EFFECT OF BORDER CONTROL INITIATIVES ON CUSTOMS PERFOMANCE AT SHIMONI BORDER STATION

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A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF ECONOMICS, ACCOUNTING AND FINANCE IN THE SCHOOL OF BUSSINESS & ECONOMICS IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF A POST GRADUATE DIPLOMA IN CUSTOMS ADMINISTRATION OF THE JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

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DECLARATION

This research project is my original work and to the best of my knowledge has not been submitted for the award in any other institution

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DEDICATION

I dedicate this study to my family

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ACRONYMS & ABBREVIATIONS

CAS	Complex Adoptive System
CRM	Custom Reform and Modernization
EAC	East African Community
ECTS	Electronic Cargo Tracking Systems
ICT	Information and Communication Technology
IT	Information Technology
KRA	Kenya Revenue Authority
TAM	Technology Acceptance Model

DEFINITION OF TERMS

Patrolling Involve surveillance of water bodies for the purpose of gathering information for in regard to; provision of internal security along the seas and lakes in Kenya, keeping vigil on Maritime operations and activities, prevention and monitoring of narcotic trade, providing security for tourists and beach patrols, carry out search and rescue operations along the Kenya waters and enforcement of IMO rules, observations and regulations (Gani, 2017).

Perfomance According to Cariolle, Chalendard, Geourjon and Laporte, (2019) performance is the extent to which an investment is profitable. Basically, performance is the criteria through which an organization determines its capability to survive in the corporate world (Abomhara, Yayilgan, Shalaginova & Székely, 2019).

Multi agency Involving cooperation between several organizations, especially in crime prevention leads to enhanced and improved outcomes for children and young people, through a range of joined-up services, advice and support being readily available and easily accessible, (Arvis, Saslavsky, Ojala, Shepherd, Busch, Raj & Naula, 2016).

Risk Risk implies future uncertainty about deviation from expected earnings or expected outcome. Risk measures the uncertainty that an investor is willing to take to realize a gain from an investment, (Cariolle, Chalendard, Geourjon & Laporte, 2019).

Marine Piracy The term piracy encompasses two distinct sorts of offences: the first is robbery or hijacking, where the target of the attack is to steal a maritime vessel or its cargo; the second is kidnapping, where the vessel and crew are threatened until a ransom is paid, (Chung, Talluri & Kovács, 2018).

Smuggling Smuggling is a term referring to illegal transporting of goods. These goods can be legal, such as alcohol and tobacco, or illegal, such as drugs and arms (Hossain & Yusuf, 2019). Illegal trafficking of immigrants is also a form of smuggling.

ABSTRACT

Customs border control initiatives is expected to prevent the importation and exportation of an increasingly wide range of drugs, explosives, chemical and biological agents, drug precursors, goods which breach intellectual property laws and goods that do not meet accepted health or safety standards. The study sought to establish the effect of border control initiatives on customs perfomance at Shimoni. Specific objectives of the study included; determining the effect of patrolling on customs perfomance at Shimoni, establishing the effect of multi-agency co-operation customs perfomance at Shimoni and examining the effect of Risk management systems on customs perfomance at Shimoni. The theoretical framework of the study was made up of; complex adaptive system theory, the institutional theory and Technology Acceptance Model. The study adopted a descriptive research design and a target population comprising of 105 officers from KRAs enforcement unit, KPA security officers and the Kenya Police. A sample of 52 participants was selected for the study through stratified sampling technique. Data was collected by use of questionnaires then tested for validity and reliability before analysis. Data analysis was done using descriptive and inferential statistics with the help of statistical package for social sciences pilot tests was conducted for validity and reliability using content analysis and Cronbach factor analysis. Findings of the study were presented in tables, charts and explained in descriptive summaries. The study established that: patrolling influences Custom perfomance. Road and land surveillance were found to be the most influential factors of perfomance, this was followed by enhanced water way surveillance; Multi-agency co-operation influences Custom perfomance. The most influential factor observed was the role done in the agencies in boosting Custom enforcement unit. Lastly, the study established that risk management systems influence Custom perfomance. According to the findings, the most influential factor risk management was included usefulness of risk mitigation. The study concluded that; patrolling, Multi-agency co-operation and risk management systems positively and significantly influence the perfomance of Shimoni custom unit. The study recommended for the adoption of high-tech equipments that can be used by the custom unit in the surveillance of border units and all entry points. Kenya Ferry management should acquire automated machines or unmanned machines that can do both air, land and sea surveillance more effectively. Furthermore, the study recommended for the re-development of the collaborative approaches between the various multi-agencies to enhance swiftness efficiency in operations. The study suggested for further studies to be done to help in understanding how a system may fail to detect a risk but manage to mitigate the same and another study to establish the reasons as to why the country is still flooded with counterfeits.

CHAPTER ONE

INTRODUCTION

1.1 Background

Custom and border systems are typically run by Revenue Authorities in a particular nation in handling of imports and exports, (Martí, Martín & Puertas, 2017). For the instance of Kenya it is controlled by the Kenya Revenue Authority. Customs systems in the country facilitate the declaration of goods, valuation, following of any bonds and additionally clearance of imports and exports. As per KRA 2014, the essential function of the Customs and border Control Department is to gather and account for import duty and VAT on imports, (Mustafa & Amjad, 2020). The departments are also in charge of facilitation of legitimate trade and protection of society from unlawful entry and exit of prohibited goods.

The study theoretical foundation is grounded on three theories, they include; the complex adaptive system theory which epitomizes the fact that a perfect understanding of the individual parts does not automatically convey a perfect understanding of the whole systems behaviour, (Arvis, Saslavsky, Ojala, Shepherd, Busch, Raj & Naula, 2016). The institutional theory which emphasizes on how modern organizations depend on their environments. From a linear perspective, it is postulated that this theory holds that organizations are affected by institutions built in much wider environments, (Bichou, 2015). The third theory is the technology acceptance model which proposes that when users are introduced to a new technology, various factors influence their decision about how and when they will utilize it (Quartey, 2019).

The level of trade in Kenya and globally is consistently expanding at a heightening rate, a certainty that implies that administrative bodies, for example, Customs must adjust to the new circumstances or danger turning into a major barrier to trade, additionally debilitating the security of the nation by not having the capacity to adapt to the new times, (Cariolle, Chalendard, Geourjon & Laporte, 2019). This suggests there is an awesome need to enhance the Customs methodology, both to make it less complex and more methodical, without losing any of its authorizing obligations, (Arvis, Saslavsky, Ojala, Shepherd, Busch, Raj & Naula, 2016).

Germany government adopted a custom and border control international system that has successful reduced trade barriers like quotas and tariffs, (Cariolle, Chalendard, Geourjon & Laporte, 2019). Germany and neighboring countries are now in a position to turn their attention to other feasible challenges influencing free flow of goods and services across EU borders, (Arvis, Saslavsky, Ojala, Shepherd, Busch, Raj & Naula, 2016). In china, a custom revenue service system is classified as the best with roles like transport and distribution being much reliant on customs procedures and regulations are actually followed. Consumer research agencies have graded the china customs electronic system as 78% efficient, (Arvis, Saslavsky, Ojala, Shepherd, Busch, Raj & Naula, 2016).

South African international custom electronic service system linage has become increasingly important component in Africa business economic hub, (Opasanon & Kitthamkesorn, 2016). The system has been significant in clearing time and transparency. In Rwanda, the Revenue Authority has adopted a Rwanda electronic single window (RESW) project which responds to the need of managing its borders more effectively and thereafter facilitates efficient cross-border trade with her neighbors, (Beresford, Pettit, Xu & Williams, 2012). The had experienced high transport and freight costs for movement of goods insufficient processes and manual border procedures which led to increased delays and poor infrastructure that undermined the countrys competitiveness. RESW was adopted with the purpose of reducing delays in customs clearance of imports and exports into and from the country, (Opasanon & Kitthamkesorn, 2016).

In Kenya customs and boarder control is in the forefront of various agencies that intervene in international trade, (Çelebi, 2019). Custom department is for instance deeply involved in controlling goods which cross borders, determining goods nomenclature and origin, and collecting revenue as well as administering trade policies (Martí, Martín & Puertas, 2017). Hence the manner in which customs operates highly affect international trade either negatively or positively. In other words, the manner in which customs operates can either complicate or simplify international trade in goods, (Martí, Martín & Puertas, 2017).

Shimoni Research Centre is situated in the port town of Shimoni in Kwale County. The area is a tourist destination on the south coast of Kenya in close proximity to the Kenya-Tanzania border with access to Wasini Island via the Shimoni-Wasini channel, (KPA, 2020). Shimoni with current volumes of approximately 10,000 metric tons is by far the largest port among all coastal small ports. Shimoni has a wide well sheltered deep channel for large seagoing vessels and is also located along a well-sheltered creek with a few patches of mangrove vegetation.

Customs and Border Protection's services in Shimoni provide a capability for the detection and treatment of a broad range of border and security risks, (Chung, Talluri & Kovács, 2018). .These arrangements play an important role in the protection of Shimoni border and have had direct and indirect benefits for the Kenyan community and industry. The community has benefited from very significant detections of illicit drugs, revenue evasion, weapons and other prohibited imports and exports (Kim, Dekker & Heij, 2017). A comprehensive goods inspection regime provides protection to legitimate industry through the detection and deterrence of non-compliant importations and exportations.

1.2 Statement of the Problem

Customs and Border Control unit is charged with the responsibility to provide effective border protection and supports legitimate trade and travel and ensures collection of border related revenue and trade statistics, (Gani, 2017). The overall increase in the importance of national security issues in Kenya has required Customs and Border Protection to respond to an increasingly diverse range of border risks, (Hanaoka, Sota, Kawasaki & Thompson, 2019). Customs and Border Protection is expected to prevent the importation and exportation of an increasingly wide range of drugs, explosives, chemical and biological agents, drug precursors, goods which breach intellectual property laws and goods that do not meet accepted health or safety standards, (Hossain & Yusuf, 2019).

Over the years, Kenya Revenue Authority has invested heavily in its custom and tax administration systems with an aim to modernize its operations, (Kim, Dekker & Heij, 2017). To bolster its border control unit, Kenya Revenue Authority has empowered its enforcement unit, developed its risk management system and partnered with various security agencies like Kenya police and Port security in order to improve the perfomance of Shimoni port, however,

the contribution of these initiatives towards custom perfomance has not been scientifically tested, an information gap that exist.

Various studies have been done to establish the role of custom and border units on the perfomance of revenue authorities, for example; Polycap (2014) examined the effectiveness of the computerized system on the performance of Customs and border control department of Kenya Revenue Authority. The study revealed that computerized custom systems have contributed positively to the performance of customs department. Independent variables cargo security and tax clearance time had a positive significant impact on the performance. Kesino (2012) sought to establish the extent to which Clearing and Forwarding agents in Nairobi had adopted customs electronic procedures. The study revealed that Customs electronic procedures have a great impact on the organizations. Nada and Jack (2009) examined tax reforms in Kenya particularly in regard to policy and administrative issues. The study acknowledged that tax system in Kenya has undergone perpetual reform over the past two decades.

1.3 Objective of the study

1.3.1 General objective

The general objective of this study was to identify the effect of border control initiatives on customs perfomance at Shimoni

1.3.2 Specific objectives

i. To determine the effect of patrolling on Customs perfomance at Shimoni

ii. To determine the effect of multi-agency co-operation on Customs performance at Shimoni

iii. To determine the effect of Risk management systems on Customs perfomance at Shimoni

1.4 Research questions

i. What is the effect of patrolling on Customs perfomance at Shimoni?

ii. What is the effect of multi-agency co-operation Customs perfomance at Shimoni?

iii. What is the effect of Risk management systems on Customs perfomance at Shimoni?

1.5 Justification of the study

The study is of significance to policymakers in developing strategies to improve on custom and border control at Kenya Revenue Authority.

Kenya Revenue Authority can use the study findings to develop measures and strategies that how its employees conduct custom and border control activities in all border units it operates across the country.

The findings of the study are useful to scholars, students and academic institutions for it provides an-updated information on custom and border control activities of Kenya Revenue Authority as a case study. Lastly, the scholars can use the findings as a source of reference in their future studies.

1.6 Scope of the study

The scope of this research is the establishment of the effect of border control initiatives on customs perfomance at Shimoni.

1.7 Limitations of the study

The study faced the following limitations: reluctance by target respondents to provide data for analysis, the researcher provided a letter from the college and Adminstration to confirm that, the research had been approved and responses given were for academic purposes only. As expected respondents were reluctant in providing information for the study for fear of unveiling information that would be used to victimize them. To make it possible to collect required data, target respondents were made to understand the significance of the research in improving their organizations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the theoretical review, conceptual framework, review of variables, empirical review, research gaps and summary.

2.2 Theoretical Literature Review

The study theoretical framework is made up of; Complex Adaptive System theory, the Institutional Theory and Technology Acceptance Model.

2.2.1 Complex Adaptive System theory

A complex adaptive system is a group of simple parts, items, or people that interact; and collectively influence the behaviour of the larger system, behaviour of which is irreducible to parts, (Makrushin, Siegel & Dittmann, 2020). The term complex adaptive system epitomizes the fact that a perfect understanding of the individual parts does not automatically convey a perfect understanding of the whole systems behaviour, (Martín & Puertas, 2017). Mention must however be made that CAS is not a single theory as it encompasses more than one theoretical framework, seeking the answers to some fundamental questions about, living, adaptable, changeable systems, (Mazikana, 2019).

Complex adaptive systems are characterized by a high degree of adaptive capacity, giving them resilience in the face of perturbation, (Dos-Reis, Amorim, Cabral & Toloi, 2020). They provide feedback loops which are quite important in analysis between agents. This is quite important in classifying borders as CAS in view of the capabilities to continuously give feedbacks, (Morais, da-Costa, Alberti, Both & Righi, 2020). CAS is quite critical to comprehending the dynamics of interdependencies, relationship, and identification of effective performance measures that Borders portends. Issues of immigration, trade, crime, terrorism, drug trafficking and enforcement behaviours are created and reinforced by system dynamics that CAS offers, (Mustafa & Amjad, 2020). What, where, when and how do social, economic, political, cultural or religious factors affect borders.

Borders can be likened to a complex adaptive system because they are more than clear delineating lines separating countries, (Opasanon & Kitthamkesorn, 2016). They serve as corridors, frontiers, areas, religious and political interfaces. They influence foreign relations, reflect values and fears, and also serve as economic hubs of any nation across the world, (Polycap, 2017). These relationships and dynamics create the complexity that a border showcases. The theory is useful in explaining fluctuations, changes and responses as a system can be understood not to come from mechanistic processes, but from learned human behaviors and individual differences of border threats, identities, perceived fairness to policies, quality of information and desired security levels. For this study, the theory will be useful in explaining road patrols that the custom and border control units conduct through collaboration with other agencies in the transport sector in the country.

2.2.2 The Institutional Theory

The theory emphasizes on how modern organizations depend on their environments. From a linear perspective, it is postulated that this theory holds that organizations are affected by institutions built in much wider environments, (Quartey, 2019). Raazali, Mohammad, Othman & Kadir (2020) holds that all institutional theoretical claims identified at higher levels are used to explain processes and outcomes at lower levels of analysis. It is asserted that institutionalisms are likely to avoid both individual-level explanations and explanations situated at the same level of analysis, (Polycap, 2017). The foregoing make them to be criticized as structural biased.

The Authority responded to the foretasted challenges through training and sensitization of the staff and stakeholders. More so, the challenges were addressed by hiring new employees with the requisite skills, (Wang, Yang, Tso & Li, 2019). Political support and management style were also key to the implementation of CRM initiatives. The theory is of significance in explaining the process that KRA has put in place to effectively conduct marine, road and air patrol to an extent with collaboration of security and port authorities.

2.2.3 Technology Acceptance Model

Technology Acceptance Model has been produced by Davis, (1989), the model proposes that when users are introduced to a new technology, various factors influence their decision about how and when they will utilize it, (Wells, Sah, Moghadas, Pandey, Shoukat, Wang & Galvani,

2020). In TAM model, there are two factors perceived usefulness and perceived ease of use is relevant in computer use behaviors. Davis defines perceived usefulness as the prospective user's subjective likelihood that utilizing a particular application framework will improve his or her employment or life performance, (Wong & Tang, 2018).

Therefore Perceived Usefulness can impact the intention to accept and adopt computerized systems directly or indirectly, (Abomhara, *et al,* 2019). Perceived ease of use can be characterized as the extent to which the prospective user anticipates that the target system will be free of effort. Davis, (1989) clarifies that an individual may trust that an application is helpful however he or she may likewise find that the system is hard to utilize. As indicated by TAM, usability and perceived usefulness are the most imperative determinants of actual system use, (Arvis *et al.* 2016). The theory will be used in explaining the Behavioral tendencies of employees at KRA perceived ease of use and perceived usefulness of automation measures adopted by KRA for effective road, marine and air patrols in Shimoni. For example, the adoption of drones in aerial surveillance to replace aircrafts mainly sourced from the military and the police.

2.3 Conceptual Framework

A Conceptual Framework is a structure which the researcher believes can best explain the natural progression of the phenomenon to be studied. It is linked with the concepts, empirical research and important theories used in promoting and systemizing the knowledge espoused by the researcher, (Ravi, 2015). The conceptual framework of the study will include both the dependent and independent variables of the study. The dependent variable includes employee perfomance while the independent include; bonuses, golden handcuffs, overtime pay and piece-rate pay. The Conceptual Framework of the research study is represented in figure 2.1 below;

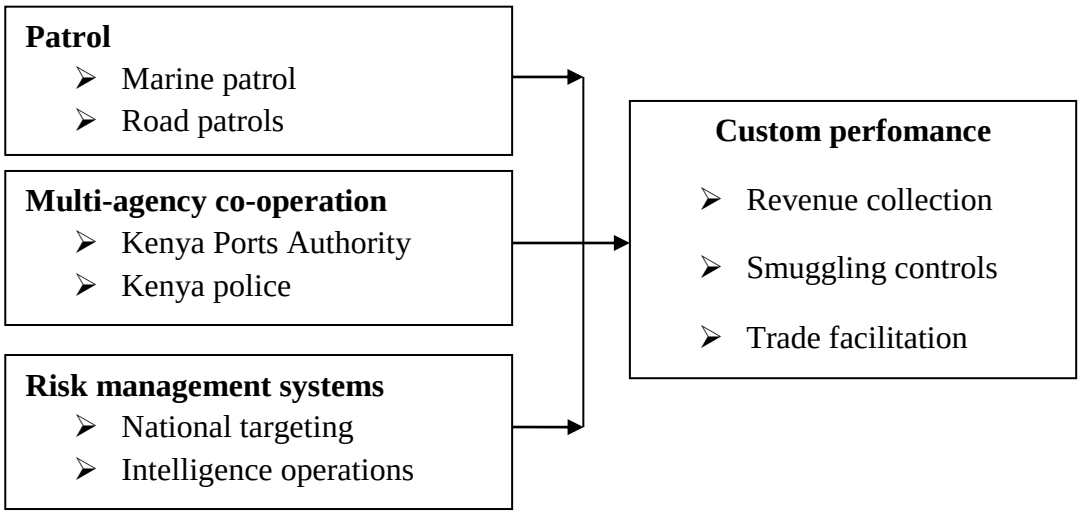

Figure 2.1: Conceptual Framework

2.4 Review of variables

2.4.1 Patrol

Despite the country's efforts to increase surveillance in the sea and other waterways, they remain porous even as entry of hard drugs and counterfeits appear common, (Bichou, 2015). The seizure of large consignments of hard drugs in Diani and Malindi in the past posed challenges to the authorities and raised concerns over security. The Government has at times stumbled on illegal imports brought in through unconventional sea routes, intercepted illicit drugs worth millions of shillings. Kenya Revenue Authority has invested in (KRA) two powerful Marine Unit boats in Mombasa to boost surveillance at sea by the Customs Services Department, (Cariolle, Chalendard, Geourjon & Laporte, 2019).

The country has witnessed an increase in counterfeit goods, whose entry could be detected and checked, (Çelebi, 2019). The on-going reforms by the Customs Department to secure the country from potential terrorist threats have been effective in protecting the borders; however, management of our coastline has been a challenge, partly because of its porous nature and due to lack of surveillance equipment, (Chung, Talluri & Kovács, 2018). Marine unit was established to effectively control the Lake and sea borders as part of Customs reforms and modernisation initiatives.

Electronic cargo tracking systems were introduced by KRA to replace the escort of goods by the custom officers that was considered inefficient, straining and costly to both KRA and traders, (Gani, 2017). By introduction of common check points as opposed to multiple check points that existed previously. The escort duties which were solely the duties of custom enforcement officers had many challenges. The custom officer was supposed to be at the gate of exit, known as gate18/20 at the port of Mombasa before the release of cargo.

ICT has made it possible to track cargo and fleet for Logistic and transport firms. This has had a lasting impact on the security of both the cargo and fleet (Hanaoka, Sota, Kawasaki & Thompson, 2019). In Kenya, the requirement by all truckers to install the Electronic Cargo Tracking System (ECTS) was initially met with opposition. However, truckers have slowly embraced the ECTS, which seeks to replace the security bond while monitoring cargo in transit and providing real time information on location, security and condition of cargo and assets, (Hossain & Yusuf, 2019).

KRA's expectations on the ECTS are among others, ability to secure cargo under KRA's control, raise an alert in an event of violation, (Kim, Dekker & Heij, 2017). Ability to monitor cargo along supply chain, give cargo status, give geographical location and any pertinent cargo information, record cargo events from source to destination. In this study, the interest will be to link the technology of acceptance model, where factors like political has had an effect on the adoption of ICT security systems. With the advent of EAC union there has been a push by the government to adopt ECTS.

Cargo security is sought through container screening by using sensors, x-rays, gamma rays, radiation monitoring, magnetic-field based intrusion detection, and other forms of container imaging at loading and on arrival, (Makrushin, Siegel & Dittmann, 2020). This is supplemented with a policy of selective physical inspection of containers deemed suspicious, along with controlled access to the facilities themselves. Container screening aims to use non-intrusive techniques to inspect for dangerous cargo such as nuclear materials and chemical weapons, (Martín & Puertas, 2017). Port security is attempted through controlled access, coupled with surveillance, based on intelligent vision, consisting of fixed and deployable cameras that not only see, but also collect and analyze images and detect threats, if present.

2.4.2 Multi-agency co-operation

The maritime territory is a very dangerous place. In addition to natural hazards posed by weather, pirates and reefs, additional potential dangers arise from unregulated or illegal activity and unsafe practices, (Opasanon & Kitthamkesorn, S2016). Thus, it is crucial that one or more authorities hold clear responsibility for ensuring maritime safety. These agencies come together to bolster actions a government can and should take to prevent or mitigate the possibility of dangerous maritime incidents. Investigative and regulatory powers are essential for authorities to review incidents, determine responsibility and ascertain what corrective actions can prevent future mishaps.

Security administrators need to compile and maintain records of licensed mariners, port agencies and port workers with authorization to access restricted areas and issue them secure credentials that provide reliable confirmation of the holder's identity, (Mustafa & Amjad, 2020). The institutions exercising this function should link with those overseeing states surface and air transportation network to ensure that goods and people travel efficiently and safely. If possible, they should also link with other administrations in the region to develop common protocols to ease the transition of users from one jurisdiction to the next.

Ports are not isolated areas, but rather major centers of commerce, usually surrounded by large cities and economic centers. An attack on a port could be highly visible and potentially the scene of mass conflagration, (Opasanon & Kitthamkesorn, 2016). As a result of urban development, most major ports are no longer confined to strictly industrial areas, but rather have become well-developed centers of commerce and entertainment, surrounded by built up waterside areas dedicated to tourism and recreation. Many of these facilities are located next to volatile maritime infrastructure (fuel tanks, docks, etc.) that could create mass conflagration if attacked through large explosive force.

Sympathetic detonation, fires, and other catastrophic effects would certainly create mass casualties. Organizations dedicated to maritime defense, whether navies, coast guards or maritime police are often the agencies called upon by government to mobilize in response to natural disasters, humanitarian crises, or other national emergencies, (Quartey, 2019). This capability is crucial and immediate in the maritime sphere, where many types of natural disasters, hurricanes, typhoons, storms, tsunamis - affect coastal residents and property

disproportionately. National security institutions are one of the most immediate and powerful tools tax administrators and port authorities can use to enhance safety at the port.

2.4.3 Risk management systems

Risk management as a process that seeks to eliminate, reduce and control risks, enhance benefits, and avoid negative outcomes from speculative exposures, (Raazali *et al*, 2020). Therefore, the essence of risk management in business firms is to maximise the potential of success and minimise the probability of future losses. Risk management involves planning for risks, analysing risks, developing risk response strategies, monitoring and controlling risks.

With the port being identified as the system of interest, risk identification is the first and in many ways the most important step in risk management, (Wells *et al.* 2020). An overlooked risk is likely to introduce more error into the overall risk estimate than an inaccurate consequence model or frequency estimate. Therefore, the aim of risk identification is to produce a comprehensive list of all risks. The usual approach to risk identification which is to try to list all conceivable risks, sometimes helped by a source categorization

Investigating historical data on previous incidents is typically the first step, in addition to structured brainstorming sections with practitioners for conceivable risks, (Wong & Tang, 2018). Taking into account the limitation of resources, a typical approach involves the screening of risks in order to identify those which should be targeted on the basis of the combined influence of their frequency of occurrence and their consequences. Rear incidents of negligible impact are to be disregarded.

Any risk should have a sufficient number of barriers and escalation factor controls to ensure the integrity of the risk assessment, (Opasanon & Kitthamkesorn, 2016). If a risk is released, the accidental event can escalate to one of the several possible consequences. To prevent escalation, the mitigation measures, emergency preparedness and escalation control measures need to be in place to stop chain of events propagation and or to minimize the consequences of escalation. Each recovery measure can be associated with one or several failure modes, or escalation factors. Control measures can be specified to prevent or minimize these failures.

2.4.4 Custom Perfomance

Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (Kiriro, 2015). Organizational performance is the concept of measuring the output of a particular process or procedure, then modifying the process or procedure to increase the output, increase efficiency, or increase the effectiveness of the process or procedure (Kiriro, 2015). The concept of organizational performance can be applied to either individual performance or organizational performance such as a racing team or a commercial enterprise or even a farm or livestock production.

In performance improvement, organizational performance is the concept of organizational change in which the managers and governing body of an organization put into place and manage a program which measures the current level of performance of the organization and then generates ideas for modifying organizational behavior and infrastructure which are put into place to achieve higher output, (Chaffey & Smith, 2017). The primary goals of organizational performance are to increase organizational effectiveness and efficiency to improve the ability of the organization to deliver goods and or services. Another area in organizational performance that sometimes targets continuous improvement is organizational efficacy, which involves the process of setting organizational goals and objectives in a continuous cycle, (Dushinski, 2010).

Financial ratios are a technique deployed to access the performance of a company. A myriad of financial ratios are available for assessing performance of organizations, (Wang, Yang, Tso & Li, 2019). Return on asset, Operational self-sufficiency, financial self-sufficiency, Return on equity fall within the domain of profitability measures. For instance, a system of internal controls prevents fraud and errors through monitoring and enhancing financial reporting and organizational processes and ensuring compliance with pertinent regulations and laws, (Hossain & Yusuf, 2019).

2.5 Empirical review

Teravaninthorn and Raballand (2008) evaluated international corridors in Africa and found that the transport of freight between Sahel countries and their ports and thus the world market features prices significantly exceed the underlying costs. Their analysis suggests most of this

situation owes to rent-seeking road transport cartels benefiting from oligopolies. Of particular concern is the trucking industry in West and Central Africa, which is characterised by cartels offering high prices and low service quality.

Polycap (2014) examined the effectiveness of the computerized system on the performance of Customs and border control department of Kenya Revenue Authority. The research design used for this study was descriptive survey. The target population was 120. The sample chosen comprised staff working in various tax collection stations. The sample size comprised of 120 respondents selected using stratified random sampling. The main instrument of collecting primary data was questionnaire. Data was analyzed mainly by use of descriptive and inferential statistics. The study revealed that computerized systems have contributed positively to the performance of customs department. Independent variables cargo security and tax clearance time had a positive significant impact on the performance. Revenue collection and tax administration had an insignificant impact hence there may be other many factors which affect revenue collection other than computerized systems.

Kesino (2012) sought to establish the extent to which Clearing and Forwarding agents in Nairobi had adopted customs electronic procedures. This study used a descriptive survey method, in finding out how electronic lodgment of Customs entries affects trade facilitation. The target population of this research consisted of 350 clearing and forwarding firms based in Nairobi out of the 962 licensed in Kenya. This study used stratified sampling technique, which was appropriate in coming up with a sample for the study. The study revealed that Customs electronic procedures have a great impact on the organizations.

Nada and Jack (2009) examined tax reforms in Kenya particularly in regard to policy and administrative issues. The study acknowledges that tax system in Kenya has undergone perpetual reform over the past two decades. It is observed that it is imperative to have continued reform of both policy instruments and both administrative and enforcement capacity of the tax system. This is against the backdrop of the KRA's revelation that, there are certain entrepreneurs and members of certain professional bodies who are required to register their annual turnover independently; however, this requirement is hardly enforced.

Sakhasia (2017) sought to determine the influence of electronic custom management systems on service delivery at Eldoret KRA station. The study adopted a descriptive research design,

target population comprised of 4 KRA managers and 282 clearing agents, truckers and exporters. Data was collected by use of questionnaires and interview schedules. The study established that; introduction of e-customs had improved service delivery.

2.6 Critique of existing research

Studies done by various scholars have produced varied results i.e Polycap (2014) examined the effectiveness of computerized system on the performance of Customs and border control department of Kenya Revenue Authority. The study revealed that computerized systems have contributed positively to the performance of customs department. Kesino (2012) sought to establish the extent to which Clearing and Forwarding agents in Nairobi had adopted customs electronic procedures. The study revealed that Customs electronic procedures have a great impact on the organizations. Nada and Jack (2009) examined tax reforms in Kenya particularly in regard to policy and administrative issues. The study acknowledges that tax system in Kenya has undergone perpetual reform over the past two decades. However, the studies reviewed did not address the border control initiatives adopted by this study. In as much as the variables reviewed by scholars show their effect on custom perfomance, they fail to prove the relationship between patrolling, multi-agency and risk management systems on custom perfomance.

2.7 Research gaps

The literature reviewed highlights the possible relationships that exist between custom management and boarder control on perfomance of revenue administrators and port authorities. The focus of previous scholars on this area of study is on modernization of custom and border control with the application of information technology systems and technology and general policy reforms. For example, Nada and Jack (2009) examined tax reforms in Kenya particularly in regard to policy and administrative issues. While, Kesino (2012) sought to establish the extent to which Clearing and Forwarding agents in Nairobi had adopted customs electronic procedures. The study revealed that Customs electronic procedures have a great impact on the organizations. No available study has been done on the role marine, air and road patrol on perfomance of KRA in Shimoni, research gap that exists.

2.8 Summary

The literature reviewed gives a detailed basis for arguing the importance of undertaking the study with support on theoretical foundations that point out set of beliefs and propositions used as a basis for the study argument. The variables of the study are well explained and review of studies given that highlight established relationships between the variables from studies done in various contextual setting.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers, the Research Design, Target Population, Sample Technique and Sample Size, Data Collection Techniques, Test of significance and data analysis.

3.2 Research Design

Lavrakas (2008) characterize research design as the general arrangement for getting answers to the inquiries being concentrated on and for taking care of a portion of the challenges experienced amid the research process. The study used a descriptive survey design because it provides the best answers when "how" or "why" questions are raised in a study. According to (Cooper & Schindler, 2013), a descriptive study attempts to describe or define a subject, often by creating a profile of a group of problems, people, or events.

3.3 Target Population

Target population is the population which the researcher wants to generalize results of the study on (Mugenda & Mugenda, 2003). The population of interest consisted of 20 enforcement officers, 50 KPA security staff and 35 Kenya police officers.

Table 3.1: Target Population

Unit	Population	Percentage
Enforcement	20	19
KPA security	50	48
Kenya Police	35	33
Total	**105**	**100**

Source: Kenya Revenue Authority (2019)

3.4 Sampling frame

A sampling frame is a source from which a sample is drawn for a researcher study. The sampling frame consisted of members of staff working in the KRA enforcement unit, KPA security and the Kenya Police.

3.5 Sample Size and Sampling Technique

Kothari and Garg (2014), defines a sample as a small group obtained from the accessible population, while sampling is a process of selecting a number of individuals for a study in such a way that the individuals selected represent the large group from which they were selected. The stratified random sampling was used to accomplish the desired representation from diverse subgroups in the population. The study engaged 52 participants calculated using the formula below.

$$n = \frac{N}{1 + Ne^2}$$

n = sample size

N = Target population

e = margin error of 10%

Therefore; $n = \frac{105}{1 + 105\ (0.1)^2}$ $n = 52$

Table 3.2: Sample size

Unit	Population	Sample
Enforcement	20	10
KPA security	50	25
Kenya police	35	17
Total	**105**	**52**

Source: Kenya Revenue Authority (2019)

3.6 Data Collection Instruments

The tools used by researchers to actually collect data in the research process. The common data collection instruments in research include interviews, questionnaires, documentary analysis and observation, (Walliman, 2017). The main source of data was primary data. Walliman (2017) describes primary data as items that are original to the problem under study. The method that was used to collect this data from the subjects was through questionnaires. A questionnaire is a pre-formulated written set of questions to which the respondents record the answers usually within rather carefully outlined options. A likert scale questionnaire was used.

3.7 Data Collection Procedures

This is the procedure of collecting, measuring and analyzing accurate insights for research using standard validated techniques. The most critical objective of data collection is ensuring that information-rich and reliable data is collected for statistical analysis so that data-driven decisions can be made for research (Smith, 2015). Essentially there are four choices for data collection in-person interviews, mail, phone and online. Questionnaires were self-administered on the respondents using the drop-and-pick later method with the help of a research assistant. This approach gave the respondents time to compose feedback that is thoughtful and relevant to the research problem.

3.8 Pilot study

Prior to the main study a pilot study constituting 10% of the targeted respondents was carried out. As such, therefore, 15 respondents took part in the pilot study. The respondents participating in this study was excluded from the main study, (Kothari & Garg, 2014). The aim of undertaking a pilot test is to establish any potential weaknesses of the research instrument by testing both the reliability and validity of the instrument. In this study, a pre-test sample of 10% was used in which the questionnaire items was finally be rephrased to eliminate any mistakes, (Kothari & Garg, 2014).

3.8.1 Validity

Validity in research is done to check how good the study data is to be used in analysing the study findings, (Marshall and Rossman, 2014). The list of questions that a research subject the participants to in order to provide the required information for the study need to be checked

and examined to ensure that they help the researcher accomplish his or her objectives set forth. For this study validity was tested using KMO Bartlett test. According to Smith (2015), Kaiser-Meyer-Olkin Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in your variables that might be caused by under-lying factors. High values (close to 1.0) generally indicate that a factor analysis may be useful with your data. If the value is less than 0.50, the results of the factor analysis probably won't be very useful. Bartlett's test of Sphericity tests the hypothesis that your correlation matrix is an identity matrix, which would indicate that your variables are unrelated and therefore unsuitable for structure detection. Small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with your data.

3.8.2 Reliability

Study reliability is a technique used by researcher to check conformity of instruments used and ensure they produce similar results when the research is done in multiple times. Reliability was best achieved through testing of responses once validity of the data is established, as result validity and reliability can be done concurrently or simultaneously, (Marshall and Rossman, 2014). The common approach used by researchers in the Cronbach alpha that has a constant alpha of 0.7, all the test conducted on the responses are expected to give an alpha of more than 0.7 failure to which the data is not considered reliable.

3.9 Data Analysis and Presentation

According to Walliman (2017) data analysis is a process of collecting, transforming, cleaning, and modeling data with the goal of discovering the required information. The results so obtained are communicated, suggesting conclusions and supporting decision-making. The study applied descriptive statistics and inferential statistics which involved correlation and regression analysis. Descriptive statistics that were used to analyze the data include means, range, minimums, maximums and standard deviation. The following simple linear regression model will be used to analyse the relationship between the dependent and independent variables.

$$\mathbf{Y=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilon}$$

Where;

Y = Perfomance

α = y intercept of the regression equation.

β_1, β_2, β_3, β_4 = are regression coefficients of the respective independent variables

X_1 = Patrol

X_2 = Multi-agency Co-operation

X_3 = Risk Management Systems

ε = Error term

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

Chapter four covers data analyzed and presents data in descriptive statistics and inferential statistics that encompasses regression and correlation was done to establish the significance level of the relationship that exists between the study variables. Findings are presented in tables, summary and charts to give clear illustration of the relationships established.

4.2 Response Rate

The study was done on 45 respondents who filled and returned the questionnaires out of the 52 respondents that were given questionnaires. The table below provides the frequencies and percentages of the study respondents.

Table 4.1: Response Rate

Response	Frequency	Percentage
Responses	45	86%
Non-responses	7	14%
Total	**52**	**100%**

The response rate obtained was at 86% for those who filled and returned questionnaires while 14% did not provide data for analysis. According to Mugenda and Mugenda (2012) a response rate above 70% is good. The high return rate is attributed to the fact that the researcher administered the questionnaires directly to respondents.

4.3 Pilot test results

4.3.1 Validity of the variables

For this study validity was tested using KMO Bartlett test. According to Smith (2015), Kaiser-Meyer-Olkin measure of sampling adequacy is a statistic that indicates the proportion of variance in variables that might be caused by under-lying factors. High values (close to 1.0)

generally indicate that a factor analysis may be useful with your data. If the value is less than 0.50, the results of the factor analysis probably won't be very useful. The study obtained a Sampling Adequacy of .802 and significance level of 0.000 which proved study data to be valid and useful in explaining the relationship between independent and dependent variables.

Table 4.2 KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of	Sampling Adequacy	.802
	Approx. Chi-Square	83.466
Bartlett's Test of Sphericity	df	2
	Sig.	.000

4.3.2: Reliability of the variables

Reliability of the study variables was tested by use of Cronbach alpha method. The analysis gave an overall alpha of 0.7775 which is above the average 0.7 alpha hence the data obtained is reliable in generalizing the study findings. The study conducted a reliability test for each of the study variables was tested by use of Cronbach alpha method. From the findings as illustrated in table 4.2 below; all variables had an alpha of more than 0.7, it's concluded that the study data is reliable and has a high degree of consistency.

The table below provides the reliability results for the study variables tested by the use of Cronbach alpha.

Table 4.3: Reliability test for each variable

Variable	Cronbach alpha
Patrolling	0.803
Multi-agency co-operation	0.711
Risk management systems	0.805
Custom perfomance	0.791
Total	**0.7775**

4.4 General information

The study sought to establish the general information of the study participants of particular interest was the respondents; gender, age and level of education.

4.4.1 Respondents level of education

Table 4.5 below show the results of the level of education for study respondents As shown in the figure above; majority of the respondents at 33.2% had a Certificate level of education, 4.4% had a KCPE level, 22.2% at Diploma level of education while 18% had a university level of education.

Table 4.3: Level of education

Highest level of education	Frequency	Percent
KCPE	2	4.4
KCSE	10	22.2
Certificate	15	33.2
Diploma	10	22.2
Total	**45**	**100**

4.4.2 Period of working experience

Table 4.4 below show the period in which respondents have operated in the target organizations,

Table 4.4: Period of working experience

Period	Frequency	Percent
0-5 years	23	51
6-10 years	8	18
11-15 years	9	20
16 and above	5	11
Total	**45**	**100**

4.5 Descriptive Analysis

This section discusses the study variables analysed mean, standard deviation, minimum and maximum values and frequency distribution for all the responses that were recorded by respondents. The analysis further shows the rating scale of the response based on a Likert scale of 1-5 for each question that was asked.

4.5.1 Patrol

The study sought to establish the influence of patrol on custom perfomance. As shown in table 4.5; the descriptive measures on patrolling and custom perfomance are as follows.

Table 4.5: Patrol

Statement	Mean	Std.dev
Custom has enhanced water way surveillance	3.9000	1.1400
Custom has enhanced road and land surveillance	4.3200	.91115
Patrolling has led to interception of counterfeits	3.1100	.71205
Patrolling has enabled tracking and goods movement	4.4201	.85322

As presented above, the findings show that on average mean of 3.1100 and 4.4201 respondents agreed that patrol influences custom perfomance. As shown in the table above; the statement on: Custom has enhanced road and land surveillance had the highest mean of 4.4201 and std.dev of 0.85322; Custom has enhanced road and land surveillance had a mean of 4.3200 and std.dev of 0.91115; Custom has enhanced water way surveillance had a mean of 3.9000 and std.dev of 1.1400 while Patrolling has led to interception of counterfeits and drugs had a mean of 3.5550. These findings concur with that of Teravaninthorn and Raballand (2008) study which evaluated international corridors in Africa and found that transport of freight between Sahel countries and their ports was significantly affected by world market prices.

4.5.2 Multi-agency co-operation

The study sought to establish the influence Multi-agency co-operation on custom perfomance. As shown in table 4.6; the descriptive measures on Multi-agency co-operation and its relationship to custom perfomance are as follows.

Table 4.6: Multi-agency co-operation

Statement	Mean	Std.dev
The Kenya police and port security are involved in border control operations	3.1610	0.88121
Custom unit has set a collaborative inter-agency plan that integrate other agency operations	4.2300	0.91551
There is free sharing of intelligence between involved agencies	3.4870	1.60453
Agencies have successful boosted enforcement unit	4.6400	1.45223

As presented above, the findings show that on average mean of 3.1610 and 4.6400 respondents agreed that Multi-agency co-operation influences custom perfomance. As shown in the table above; the statement on: Agencies have successful boosted custom enforcement unit had the highest mean of 4.6400 and std.dev of 1.45223; Custom unit has set a collaborative inter-agency plan that integrate other agency operations had a mean of 4.2300 and std.dev of 0.91551; There is free sharing of intelligence between involved agencies had a mean of 3.4870 and std.dev of 1.60453 while statement on the Kenya police and port security are involved in border control operations had a mean of 3.1610 and std.dev of 0.88121. These findings positively relate the study of Nada and Jack (2009) which examined tax reforms in Kenya particularly in regard to policy and administrative issues. The study observed that it is imperative to have continued reform of both policy instruments and both administrative and enforcement capacity of the tax system.

4.5.3 Risk management system

The study sought to establish the influence Risk Management systems on custom perfomance. As shown in table 4.7; the descriptive measures on Risk Management and its relationship to custom perfomance are asfollows.

Table 4.7: Risk management systems

Statement	Mean	Std.dev
Risk management system in place is useful in		
risk identification	3.3000	1.12013
Risk management system in place is useful in risk assessment	4.1140	0.92080
Risk management system in place is useful in risk prevention	3.8110	1.69032
Risk management system in place is useful in risk mitigation	4.4127	1.79162
Risk levels at the unit is at a remarkable low level	4.3342	1.45631

As presented above, the findings show that on average mean of 3.3000 and 4.4127 respondents agreed that Risk Management systems influence custom perfomance. As shown in the table above; the statement on: risk management system in place is useful in risk mitigation had the highest mean of 4.4127 and std.dev of 1.79162; Risk levels at the unit is at a remarkable low level had a mean of 4.3342 and std.dev of 1.45631; Risk management system in place is useful in risk assessment had a mean of 4.1140 and std.dev of 0.92080; Risk management system in place is useful in risk prevention had a mean of 3.8110 and std.dev of 1.69032 while statement on Risk management system in place is useful in risk identification had a mean of 3.3000 and std.dev of 1.12013. The findings positively relate to study findings by Polycap (2014) study which examined the effectiveness of computerized system on the performance of Customs and border control department of Kenya Revenue Authority. The study established that cargo security and tax clearance had a positive significant impact on the performance.

4.5.4 Custom Perfomance

The study sought to establish the descriptive measures for Custom perfomance at the port of Shimoni. As presented below, the findings show that; the most influential factor affecting custom perfomance is corporate growth with a mean of 4.5800 and std.dev of 1.8572; followed by, Increase in revenue collection with a mean of 4.2431 and std.dev of 1.3345; Tax compliance rate has increased a mean of 4.1885 and std.dev of 1.7417 while revenue targets are met always had a mean of 4.0412 and a std.dev of 1.1543;

Table 4.8: Custom Perfomance

Statement	Mean	Std.dev
Increase in revenue collection	4.2431	1.3345
Revenue targets are met always	4.0412	1.1543
Corporate growth has been witnessed	4.5800	1.8572
Tax compliance rate has increased	4.1885	1.7417

4.6 Correlation Results

Correlation analysis was done to establish the strength of the relationship between the independent variables i.e patrol, multi-agency co-operation, risk management systems on Custom perfomance at Shimoni. The significance levels of the relationships are shown below;

Table 4.19: Correlation Analysis

	CP	P	MC	RMS
CP	1			
Sig. (2-tailed)				
P	.560**	1		
Sig. (2-tailed)	.000			
MC	.695**	.776**	1	
Sig. (2-tailed)	.000	.000		
RMS	.695**	.776**	1.000**	1
Sig. (2-tailed)	.000	.000	.000	

Where **P** = Patrol **MC** = Multi-agency co-operation **RMS** = Risk management systems **CF**= Custom perfomance

The results reveal a significant positive relationship between patrol, multi-agency co-operation, risk management systems on Custom perfomance in Shimoni. This affirms the study assumptions that the independent variables have an influence on custom perfomance. These findings support the results of a study by Polycap (2014) which examined the effectiveness of the computerized system on the performance of Customs and border control department of Kenya Revenue Authority. The study revealed that computerized systems have contributed positively to the performance of Customs department.

4.7 Regression Analysis

Regression was done to estimate the relationships between a dependent variable and the independent variables. It was utilized to assess the strength of the relationship that exists between the variables and for modeling the future relationship between them.

Table 4.11: Regression Model Summary

Model-R	R-Square	Adjusted R Square	Std. Error	Sig. F	Durbin-Watson
.647a	.0.4186	.302	2.03894	.023	.870

a. Predictors: (Constant), Patrol, Multi-agency co-operation, Risk management systems.
Dependent variable: Custom perfomance

From table 4.23 above; it can be observed that the r-square value of the variable is 0.419 which means that patrol, Multi-agency co-operation, Risk management systems strongly correlate with Custom perfomance. This indicates that the predictor variables can only explain by 41.9% of Custom perfomance (dependent variable), hence there are other factors (58.1%) which were not covered inthe study.

Table 4.12: ANOVA result

Model	Sum of Square	df	Mean Square	F	Sig
Regression	18.826	3	4.707	12.675	.000
Residual	62.112	41	.647		
Total	80.224	44			

a. Dependent Variable: Custom perfomance

b. Predictors: (Constant), Patrolling, Multi-agency co-operation, Risk management systems

ANOVA is considered significant if its p-value is less or equal to 0.05. The model has a P-value of 0.00 < 0.05; hence fit in explaining the relationships between independent variables and Custom perfomance. With an F value of 12.675 and P-value of 0.000 the model, shows that the regression is significant and the variables have a positive influence on Custom perfomance

Table 4.13: Regression coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	sig
	Beta	Std. Error	Beta		
(Constant)	3.526	2.964		3.319	.000
Patrolling	.178	.194	.124	.9180	.003
Multi-agency	.006	.141	.006	.0440	.009
RMS	.012	.137	.012	.0870	.000

From table 4.26 above, it can be observed that the study had an intercept of 3.526 which implies that when all other factors are held constant at zero, variation in Custom perfomance would be 3.526.

$$Y= 3.526+ 0.178X_1 + 0.06X_2+ 0.012X_3$$

From the above regression results, it can be deduced that a unit change in patrolling influences custom perfomance by 0.178, a unit change in Multi-agency co-operation influences custom perfomance by 0.06 while a unit change in Risk management systems influences custom perfomance by 0.012. All the dependent variables were positive hence indicating positive relationship between patrol, multi-agency co-operation and risk management systems on Custom perfomance. These findings prove that border control initiatives significantly influence the perfomance of custom unit in Shimoni hence the null hypothesis which reads; border control initiatives does not influence the perfomance of custom was rejected and the alternative hypothesis was adopted.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMENDATIONS

5.1 Introduction

This chapter presents the summary of findings, discussions, conclusions drawn from the findings and recommendations. The conclusion and recommendations drawn were focused on addressing the research questions as presented in chapter one. Suggestions for future studies have also been made.

5.2 Summary of the Findings

5.2.1 Patrol

The study established that patrol influences Custom perfomance. Road and land surveillance were found to be the most influential factors of perfomance, this was followed by enhanced water way surveillance. Patrol measures adopted has helped the authority in the interception of counterfeits and drugs. Inferential statistics (regression and correlation co-efficient) reveal a positive and significant relationship between patrol and custom perfomance.

5.2.2 Multi-agency co-operation

The study established that Multi-agency co-operation influences Custom perfomance. The most influential factor observed was the role done in the agencies in boosting Custom enforcement unit. Another factor highly supported by respondents was collaborative inter-agency plan that integrated. The least influential factors as indicated by respondents was free sharing of intelligence between involved agencies and involvement of Kenya police and port security in border control operations. Inferential statistics (regression and correlation co-efficient) reveal a positive and significant relationship between Multi-agency co-operation and Custom perfomance.

5.2.3 Risk management systems

The study established that risk management systems influence Custom perfomance. According to the findings, the most influential factors included usefulness of risk mitigation, remarkable low level of risk at the unit, usefulness of the system in in risk assessment while its role in prevention and identification were identification was lowly rated by respondents.

Inferential statistics (regression and correlation co-efficient) reveal a positive and significant relationship between risk management systems and Custom perfomance.

5.3 Conclusion

Based on study findings; the study concludes that; patrol, Multi-agency co-operation and risk management systems positively and significantly influence the perfomance of Shimoni Custom unit.

5.4 Recommendations

The study recommends for the adoption of high-tech equipments that can be used by the custom unit in the surveillance of border units and all entry points. Kenya revenue Authority management should acquire automated machines or unmanned machines that can do both air, land and sea surveillance more effectively. Furthermore, the study recommends for the redevelopment of the collaborative approaches between the various multi-agencies to enhance swiftness efficiency in operations.

5.5 Areas for further research

The study established that, the risk management system is weak in identification and prevention but good in mitigation, this finding is contradictory. More research is needed to help in understanding how a system may fail to detect a risk but manage to mitigate.

Furthermore, the findings reveal that patrol has led to interception of counterfeits and drugs at the border points in shimoni. However, it's reported that there is an influx of counterfeits in the market. Given that most of imports pass through the port where the custom department primarily inspects the standard and quality of goods, there is need for a study to establish the reasons as to why the country is still flooded with counterfeits.

REFERENCES

Abomhara, M., Yayilgan, S. Y., Shalaginova, M & Székely, Z., (2019).*Border Control and Use of Biometrics: Reasons Why the Right to Privacy Can Not Be Absolute, In IFIP International Summer School on Privacy and Identity Management* (pp. 259-271), Springer, Cham

Arvis J. F, Saslavsky D, Ojala L, Shepherd B, Busch C., Raj, A & Naula, T., (2016).*Connecting to Compete 2016: Trade Logistics in the Global Economy-The Logistics Performance Index and Its Indicators*, World Bank.

Bichou, K., (2015).*The ISPS code and the cost of port compliance: an initial logistics and supply chain framework for port security assessment and management, In Port Management,* Palgrave Macmillan, London.

Cariolle, J., Chalendard, C., Geourjon, A. M & Laporte, B., (2019).Measuring and improving the performance of customs valuation controls: An illustration with Gabon, *The World Economy, 42(6), 1850-1872.*

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Çelebi, D., (2019).The role of logistics performance in promoting trade, *Maritime Economics & Logistics, 1-17.*

Chung, W., Talluri, S & Kovács, G., (2018).Investigating the effects of lead-time uncertainties and safety stocks on logistical performance in a border-crossing JIT supply chain, *Computers & Industrial Engineering, 118, 440-450.*

Gani, A., (2017).The logistics performance effect in international trade. *The Asian Journal of Shipping and Logistics, 33(4), 279-288.*

Hanaoka, S., Sota, M., Kawasaki, T., & Thompson, R. G., (2019).Performance of cross-border corridors in East Africa considering multiple stakeholders, *Transport Policy, 81, 117-126.*

Hossain, M. A., & Yusuf, M. A., (2019).Application of post-clearance audit (PCA) as a trade facilitation tool in Bangladesh: Challenges and needed initiatives, *World Customs Journal, Volume, 13, 153-164.*

Kim T. Y., Dekker, R & Heij, and C., (2017).Cross-border electronic commerce: Distance effects and express delivery in European Union markets, *International Journal of Electronic Commerce, 21(2), 184-218.*

Makrushin, A., Siegel, D., & Dittmann, J., (2020).Simulation of border control in an ongoing web-based experiment for estimating morphing detection performance of humans, In Proceedings of the 2020 ACM Workshop on Information Hiding and Multimedia Security (pp. 91-96).

Marteau, J. F., Raballand, G., & Arvis, J. F., (2007).*The cost of being landlocked: logistics costs and supply chain reliability*, The World Bank.

Martí, L., Martín, J. C & Puertas, R., (2017).A DEA-logistics performance index, *Journal of Applied Economics, 20(1), 169-192*

Mazikana, A. T., (2019).The Effect of Automating Customs Systems on Performance of Zimbabwe Revenue Authority (ZIMRA), Available at SSRN 3431840.

Mendes dos Reis, J. G., Sanches Amorim, P., Sarsfield Pereira Cabral, J. A., & Toloi, R. C. (2020). The Impact of Logistics Performance on Argentina, Brazil, and the US Soybean Exports from 2012 to 2018: *A Gravity Model Approach, Agriculture, 10(8), 338*

Morais, F. Z., da Costa, C. A., Alberti, A. M., Both, C. B., & da Rosa Righi, R., (2020).When SDN meets C-RAN: A survey exploring multi-point coordination,

interference, and performance, *Journal of Network and Computer Applications, 102655.*

Mustafa, T., & Amjad, F., (2020).*Analyzing trade facilitation bottlenecks across China-Pakistan border and recommendations for their improvement under CPEC Framework. In resilience and sustainable transportation systems,* Reston, VA: American Society of Civil Engineers.

Opasanon, S & Kitthamkesorn, S., (2016).Border crossing designs in light of the ASEAN Economic Community: Simulation based approach, *Transport Policy, 48, 1-12.*

Polycap L. M., (2017).*Computerized systems effects and performance of customs and border control department of Kenya Revenue Authority*, Doctoral dissertation, Kenyatta University.

Quartey, E. R. I. C., (2019).*Mobility and border control practices in Ghana: a case study of Paga border post*, Doctoral dissertation, University of Ghana

Raazali, N. A. M., Mohammad, R., Othman, N., & Kadir, Z. A., (2020).Standard Time of Import Paperwork Clearance Department for Sustainability Organization Performance in Forwarding Company, *Journal of Environmental Treatment Techniques, 8(1), 504-520.*

Walliman, N., (2017).*Research methods: The basics,* Routledge

Wang, F., Yang, Y., Tso, G. K., & Li, Y., (2019).Analysis of launch strategy in cross-border e-Commerce market via topic modeling of consumer reviews. *Electronic Commerce Research, 19(4), 863-884.*

Wells, C. R., Sah, P., Moghadas, S. M., Pandey, A., Shoukat, A., Wang, Y & Galvani, A. P. (2020).Impact of international travel and border control measures on the global spread of the novel 2019 coronavirus outbreak. *Proceedings of the National Academy of Sciences, 117(13), 7504-7509.*

Wong, W. P & Tang, C. F., (2018).The major determinants of logistic performance in a global perspective: evidence from panel data analysis, *International Journal of Logistics Research and Applications, 21(4), 431-443*

Appendix i: Letter of Introduction

Kenya School of Revenue Administration

KENYA REVENUE AUTHORITY

ISO 9001:2015 CERTIFIED

KRA/KESRA/MSA/106 **5th November 2020**

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: REQUEST TO COLLECT RESEARCH DATA

This is to certify that the following is bona fide student of the Kenya School of Revenue Administration Mombasa Campus undertaking Post Graduate Diploma in Tax Administration.

Name	Admission Number
MOHAMMED AHMED MWIJAA	HDB335-C016-2531/2016

The above mentioned student is in his final year of study at the school and currently conducting research on the **EFFECT OF BORDER CONTROL STRATEGIES ON CUSTOMS PERFORMANCE AT SHIMONI BORDER STATION.** The student is in the process of gathering data and thereafter, compile a report that will strictly be used for academic purposes only. The School would therefore like to seek your permission to allow him/her collect information that relates to his research from your organization.
Thank you in advance for your support and cooperation.

Yours sincerely,

Mumia B.J.
Associate Head of Research KESRA, Mombasa Campus

ISO 9001 BUREAU VERITAS Certification UKAS

Tulipe Ushuru Tujitegemee !

KENYA VISION 2030

Appendix ii: Questionnaire

Section A: Background information

i. Please tick the highest level of Education you attained

- KCPE ☐
- KCSE ☐
- Certificate ☐
- Diploma ☐
- University Degree ☐

ii. Please (tick) the name of the department you are working in

1. Tax administration ( )
2. Security ( )
3. Accounts ( )
4. IT ( )
5. Sales and marketing ( )

iii. Please indicate your working Experience in years:

- 0-5 ( )
- 6-10 ( )
- 11-15 ( )
- 16 and above ( )

Section B: Study variable based questions

i. Patrolling

To what extent has patrolling contributed to custom performance at Shimoni**.** In a scale of 1-5, indicate the extent to which you agree with the statement in the table below; 1. Strongly agree 2. Agree 3. Somehow agree 4. Disagree 5. Strongly disagree.

Statement	**1**	**2**	**3**	**4**	**5**
Custom has enhanced water way surveillance					
Custom has enhanced road and land surveillance					
Patrolling has led to interception of counterfeits and drugs					
Patrolling has enabled tracking and goods movement					

ii. Multi-agency co-operation

In a scale of 1-5, indicate the extent to which you agree with the statement in the table below:

1. strongly agree 2. Agree 3. Somehow agree 4. Disagree 5. Strongly disagree

Statement	**1**	**2**	**3**	**4**	**5**
The Kenya police and port security are involved in border control operations					
Custom unit has set a collaborative inter-agency plan that integrate other agency operations					
There is free sharing of intelligence between involved agencies					
Agencies have successful boosted custom enforcement unit					

iii. Risk management systems

In a scale of 1-5, indicate the extent to which you agree with the statement in the table below:

1. strongly agree 2. Agree 3. Somehow agree 4. Disagree 5. Strongly disagree

Statement	**1**	**2**	**3**	**4**	**5**
Risk management system in place is useful in risk identification					
Risk management system in place is useful in risk assessment					
Risk management system in place is useful in risk prevention					
Risk management system in place is useful in risk mitigation					
Risk levels at the unit is at a remarkable low level					

iv. Custom Perfomance

In a scale of 1-5, indicate the extent to which you agree with the statement in the table below:

1. Strongly agree 2. Agree 3. Somehow agree 4. Disagree 5. Strongly disagree

Statement	**1**	**2**	**3**	**4**	**5**
Increase in revenue collection					
Revenue targets are met always					
Corporate growth has been witnessed					
Tax compliance rate has increased					
Employee output has also increased					

Appendix iii: Budget

Item	**Amount**
Proposal Development	5,000.00
Stationery	7,500.00
Typing and Printing Proposal	5,000.00
Photocopy(Proposal Questions)	1,500.00
Binding of Project(3 copies @500)	1,500.00
Transport	15,000.00
Miscellaneous Expenses	10,000.00
TOTAL	**45,500.00**

Appendix iv: Work Plan

Activity	**Jan – March 2020**	**April – Sep:2020**	**Oct- Dec 2020**
Proposal Development			
Approval			
Data collection			