions to the UTAUT that reflected the flexibility of the model. For instance, Wang, Wu, and Wang (2009) conducted a research study that included an additional dimension of self-management and perceived playfulness as independent variables moderated by age and gender. The study investigated age and gender as significant determinants to the adoption of mobile learning technology.

Despite its usefulness in studying the acceptance of technology, the UTAUT model is limited in that it does not include the task-technology fit (TTF). Venkatesh et al. (2003) noted that this was not included in the UTAUT model and that it warranted further research. Essentially, the models that underlie the UTAUT model fail to include task constructs. Typically, users intend to use information technology if it meets their task requirements. Dishaw, Strong, and Bandy (2004) conducted a study that added TTF constructs to the UTAUT with the goal of determining whether this addition produced an improvement in explanatory power, similar to that reported by Dishaw and Strong (1999). The results of their study produced a new model that combined the TTF and UTAUT models.

This theory is of importance to this study as it guides the framework of developing and implementing electronic tax systems and technology acceptance. It implies that for tax authorities to achieve improved revenue collections, they ought to put in place electronic tax systems that are easy to use, less costly to the users and systems that complement the existing tax system without necessarily creating additional processes and procedures. In addition, the authorities need to ensure that supporting infrastructure is in place such as internet connectivity so as to make compliance with tax laws easy and fast.

2.3.3 Theory of planned behavior

Ajzen (1988) developed the Theory of Planned Behavior as an off-shoot of the Theory of Reasoned Action. Ajzen's (1991) Theory of Planned Behavior uses attitudes, subjective norms and perceived behavioral control to predict "intention" with relatively high accuracy. The theory assumes that a person's intention, when combined with perceived behavioral control, will help predict behavior with greater accuracy than previous models (Ajzen, 1991). According to Ajzen (1991) the TPB is a theory designed to foresee and explain the human behavior in specific contexts, for example, in information systems. As general rule, the stronger the intention to get involved in a behavior, the more probable should be its performance. Ajzen (1991) understand that the behavior intention is reflected in the behavior if the person decide on his own will to adopt or not the behavior, what means, by the perceived control that he has about the desired behavior. The behavior is the product of a succession of cognitive and affective events, preceded many times by the conscious intention of acting.

Giles et al., (2010) states that the theory of TPB is also characterized by different beliefs namely the beliefs about the results of a certain behavior, beliefs about other

people's expectations and beliefs about the presence of different features that influence or prevent a certain behavior of individuals. The attitude towards behavior is regulated by personal beliefs about the results of a behavior (namely behavioral beliefs). Normative beliefs determine the subjective norms and they are determined by the societal outlook in the way they value and appreciate a certain behavior. Perceived behavioral control (PBC) is usually influenced by certain factors influencing situations and focuses on the performance ability of a subject to either perform or not perform a certain behavior. Therefore, PBC is affected by both behaviors and intent. Subjective Norms refer to what individuals believe other key people in their lives think about whether or not the individual should perform the behavior (Azjen, 1991; Knabe, 2012).

The application of the Theory of Planned Behavior to technological innovations has been demonstrated in numerous studies using quantitative research methods. For example, Morris and Venkatesh (2000) used the Theory of Planned Behavior to study workers' decisions about technology usage and their attitudes toward adoption of technology, and Fortin (2000) used the model to study the behavior of "clipping online coupons." More recently, Troung (2009) used the theory to study consumer acceptance of online video and television services, and Hsu, Yen, Chiu, and Chang (2006) used an extended version of the theory to examine online shopping behavior. In an educational setting, Lee, Cerreto, & Lee (2010) used the theory to examine teachers' intentions to use computers to create and deliver lessons.

2.4 Technology Acceptance

Technology acceptance is defined as how people accept and adopt some technology for use (Samaradiwakara and Gunawardena, 2014)

2.4.1 Independent variable - Perceived Ease of Use (PEOU)

Davis (1989) in Hamida et al., (2016) stated that perceived ease of use is defined as the extent to which a person believes that using the system will be free of effort. Davis further observed that perceived ease of use influences a person's intention to adopt the system and it also influences the person's perceived usefulness of the system. When a system is perceived as easy to use and interact with, the person will find it useful and will increase his intention to adopt the system.

In the meantime, the aspect of ease-of-use has been widely associated with predicting perceived usefulness. In other words, according to TAM theory, perceived ease-of-use has been regarded as an important determinant of perceived usefulness (Hamida et al., 2016). The relationship between these parameters has been statistically established in almost all empirical adoption analysis implemented in different fields of information technologies and in different social and cultural settings. Many prior adoption and acceptance studies conducted in areas related to e-learning applications and services have also observed that the perceptions of ease-of-use positively and significantly influence the perceptions of usefulness (Chang and Tung, 2008; Purnomo and Lee, 2013; Lee et al., 2014; Mohammadi, 2015). This indicates that if individual learners perceive the system as easy to use, it is expected that they will recognize the system as useful; therefore, the more likely the individual learners will pursue the adoption and use of the technology of e-learning.

There are also several external factors that are critical to the perceived ease of use of the information system. Miller & Khera (2010) listed these external factors as computer literacy, level of infrastructure, availability of assistance, ease of access, English literacy and self-efficacy. They noted that where users have computer usage knowledge and have had prior interaction with internet, this positively affects their

perceived ease of use of the information system thereby aiding its adoption. Miller and Khera (2010) further explained several preconditions to the perception of an information system's ease of use. These were the existence of support infrastructure, availability of assistance when needed, easy accessibility of the system, knowledge of the English language and the degree of self-ability to utilize a system.

According to a large spectrum of adoption studies conducted in a diversity of IT-based systems, if individuals believe that adoption of a new system is useful, enhancing their job performance and individuals' effectiveness, and boosting their knowledge and skills; these positive benefits expected to be gained from using the technology will automatically stimulate individuals' perceptions and behaviors to engage in the adoption and usage of the technology (Yusuf and Lee, 2015). Therefore, it is expected that individuals will be willingly and freely adopting and using the system. In the context of e-learning technology, perceived usefulness indicates that using a technology will enhance individuals' performance in learning and acquisition. The aspect of perceived usefulness has been widely utilized in adoption and acceptance studies related to a multiplicity of information technologies domains, particularly e-learning (Hamida et al., 2016).

For example, a study implemented in four public universities in Iran by Mohammadi (2015) concluded that perceived usefulness positively and significantly determines students' behavioral intention to adopt e-learning technology. In similar context of undergraduate students, Chang and Tung (2008) reported similar findings. In addition, a plethora of empirical analysis conducted on e-learning environments have confirmed the positive influence of perceived usefulness on behavioral intention to adopt and use e-learning services (Al-alak and Alnawas, 2011; Purnomo and Lee, 2013; Lee et al., 2014).

Azmi & Bee (2010) included perceived risk in their study on The Acceptance of the e-Filing System by Malaysian Taxpayers using a Simplified Model. The perceived risk was being used increasingly in studies touching on e-governance. In their model, the y introduced perceived risk with two facets; privacy risk and performance risk. Azmi & Bee (2010) defined perceived risk as taxpayers' perception on the reliability of the system's usefulness/functionality and the control of their personal data information in an online environment. They further defined privacy risk as the concerns over the safeguard of various types of data that are collected during taxpayers' interaction with the e-filing system due to concerns on third parties accessing their personal information. The performance risk refers to the possibility of the system failing to deliver on its promises. In the study on the interaction between the perceived risk and the traditional perceived usefulness and the perceived ease of use, Azmi & Bee (2010) argue that complex systems that take time to learn are considered risk to adopt and use.

2.4.2 Independent Variable - Facilitating conditions (FC)

Facilitating conditions refers to which extent people believe that an organizational and technical infrastructure exists to support the system (Venkatesh et al., 2003). Facilitating conditions refers to the extent to which an individual perceives that technical and organizational infrastructure required to use intended system are available (Kamal, 2012). Kasse, Moya and Nansubuga, (2015) noted that facilitating conditions are considered to be perceptions of individuals that technical and organizational infrastructure required to use and support an intended system are available and thus intention to adopt new technologies should not be an issue. FC represents the external constraints on intention to adopt.

According to Kasse, Moya and Nansubuga, (2015), facilitating conditions focuses on finance, infrastructure, human resource capacity building, and educational content. Implementation and promotion of technology acceptance requires intensive and massive financial resources on the part of the institutions to acquire the necessary hardware, software, bandwidth, people skills and training. Availability of finances to fund acceptance of technology is a facilitating condition. However, lack of financial resources has suffocated the slightest of efforts taken by some institutions because they cannot sustain what has been started. Institutions should put in place e-learning coordination teams as recommended by best practice. The team should be composed of senior management members for purposes of support at strategic and management level. Such teams would be responsible for developing the e-learning policy, strategies and road map that should be followed in the implementation of e-learning. In such case, technology acceptance budgets would be in place and supported to overcome the challenge of lack of funding and lack of management support (Josephat, Herbert and Ngumbuke, 2012).

UTAUT assumes availability of infrastructure is grappling with the problem of poor or non-existent infrastructure in terms of necessary hardware, electricity and other interconnectivity devices. Such have led to unreliable access to e-learning resources and low speed of access. Experience shows that the slow access and continuous downtimes of using technology is the major cause of lack motivation in adopting and use of e-learning. Users would consider such sites as unreliable and therefore would not want to invest their time and energy into something that may not be available the next day (Alkhattabi, Neagu and Cullen, 2011).

The lack of competent people to manage and use technological systems has equally retarded smooth transition from conventional learning methods to technology

acceptance. That notwithstanding, the lack of people with technical competence to support, manage and maintain technology systems cannot be underestimated. Because acceptance of technology is not ordinarily part of the main stream university policy in these institutions, development of staff to manage and maintain e-learning systems remains lacking. For most of IT managers in these institutions their development has been on sole efforts and self-initiatives which have limited exposure and innovation. The lack of support whether technical or otherwise renders e-learning systems unusable. Intensified training should be enforced for both ordinary users and technical support personnel to enable competent usage and support in order to benefit from the e-learning systems.

With regard to the educational content, and coupled with lack of pedagogical skills, a lot of learning content is non-digitized making it practically impossible to directly make them available for e-learning. Additionally, there is lack of appropriate software to create/transform and manage electronic content. Besides the software, the skills to create and preserve this e-content still present an insurmountable challenge.

Facilitating conditions have varying effects depends on the reached phase of IT adoption in the organization. In initial stage, facilitating conditions have a positive effect on the use of innovation (Chang et al., 2017; Chau and Hu, 2012). While, Al-Shafi (2010) found that facilitating conditions was correlated positively to e-government adoption but not significantly. On the other hand, during the advance of the experience of using the information technology, facilitating conditions had a strong effect for older workers with increasing experience (Venkatesh et al., 2003). In his study on the effect of performance expectancy, effort expectancy, social influence and facilitating conditions on acceptance of e-banking services in Iran, Kamal (2012) found a significant and positive effect of facilitating conditions on users' behavior in

relation to use e-banking services. Thus, it seems necessary to provide required resources, information and also continuous support to encourage users to employ services consistent with their life styles.

In their study on the influence of performance expectancy and facilitating conditions on use of digital library by engineering lecturers in universities in South-west, Nigeria, Hamzat and Mabawonku (2018) found that facilitating conditions in terms of technical infrastructure, accessibility, human resources, and skills had significant positive impact on the use of digital library by engineering lecturers. Venkatesh et al., (2012) added a direct relationship between the facilitating conditions and the intentions to use in UTAUT-2, and Lai (2015) confirmed this relationship among users of app-based mobile tour guides. Gallivan et al., (2015) and Venkatesh et al., (2008) appropriate facilitating conditions are essential for the acceptance of ICTs. In the literature on mobile banking adoption, Joshua and Koshy (2011) showed that easier access to computers and the Internet results in a higher adoption rate. Hence, higher facilitating conditions are expected to lead to higher intention to use, and a higher rate of use of technology.

2.4.3 Dependent Variable – Performance of Customs Officers

According to Rouse (2005), ICT incorporates the use of both the scope that employs internet in its day to day operations and also the mobile technology enabled through the use of wireless networks. The concept of ICT is a development that has been adapted due to the changes in global dynamics which have impacted several sectors that make up the growth of an economy. Among these sectors are the SME's, services offered by the government, sectors of commerce, trade, agriculture, hospitality and even manufacturing (Olusola, 2013). Noor, (2009) that asserted that the application of the ICT has greatly affected the enterprises globally and several firms or organizations

that have in turn changed the yield worldwide, the way they handle their businesses and the way they respond to their customers.

ICT adoption can be defined as to use ICT which starts with e-mail adoption, followed by website adoption, e-commerce adoption, e-business adoption and finally the transformed organization (Martin and Matlay, 2001). Jeyaraj et al. (2006) identified seven variables that are used as the dependent variables for ICT adoption: perceived system use, intention to use, adoption diffusion, rate of adoption, outcomes, actual system use, and time of adoption. Furthermore, the ICT adoption rate can be measured using the following: frequency count of innovations, binary measure of adopted or not adopted, research and development (R&D) intensity, series of steps taken by the organization to promote innovation, and a scale of radicalness or newness of the innovation (Musabila, 2012). Goldstein and O'Connor (2000) support that the ICT adoption and usage level in developing countries is mostly limited to e-mail services and website presence only. This is because of the limited bandwidth and high connectivity costs.

According to Mutula and Van Brakel, (2007), companies today are adopting ICT in all aspects of their businesses, not only improving business processes and task efficiency, but also for improving engagement and communication with their customers. Governments as well, are adopting ICT to provide better services to their citizenry. The adoption of ICT applications and systems by companies needs a business environment that allows for fair competition, security, integration, standardization and the availability of credit facilities for ICT adoption (United Nations Conference on Trade and Development, 2004). The motivation by firms to adopt ICT as a means of gaining competitive advantage is driven by their need to achieve low cost delivery of products and services, deliver differentiated products and

services, be able to focus on a specific market segment and also improve on the innovative practices of the organization.

The adoption of ICT applications and systems by companies needs a business environment that allows for fair competition, security, integration, standardization and the availability of credit facilities for ICT adoption (Stalk and Shulman, 2009). Most of the large and international corporate organizations operating in Kenya have effective ICT based systems to efficiently conduct their operations. A number of large organizations have invested in acquiring computer systems to support their business processes (Parker and Castelman, 2009).

Bezniki (2012) intimated that ICT represented a critical success factor in knowledge management in her paper on whether ICT can be a source of competitive advantage and that it played an important role in decision making. Basweti et al. (2013) studied the impact and challenges of ICT adopted on in the Tanzanian banking sector. Many of the respondents in his study agreed that ICT had a major impact on banking. However, being a developing technology, it required the banking professionals to enhance their skills due to ICT's dynamicity and the banks put more effort on customer awareness. Gichoya (2005) examined the factors affecting successful adoption of ICT projects in Kenya. Findings indicated that its key determinants are finance, infrastructure, attitudes, coordination and strategy.

Githu (2017) assessed small and micro enterprises adoption of ICT for competitive advantage in Nairobi County. The study revealed that the use of ICT has the possibility to shrink the effects of distance, thus enabling micro and small enterprises to participate in both local and global markets. It reasoned that ICT influences the firm by expanding the capability of interior and outside planning efficiencies and

firms that don't receive ICT will have higher cost structures and consequently upper hands. The study established that ICT adoption system needs IT experts in the company to do some periodic maintenance and provide support to the system due to the fact that skills help to improve individual and enterprises performance, improved operational flexibilities hence competitive advantage.

2.5 Empirical Review

Atambo and Katuse (2017) in their study sought to determine the challenges encountered by KRA in implementation of business automation. The study concluded that organizational related challenges hindered implementation of business automation at KRA. The study also concluded that environmental related challenges hindered implementation of business automation at KRA. Further, the study concluded that better mitigation strategies enhance effective implementation of business automation projects in KRA.

Aliet (2008) in his study sought to determine how KRA implemented the Customs Reforms and Modernization Program, the challenges KRA encountered in implementing the reforms and modernization initiatives and how KRA responded to those challenges. The findings indicate that the greatest challenge KRA encountered was resistance to change followed by lack of requisite skills. Other challenges included lack of resources and a supportive telecommunication infrastructure. KRA responded to these challenges by training and sensitizing the staff and stakeholders and hiring new staff with the requisite skills. They also sought political support and improved their project management style. One key conclusion of this study is that strong, visionary leadership is an important component for project success particularly when faced with resistance to change. Another conclusion is that flexibility, political

support, teamwork and openness are important when implementing strategic change within the public sector.

Asala (2012) sought to establish the impact of customs reform and modernization program on the performance of Customs Service Department of KRA. The regression results showed that the reforms had no significant impact on the performance of the customs department and that of the three reforms, the study found that the most implemented reform was the business automation reforms followed by the structural reforms and the least implemented reform was the enforcement reforms). The study therefore concludes that the customs reforms have not had a significant impact on the performance of the customs services department of the Kenya Revenue Authority. The study recommends that Kenya Revenue Authority to revisit the need to implement various reforms so as to enhance performance.

A study conducted by Munene and Nduruhu (2016) sought to establish the effect of tax reforms and modernization programs on tax revenue by the Customs and Border Control Department. In particular, the study examined how reforms in customs enforcement affected tax revenue. The study found that the relationship between customs enforcement reforms and tax revenue collection is a weakly positively correlated but not statistically significant. The study recommended that the customs enforcement reforms leading to more tax collected per customer should be given more examination due to its high standard deviation.

In his study on the impact of system automation on revenue collection in Kenya revenue authority, Gitaru (2017) established that there was a significant increase in the revenue collected after the automation to the simba system. A study was conducted on responses by Kenya Revenue Authority to the challenges encountered

in the implementation of the customs' reforms and modernization – CRM (Ondiek, 2013). The study revealed that the greatest challenges encountered by KRA were resistance to change, lack of requisite skills, lack of resources, and also lack of a supportive telecommunication infrastructure. The Authority responded to the afforested challenges through training and sensitization of the staff and stakeholders. More so, the challenges were addressed by hiring new employees with the requisite skills. Political support and management style were also key to the implementation of CRM initiatives.

A study by Wambua (2008) on the effects of reform programs on staff morale at KRA noted that the role of reforms is to take forward the development and strategic co-ordination of the organizations development agenda to ensure that business planning supports service delivery and therefore as such most reforms agenda focus on improving services by meeting the expectations of their customers. This was a case study which sought to investigate and determine the effects of reform programmes on morale of the staff of KRA. The study clearly shows that reform programmes contributed greatly to boosting staff morale at KRA. Staff felt that reforms impacted positively in the way work is done at KRA hence boosting their morale.

Odundo (2007) did a study on change management practices, in adopted technology by the Kenya Revenue Authority (KRA) in its transformation and renovation programme. It was found that there have been many technological changes in the firm that have prompted the management to effectively manage change. New departments have been created, others merged while others split in a bid to deliver better services to clients and thus ensure efficient collection of revenue. A study conducted by Khaled (2016) on which one between perceived value or perceived usefulness was more important in e-learning adoption found that perceived value and perceived

usefulness positively influence behavioral intention, where perceived usefulness is more influential.

2.6 Research Gaps

KRA has effected numerous changes aimed at making it effective and efficient in collection and accounting of revenues. This has resulted in improved service delivery and collection of revenues. The changing economic, technological and operational environment has necessitated the change process. There has been change in systems, procedures, people, and structures among other components. These changes have made KRA and in particular the customs administration department adopt new strategies such as automation/technology adoption and acceptance which creates the need to address the challenges faced in implementing these strategies. While there are numerous studies done on technology acceptance and adoption as highlighted in this chapter, they did not delve into the effects of technology acceptance and modernization programs on the performance of customs officers. This study intended to bridge the gap that exists.

2.7 Conceptual Framework

Mugenda and Mugenda (2003), define a conceptual framework as a hypothesized model identifying the concepts under study and their relationships. The study was guided be guided by the conceptual framework as shown in Figure 2.1.

Independent Variables   Dependent Variable

```
┌─────────────────────┐
│        PEOU         │
│  • Individual       │
│    differences      │
│  • System           │
│    characteristics  │
│  • Social influence │
│  • Productivity     │                ┌──────────────────────┐
│                     │                │ PERFORMANCE          │
│                     │                │ OF CUSTOMS           │
│                     │                │ OFFICERS             │
│                     │───────┐        │  • Accomplish  tasks │
└─────────────────────┘       │        │    easily            │
                              └───────▶│  • Accomplish  tasks │
                              ┌───────▶│    quickly           │
┌─────────────────────┐       │        │  • Performance       │
│    FACILITATION     │       │        │  • Efficiency        │
│    CONDITIONS -     │───────┘        │                      │
│  • Finance          │                └──────────────────────┘
│  • Infrastructure   │
│  • Human Resource   │
│    Capacity         │
│    Building         │
│  • Educational      │
│    Content          │
└─────────────────────┘
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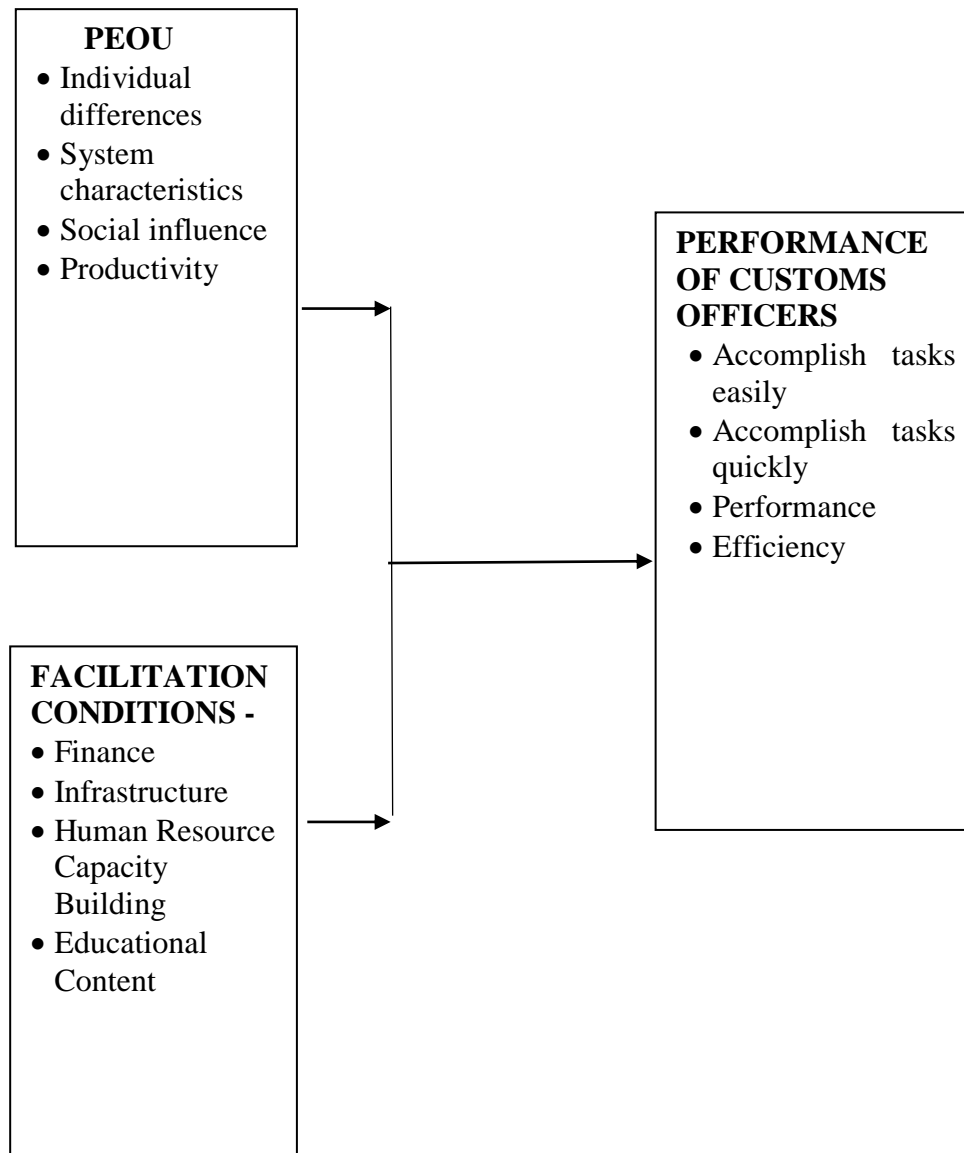
Figure 2.1: Conceptual framework

Source: Study, (2019)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the method that will be used to collect data pertinent in answering the research questions. The sub-sections covered in this chapter are: research design, target population, sample size and sampling procedure, data collection instruments, data collection methods, research procedures, piloting of data collection instruments, data analysis and ethical considerations.

3.2 Research Design

The study was conducted using the explanatory survey design.

Creswell (2009) stated that the design answers the "why" questions and involves developing an

explanation of a causal relationship between independent and dependent variables.

Causal explanations argue that a phenomenon $Y1$ (port performance) is affected by factors $X1$ and $X2$ (Perceived Ease of Use, Facilitating Conditions)

Further, Hair et al (2006) confirms that explanatory design allows the use of inferential statistics to find out the relationship between the dependent and independent variables.

According to Lewis and Thornhill (2009) and Polonsky and Waller (2005), explanatory survey design enables quick data collection from the sample population and has the ability to help people understand the population from a part of it. Explanatory design includes data from a sample population and analyzing it to establish causal explanations between the independent and dependent variables.

Kombo and Tromp (2006) also asserted that the design establishes the relationship between the independent and dependent variables.

For this study the explanatory research design was chosen because its main aim is to identify any causal links between technology acceptance and modernization programs on the performance of customs officers in Kenya, Mombasa

3.3 Target Population

Cohen, Manion, and Morrison (2007) define a target population as a specific proportion of the entire population that can be narrowed to achieve research objectives. Kenya has 26 border points namely: Wilson, JKIA, Mombasa international Airport, Namanga, Moyale, Mandera, Wajir, Lokichoggio/Nadapal, Loitoktok, Malaba, Busia, Lwakhakha, Suam, Mnita Point, Muhuru Bay, Isebania, Shimoni, Kilindini, Old Town, LungaLunga, Taveta, Vanga, Lamu, Malindi, Kiunga and Kisumu International Airport (infoHub, 2016). The target population was employees of the 3 selected border points in Mombasa, Kenya namely Mombasa international Airport, Kilindini and LungaLunga. These border points were chosen on the basis of inflow and outflow of goods and parties involved in cross border trade.

Table 3.1: Target Population

Border point	Number of employees
Mombasa international Airport	43
Kilindini	61
LungaLunga	20
Total	**124**

Source: Study (2019)

3.4 Sample and Sampling Technique

A sample is a representative section of the target population (Cooper and Schindler, 2006). Sampling involves the researcher securing a representative group that will enable him/her to gain information about the population (Mugenda and Mugenda, 2003). In this study however no sampling was done given the small number of respondents is small, a census of all the customs officials at the border was conducted. Israel (1996), notes that when a population is less than 200, it is appropriate to conduct a census.

3.5 Data Collection Instrument

The study employed primary data. The primary data was collected through a self-administered questionnaire. The questionnaire adopted structured, closed ended questions. The responses in the questionnaires helped in gaining an in-depth understanding of the mediating effect of social norms on technology acceptance and adoption of the modernization programs in Kenya's customs administration. A questionnaire gathered statistically meaningful data on the perspectives of respondents on an issue of interest based on a set of predetermined questions. The questionnaire had two major sections. The first dealt with the demographic data while the likert scale section dealt with the relationship between technology acceptance and modernization programs on performance of customs officers in Kenya's customs administration. According to Kothari (2008), a questionnaire is the most appropriate instrument for this study due to its ability to collect a large amount of information in a reasonably quick span of time hence why the questionnaire will be an appropriate instrument for this study.

3.6 Pretesting of the Data Collection Instruments

3.6.1 Piloting

Before administering the research instruments to the respondents, pre-testing was done so as to help in determining the validity and reliability of the research tools to ensure that the questions are applicable and clearly understandable. Piloting was done in (ICD) Inland Container Depot Nairobi to check the reliability and validity to avoid biasness.

3.6.2 Validity of the research instrument

Kothari (2008) defines validity as a sound measurement that indicates the degree to which an instrument measures what it purports to measure. This study adopted content validity which is the extent to which a measuring instrument provides adequate coverage of the topic under study. So as to establish content validity and make adjustments to the research instruments, consultations and discussions with the supervisor were done.

3.6.3 Reliability of the research instrument

Reliability of an instrument is the measure of the degree to which a research instrument yields consistent results or data after repeated trials (Cooper, 2003). Instrument reliability is the dependability, consistency or trustworthiness of a test. Cronbach's Coefficient Alpha approach was used to measure internal consistency of the research instruments. Cronbach's Coefficient Alpha is a scale measurement tool appropriate in measuring internal consistency in descriptive survey researches as recommended by Cohen, Manion and Morrison (2007). Computation of Cronbach's Alpha was done using SPSS for windows version 20.0 programme. Correlation coefficient varies on a scale of 0.00 (indicating total unreliability and 1.00 (indicating perfect reliability). 0.8-0.9 indicates high reliability, 0.6-0.8 indicates acceptable

reliability value while below 0.5 is unacceptable (Wambugu *et al*., 2015). The questionnaires were accepted at reliability indices of 0.70 and above.

3.7 Data Collection Procedures

Data collection procedures began upon approval of the proposal after its defense. The researcher obtained a letter from Kenya School of Revenue Administration to seek clearance from Ministry of Science and Technology attempting to undertake a study. An introduction letter was issued to the sampled entities for consent to collect data from the respondents. The study used two research assistants who were recruited on the basis of a minimum of an undergraduate degree. They undertook an in-house training on the study and thereafter field training. The questionnaires were administered to the respondents directly by the researcher with the help of two research assistants in order to save on time. For the respondents who were not available for a sit-in filling of the questionnaire, the respondent used the drop and pick method.

The researcher employed self-administration approach of data collection and monitored the process to ensure that the unintended people did not fill the questionnaire or were not interviewed. The questionnaires were filled and assistance was sought where possible thus raising the reliability.

3.8 Data Analysis and Presentation

The data was then analyzed using descriptive and inferential statistics. The findings were presented using tables, charts and graphs for further analysis and to facilitate comparison. Frequencies and descriptive statistics were presented. Inferential statistics were also presented after analysis, thereafter conclusions and recommendations were drawn from the findings.

It is important to carry out regression analysis so as to establish the extent of the influence exerted on the dependent variable by the independent variable. A multiple regression model was used to determine the relative importance of each of the variables in relation to the study which seeks to understand the effects of technology acceptance and modernization programs on the performance of customs officers in Kenya's customs administration.

The tests for assumption were done using the inferential statistics, that is, tests for normality, Multicollinearity, Homoscedasticity and Heteroscedasticity Tests were carried out for the study. Regression analysis was applied in all the cases where correlation was found to exist between the independent and dependent variables. The following regression models were estimated.

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \varepsilon$

   Where:

   Y = Performance of customs officers

   β_0 = Constant Term

   β_2 = Beta coefficient

   X_1 = Perceived Ease of Use

   X_2 = Facilitating conditions

    ε = Error Term

3.9 Limitations to the Study

In the course of the study, some of the challenges and constraints that the study encountered included: gathering and interpreting background research and difficulties with getting appointments with interviewees. The study handled the challenge by working extra hours so as to finish up the project in time. The problem of limited

availability of literature when developing the background research was overcome by conducting extensive and detailed research from various sources such as Kenyan journals, local newspapers and websites. During the course of this study, a continuous, detailed and meticulous research was carried out.

The research came across uncooperative respondents who were unwilling to participate in the study. This challenge was minimized by assuring the respondents that no names of the participants were used in reference to the study since the purpose of the research is only for academia. The researcher also carried an introduction letter from the university as proof. The challenge of instrumental limitations was handled by having a research assistant to assist in explaining the questions to the respondents.

3.10 Ethical Issues

As this research aims at adding to the knowledge of technology acceptance and adoption of the modernization programs, it upheld utmost confidentiality about the respondents. The study made certain that all respondents are given free will to participate and contribute voluntarily to the study. The researcher also adhered to appropriate behavior in relation to the rights of the respondents. A verbal consent was sought from the sample respondents. In addition, the study ensured that necessary research authorities were consulted and consent approved and appropriate explanations specified to the respondents before commencement of the study. In addition, all forms of plagiarism were avoided through proper referencing of all sources used.

3.11 Operationalize of the Variables

Table 3.2: Operationalization of the variables

Variable	Operational definition	Indicator/Measure	Measurement scale
Perceived Ease of Use	The extent to which a person believes that using the system will be free of effort	• Efficiency • Increased productivity • Lack of challenges	Ordinal
Facilitating conditions	Extent people believe that an organizational and technical infrastructure exists to support the system	• Willingness to try • Perceived compatibility • User intention	Ordinal

Source: Study (2019)

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

In this chapter the key issues related to data presentation, analysis and interpretation have been discussed. This chapter presents responses from all respondents regarding an investigation into the effects of technology acceptance and modernization programs on performance of customs officers in Kenya's customs administration. First, the research response rate has been computed and presented for each section. Secondly, the demographic characteristics of the participants have been described. Thirdly, the findings on the four key objective areas of the study have been presented and interpreted. The responses were analyzed using descriptive and inferential statistics. The data has been presented in tables, graphs and pie charts.

4.2 The Study Response Rate

Out of 120 questionnaires which had been administered to the interviewees, 104 of them were returned for analysis. This translates to 86.67 percent return rate of the respondents. Overall, the response rate was considered very high and adequate for the study as shown in Table 4.1;

Table 4.1: Distribution of the Respondents by Responses Rate

Response Rate	Frequency (F)	Percentage (%)
Returned	104	86.67
Not Returned	16	13.33
Issued	120	100

Source: Study (2019)

4.3 Demographic Characteristics of the Respondents

The study sought to find out the distribution of the respondents by their gender. The findings are shown below in Figure 4.1
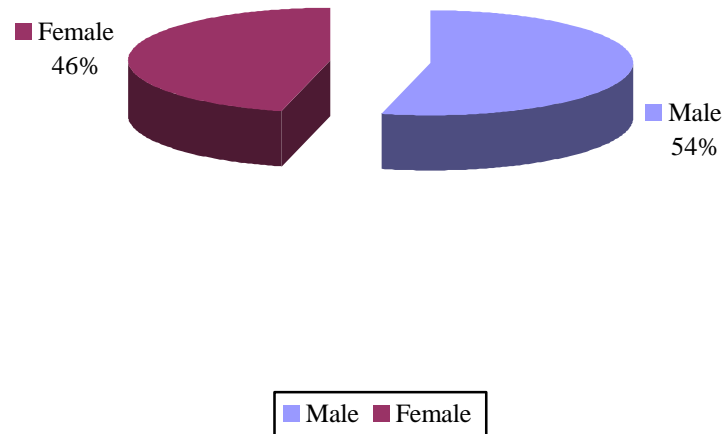
Figure 4.1: Distribution of respondents by Gender

Source: Study (2019)

According to the data shown in Figure 4.1, majority of the customs officers (54.0%) were males while 46.0% were female. The findings could be an indication that most of the respondents in Kenya's customs border points are males.

The study sought to find out the distribution of the respondents by age. The findings are tabulated in Table 4.2

Table 4.2: Distribution of the respondents by Age

Age	Frequency (F)	Percentage (%)
20-30 years	35	33.7
30-40 years	59	56.7
40-50 years	8	7.7
50 and above years	2	1.9
Total	**104**	100

Source: Study (2019)

It is evident from the data shown in Table 4.2 that, majority of the respondents (56.7%) fell under the age bracket of 30-40 years, 20-30 years (33.7%), 41-50 years (7.7%) and 50 and above years (1.9%). The findings reveal that respondents at the respondents in Kenya's customs border points comprises of young and middle-aged people.

The study sought to find out the distribution of the respondents by education level. The findings are shown in Figure 4.2.
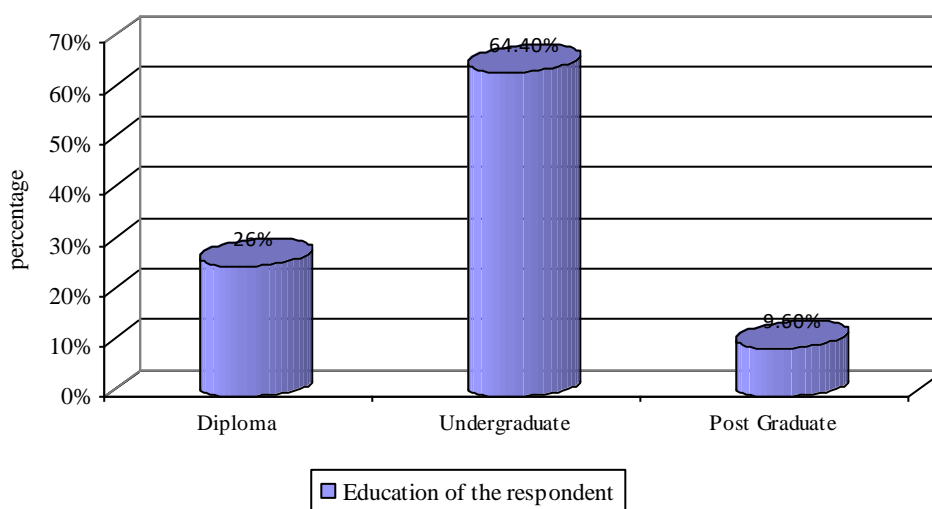
Figure 4.2: Distribution of the respondents by Education level

Source: Study (2019)

Figure 4.2 shows that majority of the respondents represented by 64.4% have attained undergraduate level of education, 26.0% have attained diploma level of education, and 9.6% have attained postgraduate level of education. This could imply that majority of the respondents are learned having attained tertiary level of education.

The study sought to find out the duration the respondent has worked with KRA. The findings are tabulated on Table 4.3:

Table 4.3: Duration of working with KRA

Duration	Frequency (F)	Percentage (%)
Below 2 years	20	19.1
2 to 4 years	22	21.2
5 to 7 years	37	35.6
8 to 10 years	11	10.6
More than 10 years	14	13.5
Total	**104**	**100**

Source: Study (2019)

It is evident from the data shown in Table 4.3 that, majority of the respondents have worked with the organization for a period of 5 to 7 years (35.6%),2 to 4 years (21.2%), below 2 years (19.1%), More than 10 years (13.5%), and 8 to 10 years (10.6%).

The study sought to find out the duration the respondent has worked with the current border. The findings are tabulated on Table 4.4:

Table 4.4: Duration of working with current border

Duration	Frequency (F)	Percentage (%)
Below 2 years	32	30.8
2 to 4 years	31	29.8
5 to 7 years	25	25
8 to 10 years	16	14.4
Total	**104**	**100**

Source: Study (2019)

It is evident from the data shown in Table 4.4 that, majority of the respondents have worked with the current border for a period of below 2 years (30.8%), 2 to 4 years (29.8%), 5 to 7 years (25.0%), and 8 to 10 years (14.4%). The findings reveal that majority of the respondents have worked at the current station for less than 2 years.

4.4 Assumptions of Regression Analysis.

The study data was pretested for the major assumptions of parametric data analysis. Pretesting helped in confirming whether the assumptions of regression analysis were met which are normality, multicollinearity, homoscedasticity and heteroscedasticity (Razali & Wah, 2011). Normality tests were done using Shapiro-Wilk test; multicollinearity tests were done using variance inflation factor (VIF) while homoscedasticity and heteroscedasticity were tested using levene test. Checking the assumptions helped decide which statistical test was appropriate.

4.4.1 Tests of Normality

Data is normally distributed if it is symmetrically around the Centre of all scores (Field, 2009). For samples of 3 to 2,000, Shapiro-Wilk test should be used but if the sample size exceeds 2,000 then the Kolmogorov-Smirnov test applies (Field, 2009). In this study, normality was tested using Shapiro-Wilk test since the population of the study comprised of 104 customs administration officers. Normality test results are presented in Table 4.5.

Table 4.5: Normality Tests

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.070	142	.083	.982	142	.060
Standardized Residual	.070	142	.083	.982	142	.060

a. Lilliefors Significance Correction

According Ghasemi and Zahediasl (2012), Kolmogorov-Smirnov (K-S) test is the most popular and appropriate test for normality test. Based on the Shapiro-Wilk and Kolmogorov-Smirnov tests, the null hypothesis is rejected if the p-value < .05 implying the data is not normally distributed. On the other hand, null hypothesis is accepted if the p-value > .05 which implies that the data is normally distributed. Table 4.3 shows the distribution of the standardized and unstandardized residuals of the study.

Based on the study result of Shapiro-Wilk and Kolmogorov-Smirnov tests, the p-values of 0.083 and 0.60 respectively were computed for standardized and unstandardized residuals. This results of Shapiro-Wilk and Kolmogorov-Smirnov tests confirmed the assumption on normality was not violated.

4.4.2 Multicollinearity test

Collinearity refers to the study of the relationships among independent variables (Saunders, 2009). Multicollinearity is the degree of correlation among independent variables themselves (Hair et al, 2010). It is a situation that arise when two or more predictor variables are closely related and the strong relationships affects the influence of independent variables on the dependent variable of interest (Kothari,

2010). Multicollinearity inflates the size of the error term and weakens the analysis (Hair et al. 2010). However, some moderate correlation between the independent variables is necessary for regression analysis since they are measuring the same dimension of the study hence, they are expected to be related to some extent (Field, 2009).

In this study, multicollinearity was tested using variance inflation factor (VIF) and tolerance value achieved through examination of correlation coefficients among variables. The rule of thumb is that variables with variance inflation factor values above 5, indicates multicollinearity (Dennis, 2011). The cut off threshold for tolerance value is 0.2 which corresponds to a VIF value not exceeding 5 since tolerance value is the reciprocal of VIF (Hansen, 2013). Multicollinearity test results are presented in Table 4.6.

Table 4.6: Multicollinearity tests

	Collinearity Statistics	
Model	**Tolerance**	**VIF**
Perceived Ease of Use	.587	1.703
Facilitating Conditions	.587	1.703

 a. Dependent Variable: Performance of Customs Officers
Source: Study (2019)

The variables of the study were further subjected to multicollinearity testing using Variance Inflation Factor (VIF) and Tolerance Tests in the regression analysis. The values of Variance Inflation Factor (VIF) for the independent variables were 1.703 which is within the criteria set by Meyers (1990), who suggest that VIF should be less than 10. It can be concluded that there are no multicollinearity symptoms.

4.4.3 Heteroscedasticity tests
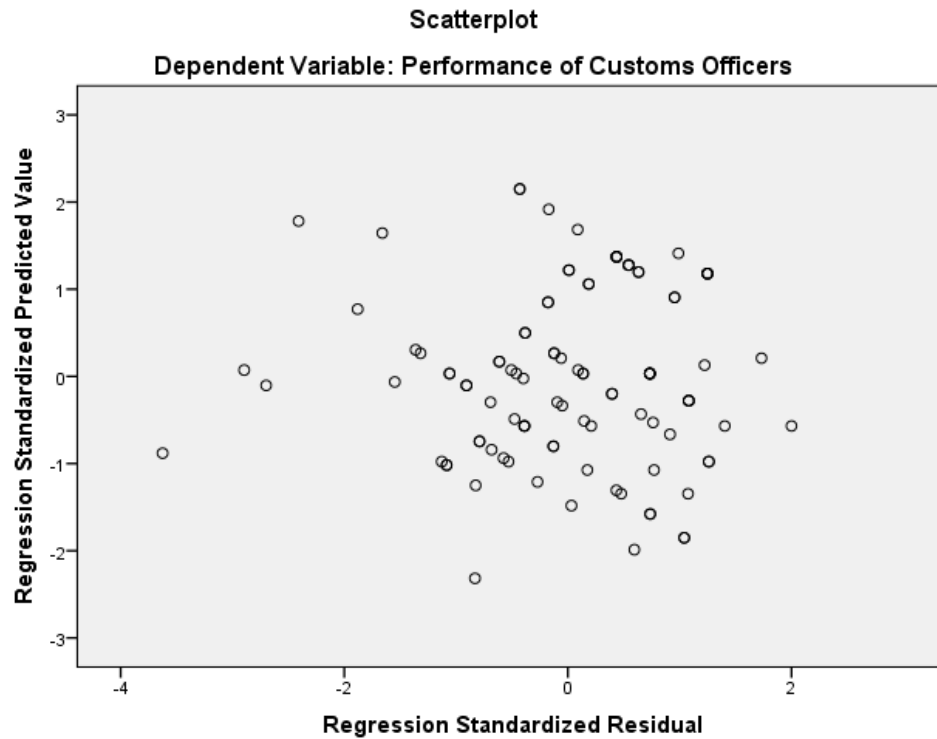
Figure 4.7: Heteroscedasticity Test results.

Heteroscedasticity was examined by visualizing scatter plots and partial regression plots for individual variables (Pallant, 2010). This means the dependent variable scores have the same dispersion/variability around the regression line through them, to mean they have equal spread, Outliers, which have been defined as cases that have a standardized residual value of more than 3.3 Or less than -3.3 (Tabachnick & Fidell, 2007). Results in Table 4.7 indicate the data was not affected by heteroscedasticity.

4.4.4 Tests of Linearity

Linearity implies the degree level to which a change in the dependent variable is related to a change in the independent variables (Hair, Black, Babin & Anderson 2010).

The test for linearity was conducted to check whether a linear relationship existed between the dependent variables and all the four independent variables using P-P Plot. Figure 4.8 shows a P-P Plot of Regression that depicted a linear relationship between the dependent variable and the independent variables.
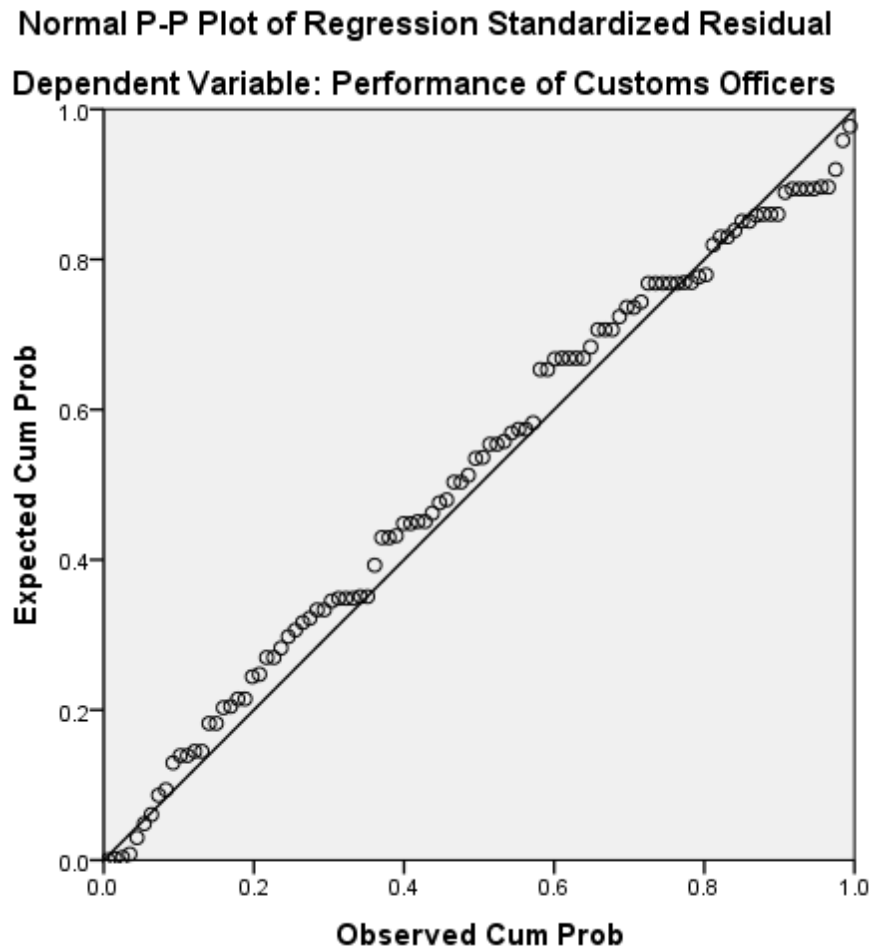
Figure 4.8: P-P Plot of Regression.

The predicted values, the points spread along the line of the best fit.

4.5 Reliability Results

Table 4.7: Reliability statistics

| Cronbach's Alpha	N of Items
.758	29

Source: Study (2019)

Form the analysis Cronbach's Alpha was greater than 0.7 ($\alpha > .7$) for all the variables. This was an indication that the research instrument was reliable

4.6 Descriptive Statistics

4.6.1 Performance of customs officers

Table 4.7 shows the descriptive Statistics on the performance of Customs Officers.

Table 4.8: Descriptive Statistics; Performance of Customs Officers.

	N	Mean	Std. Deviation
Adoption of technology has made work easier.	104	4.31	.925
ICT has helped reduce wastage in my organization.	104	4.58	.569
ICT adoption has lessened time taken to carry out tasks.	104	1.37	.683
ICT has helped in monitoring performance.	104	4.39	.730
ICT has encouraged exploration and support of innovation.	104	4.38	.563
Quality of work has improved due to ICT.	104	3.19	1.442
Communication within and outside the company has improved due to ICT.	104	4.83	.380
ICT has enabled easy coordination within the company	104	4.66	.585
Mean		**3.96**	

Source: Study (2019)

The results in Table 4.7 indicate that, majority of respondents strongly agree that technology acceptance has improved the performance of customs officers **(mean=3.96):** Adoption of technology has made work easier (mean=4.31), ICT has helped reduce wastage in my organization (mean=4.58), ICT adoption has lessened time taken to carry out task (mean=1.37) this has been the backbone of real time task

execution for customs administration and to KRA as a whole. ICT has helped in monitoring performance (mean=4.39), ICT has encouraged exploration and support of innovation (mean=4.38), Quality of work has improved due to ICT (mean=3.19), Communication within and outside the company has improved due to ICT (mean=4.83), ICT has enabled easy coordination within the company(mean=4.66).

4.6.2 Perceived Ease of Use

The study sought to find out if Perceived Usefulness influences the performance of customs officers. The findings are shown in Table 4.8.

Table 4.9: Descriptive Statistics on Perceived Ease of Use.

	N	Mean	Std. Deviation
Perceived Usefulness influence the adoption of the modernization programs in Kenya's customs administration	104	4.44	.588
The technological system provides helpful guidance in performing tasks	104	3.78	.836
It is easy for me to remember how to perform tasks using the technological system	104	4.58	.569
My interaction with the technological system is easy for me to understand	104	1.37	.683
I find it cumbersome to use the technological system.	104	4.39	.730
I find it easy to recover from errors encountered while using technology	104	4.38	.563
Interacting with the technological system requires a lot of my mental effort.	104	3.19	1.442
I need to consult the user manual often when using technology	104	2.74	.903
Mean		**3.60**	

Source: Study (2019)

The results in Table 4.8 indicate that majority of the respondents **(mean=3.60)** agreed that Perceived Usefulness influence the performance of customs officers. The findings support Hamida et al., (2016) who stated that perceived ease of use is defined as the extent to which a person believes that using the system will be free of effort. Perceived ease of use influences a person's intention to adopt the system and it also influences the person's perceived usefulness of the system. The findings further support a study done by Mohammadi (2015) who concluded that perceived usefulness positively and significantly determines students' behavioral intention to adopt e-learning technology. Chang and Tung (2008) reported similar findings. In addition, a plethora of empirical analysis conducted on e-learning environments have confirmed the positive influence of perceived usefulness on behavioral intention to adopt and use e-learning services (Al-alak and Alnawas, 2011; Purnomo and Lee, 2013; Lee et al., 2014).

4.6.3 Facilitating conditions

The study sought to find out if facilitating conditions influence the performance of customs officers. The findings are shown in Table 4.10.

Table 4.10: Descriptive Statistics on facilitating conditions.

	N	Mean	Std. Deviation
Facilitating conditions influence the adoption of the modernization programs in Kenya's customs administration.	104	4.46	.573
The organization has enough financial resources to help in introduction of new technology	104	3.76	.830
I have the resources necessary to use the technology	104	4.06	.774
I have the knowledge necessary to use technology	104	4.28	.703
Support from an individual or service is available when problems are encountered with acceptance of technologies	104	4.37	.683
The technology hardware and software programs are easy to use	104	3.88	.962
KRA offers training on any new technology it introduces in the organization	104	4.61	.491
I have the necessary technological infrastructure (software and hardware) necessary to perform my tasks.	104	3.57	.890
	Mean	**4.12**	

Source: Study (2019)

The results in Table 4.9 indicate that majority the respondents **(mean=4.12)** agreed that facilitating conditions influence the performance of customs officers. From the findings it is evident that lack of competent people to manage and use technological systems can easily stall technology acceptance and adoption of modernization

programs thus stagnating performance. The findings are in line with researchers such as Chang et al., (2017) and Chau and Hu, (2012) who established that facilitating conditions have a positive effect on the use of innovation. Al-Shafi (2010) found that facilitating conditions was correlated positively to e-government adoption but not significantly. Kamal (2012) found a significant and positive effect of facilitating conditions on users' behavior in relation to use e-banking services. Hamzat and Mabawonku (2018) found that facilitating conditions in terms of technical infrastructure, accessibility, human resources, and skills had significant positive impact on the use of digital library by engineering lecturers. Venkatesh et al., (2012) added a direct relationship between the facilitating conditions and the intentions to use in UTAUT-2, and Lai (2015) confirmed this relationship among users of app-based mobile tour guides. Gallivan et al., (2015) and Venkatesh et al., (2008) appropriate facilitating conditions are essential for the acceptance of ICTs. In the literature on mobile banking adoption, Joshua and Koshy (2011) showed that easier access to computers and the Internet results in a higher adoption rate. Hence, higher facilitating conditions are expected to lead to higher intention to use, and a higher rate of use of technology.

4.7 Inferential Statistics

4.7.1 Correlation Analysis

Table 4.11: Correlation Analysis.

	Correlations			
Model	**Zero-order**	**Partial**	**Part**	**Sig.**
Perceived Ease of Use	.689	.457	.341	.000
Facilitating Conditions	.665	.401	.290	.000

a. Dependent Variable: Performance of Customs Officers
Source: Study (2019)

The Results of the Pearson correlation, as shown in Table 4.10 above indicate that there is a significant positive correlation between Perceived Ease of Use and Performance of Customs Officers (r=0.689, p=0.000); a significant positive correlation between Facilitating Conditions and Performance of Customs Officers (r=0.665, p=0.000)). This implies that Perceived Ease of Use and Facilitating Conditions enhances the performance of Customs Officers in Mombasa, Kenya.

4.7.2 Multiple Regression Analysis

Multiple Regression analysis was used to examine the relationship between the independent and dependent variables. The results of the regression analysis are indicated below.

Table 4.12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.747[a]	.559	.550	.20927

a. Predictors: (Constant), Facilitating Conditions, Perceived Ease of Use
b. Dependent Variable: Performance of Customs Officers
Source: Study (2019)

According to Table 4.11 above, R square was 0.559 which was adjusted to 0.55. This implies that the independent variables explain 55 % of all changes in the dependent variables holding all other factors constant. Therefore, 45 % of the changes in the dependent variable is explained by other factors.

Table 4.13: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.598	2	2.799	63.915	.000[b]
	Residual	4.423	101	.044		
	Total	10.021	103			

a. Dependent Variable: Performance of Customs Officers
b. Predictors: (Constant), Facilitating Conditions, Perceived Ease of Use
Source: Study (2019)

Based on ANOVA results, Calculated-F (63.915) was greater than Critical-F implying the model was statistically significant ($p < 0.05$). This was an indication that Perceived Ease of Use and Facilitating Conditions affect the performance of Customs Officers

Table 4.14: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.351	.237		5.689	.000
	Perceived Ease of Use	.434	.084	.445	5.162	.000
	Facilitating Conditions	.254	.058	.379	4.393	.000

a. Dependent Variable: Performance of Customs Officers
Source: Study (2019)

Based on the slope coefficients and probability values of the independent variables Perceived Ease of Use ($\beta1 = 0.445$, $p = 0.000$) and Facilitating Conditions ($\beta1 = 0.379$, $p = 0.000$), the results indicate that the independent variables are statistically significant and positively influence the performance of customs officers. This finding is supported by the p-values being less than 0.05. The interpretation of the coefficients results is as follows: An increase in Perceived Ease of Use by one unit will lead to an increase the performance of customs officers by 0.445 units holding all other factors

constant; An increase in Facilitating Conditions by one unit will lead to increase the performance of customs officers by 0.379 units holding all other factors constant;

4.8 Hypothesis Testing

The first null hypothesis was that, **H_{01}:** There is no significant relationship between Perceived Ease of Use and the performance of customs officers in Mombasa Kenya. Results in Table 4.12 indicated that PEOU has a positive and significant relationship with the performance of customs officers in Mombasa Kenya since the p value of 0.000 was less than 0.05 level of significance. This means that H_{01} was rejected at 5 percent significance level. Therefore, there is a significant relationship between PEOU and the performance of customs officers in Mombasa Kenya.

The second null hypothesis was that, **H_{02}:** There is no significant relationship between facilitating conditions and. Results in Table 4.10 indicated that facilitating conditions has a positive and significant relationship with the performance of customs officers in Mombasa Kenya since the p value of 0.000 was less than 0.05 level of significance. This means that H_{02} was rejected at 5 percent significance level. Therefore, there is a significant relationship between facilitating conditions and the performance of customs officers in Mombasa Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The basic purpose of this chapter is to give the summary of the findings, conclusions and recommendations of the study. This was based on the research findings that is presented and discussed in the previous chapters. The study established several findings which make a direct contribution to knowledge and policy formulation. Recommendations both for further research as well as policy and practice have been made.

5.2 Summary of the Findings

This study aimed at determining the effects of technology acceptance on the performance of customs officers, Mombasa, Kenya. The task included to; establish the relationship between PEOU and the performance of customs officers, Mombasa, Kenya; establish the relationship between facilitating conditions and the performance of customs officers, Mombasa, Kenya; The study reviewed previous studies with a view to establish academic gaps which the present study sought to bridge. This was done through library research.

5.2.1 Performance of customs officers

The study findings reveal that majority of the respondents have used ICT at the border points for a duration of 2-4years. Majority of the respondents use Electronic Cargo tracking system, Customs replacement system, Scanner imaging systems, Simba system and manifest system. All the respondents agreed that adoption of ICT has made work easier.

The study findings reveal that majority of respondents strongly agreed that: communication within and outside the company has improved due to ICT, ICT has encouraged exploration and support of innovation, Quality of work has improved due to ICT, ICT has made work more flexible, ICT has enabled easy coordination within the company, ICT adoption has lessened time taken to carry out tasks, ICT has helped reduce wastage in my organization and ICT has helped in monitoring performance.

5.2.2 Perceived ease of use

The study findings reveal that majority of the respondents agreed that Perceived Ease of Use influence the performance of customs officers, Mombasa, Kenya. The findings further reveal that majority of respondents strongly agreed that: It is easy for them to remember how to perform tasks using the technological system, the technological system provides helpful guidance in performing tasks, and their interaction with the technological system is easy to understand as statements regarding influence of Perceived Usefulness on the adoption of the modernization programs in Kenya's customs administration. The findings further reveals that a large proportion of the respondents agreed that: they find it easy to get the technological system to do what they want, their interaction with the technological system is easy to understand and The technological system provides helpful guidance in performing tasks as statements regarding influence of Perceived Ease of Use on the adoption of the modernization programs in Kenya's customs administration.

The regression results indicated that perceived ease of use has a positive and significant relationship with the performance of customs officers, Mombasa, Kenya. This was indicated by a coefficient of 0.445, with a p value of 0.000, which was less than 0.05. This implied that a unit increase in perceived ease of use accounts for 0.544-unit increase in the performance of customs officers, Mombasa, Kenya.

Further, the null hypothesis that there is no significant relationship between Perceived Ease of Use and the performance of customs officers, Mombasa, Kenya.

5.2.3 Facilitating conditions

The study findings reveal that majority the respondents agreed that facilitating conditions influence the performance of customs officers, Mombasa, Kenya. The findings further reveal that majority of respondents strongly agreed that: KRA offers training on any new technology it introduces in the organization, Support from an individual or service is available when problems are encountered with acceptance of technologies, and they have the knowledge necessary to use technology as statements regarding influence of facilitating conditions on the performance of customs officers, Mombasa, Kenya. The findings further reveals that a large proportion of the respondents agreed that The organization has enough financial resources to help in introduction of new technology, they have the knowledge necessary to use technology, The technology hardware and software programs are easy to use, they have the resources necessary to use the technology, Support from an individual or service is available when problems are encountered with acceptance of technologies and they have the necessary technological infrastructure (software and hardware) necessary to perform tasks.

The regression results indicated that facilitating conditions have a positive and significant relationship with the performance of customs officers in Mombasa Kenya. This was indicated by a coefficient of 0.379, with a p value of 0.000, which was less than 0.05. This implied that a unit increase in facilitating conditions accounts for 0.379 unit increase the performance of customs officers in Mombasa Kenya. Further,

the null hypothesis that there is no significant relationship between facilitating conditions and the performance of customs officers in Mombasa Kenya was rejected.

5.3 Conclusion

Based on the findings, the study concluded that perceived ease of use has a positive and significant effect on the performance of customs officers in Mombasa Kenya. The study also concluded that facilitating conditions have a positive and significant effect on the performance of customs officers in Mombasa, Kenya.

5.4 Recommendations

On the basis of the above, conclusions, the following recommendations were made. There is need for more training on the technology should be offered so as to improve on the skills, knowledge and professional capacity of the employees as this will improve service delivery in terms of clearance and increased revenue. ICT department should ensure that there is effective project coordination and change management for success of the adoption of the modernization programs at KRA. Further, the department should ensure that there is a good data system and that is compatible with the system's needs. There is need for financial resources to be set aside and doubled in the ICT sector in order to increase the integration and implementation of ICT projects in the KRA parastatal. The study also recommends that the management should heavily take up the ICT initiative, have better perception towards ICT and start campaigning for the ICT strategy initiatives integration in KRA customs administration. It also recommends that the ICT infrastructure should be up to date, electricity be sourced and alternative sources of power be put in place. Also, the management should come up with measures aimed at building equipped laboratories, increasing the number and capacity of computers and finally connect them with unlimited internet.

Finally, the researcher recommends that the government regulatory institutions need to ensure that the organizational structure is framed in a way that well stated ICT policies are developed, stated, attached to rewards and seen as an integral part in the parastatals rules. Also, penalties should be attached to the laws being broken in relation to ICT.

There is need for the scholars to conduct a study focusing on clients in customs and border control areas since the current study focused only on employees.

5.5 Suggestion for Further Study

There is need to conduct a similar study in other border points across the country in an attempt to compare the findings. There is also need to conduct a study on the challenges facing technology acceptance at the border points in Kenya.

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APPENDICES

Appendix I: Introduction Letter

Doris Mwende Kioko,

P.O Box 55, Masii

Nairobi, Kenya

11th July, 2019.

Dear Respondent,

RE: **DATA COLLECTION**

I am a student at KESSRA currently undertaking a research study to fulfill the requirements of the Award of Masters in Tax and Customs Administration in Moi University on the "**Effect of Technology Acceptance on the Performance of Customs Officers, Mombasa Kenya.**

You have been selected to participate in this study and I would highly appreciate if you assisted me by responding to all questions in the attached questionnaire as completely, correctly and honestly as possible. Your response will be treated with utmost confidentiality and will be used only for research purposes of this study only.

Kindly note that the study will be conducted as academic research and the information you provide will be treated as confidential. Your participation in the exercise is voluntary and so you are free to choose to or not to participate. But it would be helpful if you could participate fully. Kindly spare a few minutes from your busy schedule to complete the attached questionnaire.

Thank you in advance for your co-operation.

Yours Sincerely,

Doris Mwende Kioko,

MBA Student Moi University

Appendix II: Structured Questionnaire

This questionnaire is designed to collect data on the **Effect of Technology Acceptance on the Performance of Customs Officers, Mombasa Kenya** as adopted from Davis (1989) and Osama et al., (2016). Kindly complete the following questionnaire using the instructions provided for each set of question. Tick appropriately. Instructions: Please tick as appropriate. Do not write your name on this questionnaire.

PART A: Demographic Information

1. What is your gender?

   [   ] Male   [   ] Female

2. In which of the following age brackets does your age fall?

   [   ] 20-30 years   [   ] 30-40 years   [   ] 41-50 years   [   ] 50 and above years

3. What is your education level (state the highest level)

   [   ] Certificate   [   ] Diploma   [   ] Undergraduate

   [   ] Post graduate   [   ] PhD   [   ] Other _____

4. How long have you worked with KRA?

   Below 2 years   [   ]   2 to 4 years   [   ]

   5 to 7 years   [   ]   8 to 10 years   [   ]

   More than 10 years   [   ]

5. How long have you worked at the current border?

   Below 2 years   [   ]   2 to 4 years   [   ]

   5 to 7 years   [   ]   8 to 10 years   [   ]

   More than 10 years   [   ]

Part B – Dependent Variable –Performance of Customs Officers

6. To what extent do you agree with the following statements on the benefits of ICT adoption? Indicate your response based on a 5-point scale by using a tick ($\sqrt{}$) or X to mark the applicable box (Adopted from Azmi & Bee, 2010).

Benefits	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Adoption of technology has made work easier. ICT has helped reduce wastage in my organization.					
ICT adoption has lessened time taken to carry out tasks.					
ICT has helped in monitoring performance.					
ICT has encouraged exploration and support of innovation.					
Quality of work has improved due to ICT.					
Communication within and outside the company has improved due to ICT.					
ICT has enabled easy coordination within the company.					

PART C: Independent Variable - Perceived Ease of Use (Adopted from Chang et al., 2017; Chau and Hu, 2012)

7. To what extent do you agree with the following statements on the influence of Perceived Ease of Use influence the adoption of the modernization programs in Kenya's customs administration? Indicate your response based on a 5-point scale by using a tick (√) or X to mark the applicable box.

Perceived Ease of Use	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Perceived Usefulness influence the adoption of the modernization programs in Kenya's customs administration The technological system provides helpful guidance in performing tasks					
It is easy for me to remember how to perform tasks using the technological system					
My interaction with the technological system is easy for me to understand					
I find it cumbersome to use the technological system.					
I find it easy to recover from errors encountered while using technology					
Interacting with the technological system requires a lot of my mental effort.					
I need to consult the user manual often when using technology					

PART C: Independent Variables facilitating conditions (Adopted from Chang et al., 2017; Chau and Hu, 2012)

13. To what extent do you agree with the following statements on the influence of facilitating conditions the adoption of the modernization programs in Kenya's customs administration? Indicate your response based on a 5-point scale by using a tick (√) or X to mark the applicable box.

Facilitating conditions	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Facilitating conditions influence the adoption of the modernization programs in Kenya's customs administration.					
The organization has enough financial resources to help in introduction of new technology					
I have the resources necessary to use the technology					
I have the knowledge necessary to use technology					
Support from an individual or service is available when problems are encountered with acceptance of technologies					
The technology hardware and software programs are easy to use					
KRA offers training on any new technology it					

introduces in the organization					
I have the necessary technological infrastructure (software and hardware) necessary to perform my tasks.					

THANK YOU FOR YOUR TIME AND COOPERATION!!

Appendix III: Transmittal Letter

MOI UNIVERSITY
ISO 9001:2008 CERTIFIED
SCHOOL OF BUSINESS AND ECONOMICS

Tel: (053) 43153

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P.O Box 63056-00200
NAIROBI
KENYA

MU/NRB/MBA/SA/01

18th July 2019

National Commission for Science, Technology and Innovation
Upper Kabete
P.O. Box 30623 00100
NAIROBI

Dear Sir/Madam,

**RE: REQUEST FOR RESEARCH PERMIT
          DORIS MWENDE KIOKO**

This is to confirm that the above named is a Postgraduate student of Moi University, School of Business and Economics, Ms. Kioko is pursuing a Master of Tax and Customs Administration course offered at KESRA Nairobi campus.

The student successfully defended her proposal and is due to proceed for her research data collection

The research Title is– **"Mediating Effects of Social Norms on Technology Acceptance and Adoption of Modernization Programs in Customs, Mombasa, Kenya"**

The student is in the process of obtaining a research permit to enable her visit the identified research centers. The University shall highly appreciate any assistance accorded to her.

Yours faithfully,

MR. JAPHETH KOGEI
FOR: DEAN, SCHOOL OF BUSINESS AND ECONOMICS