

**EFFECTIVENESS OF SCANNER UNIT ON REVENUE GENERATION AT  
THE PORT OF MOMBASA**

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**2018**

**DECLARATION**

This project is my original work and has not been presented for a post graduate diploma in any other academic or non-institution

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**HDB335-C016-2416/2016**

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Signature

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Date

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

**Mrs Zipporah Andia Hamisi**

**Supervisor**

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Signature

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Date

## **DEDICATION**

This work is dedicated to almighty God, to my family and my parents who have supported me to realize my dreams

## **ACKNOWLEDGEMENTS**

I highly appreciate the contribution of my supervisor Madam. Zipporah Andia who guided me in coming up with this research project. I would also like to acknowledge my husband, Mr. Benjamin Mwandawiro for his constant support given me to ensure success of this project. Special gratitude to the Lord for enabling me realize my dream of furthering my education.

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## **ACRONYMS AND ABBREVIATIONS**

<b>CFS</b>	Container Freight Station
<b>CNT</b>	Container Terminal
<b>DHS</b>	Department of Homeland Security
<b>DU</b>	Depleted Uranium
<b>EAC</b>	East African Community
<b>EACCMA</b>	East African Community Customs Management Act
<b>EATTA</b>	East African Tea Trade Association
<b>GAO</b>	US Government Accountability Office
<b>GDP</b>	Gross Development Product
<b>HEU</b>	Highly Enriched Uranium
<b>KES</b>	Kenyan Shilling
<b>KRA</b>	Kenya Revenue Authority
<b>NII</b>	Non-Intrusive Inspection
<b>SU</b>	Scanner Unit
<b>WCO</b>	World Customs Organization
<b>WTO</b>	World Trade Organization

## **ABSTRACT**

According to the World Bank's report, Kenya is ranked 122nd out of 155 countries in trade logistics efficiency. The index measures countries' trade logistics efficiency. Our country Kenya performs better than the averages of Sub-Saharan African countries in areas of timeliness and international shipments. Trade facilitation plays a critical role in international trade because it is about expediting the clearance, release and movement of goods including those in transit. There is need for technical assistance and capacity building in trade facilitation is crucial. The Port of Mombasa at Kilindini facilitate trade for over four neighboring countries of Kenya. Physical inspection of containers is not feasible and that is why technologies such as cargo scanning are welcome. Thus the main objective of this study was to evaluate the effectiveness of the Scanner Unit on revenue generation at the Port of Mombasa and specific objectives to determine how operations of the Scanning Unit at the port leads to a significant collection of extra revenue, the effects of scan unit system integration on revenue generation at the port of Mombasa, to establish the relationship between employee professionalism of the scan unit and revenue generation at the port of Mombasa and to ascertain the link between port infrastructure on scan unit and revenue generation at the port of Mombasa. Quantitative methods were employed in collecting and analyzing the data. Both Primary and secondary sources of data would be used in collection of data. To ensure that the research questionnaire was reliable, a pilot study was undertaken. Content validity of the questionnaire was ensured by consulting the university supervisor. Cronbach's alpha coefficient was used to test for reliability of the research questionnaire. Self-administered semi-structured questionnaires were used for collection of data. Descriptive statistics was employed in data analysis. Descriptive statistical tools included frequencies, percentages, means and standard deviations. Tables were used for presentation of study findings.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

Public revenue collection is an integral component of fiscal policy and administration. It is commonly referred as the fuel of every government. As most of the developing countries dwindle in their domestic revenue reserves and growing donor fatigue, the need to strengthen national revenue collection systems has become particularly imperative (Visser & Erasmus, 2005). Yet, there is lack of efficient means of collecting tax revenue in developing countries. However, besides the pressing need to increase revenue inflows, revenue collection should not be at the sacrifice of economic and citizen welfare. Tax revenue collection should comply with best practices of equity, ability to pay, economic efficiency, convenience and certainty (Musgrave & Musgrave, 1984).

In most countries, the best practices known are to have the public revenues deposited into the Exchequer Account of the Consolidated Revenue Fund that serves as the national reserve. Majority of developing countries get their tax revenue from individual and corporate incomes, sales, Value Added Tax (VAT), customs duty, estate and capital gains form the main sources of government revenue with VAT, customs, and corporate taxes emerging as high performing revenue sources (Keen & Mansour, 2010). The tax reform initiatives of the 1990s that were promoted by the IMF and World Bank are sought to revamp and strengthen revenue administration, enhance voluntary compliance, expand the tax base and address corruption-induced revenue leakage. These reforms include the creation of Revenue Authorities (RAs) in a bid to protect revenue collection systems from political interference (Fjeldstad & Moore, 2008).

The adoption of Value Added Tax systems to escape tax evasion-ridden associated with sales taxes, shifting from income tax returns to final deduction systems; where PAYE is deducted by the employer in a bid to reduce compliance costs by simplifying taxpayer registration, filing and payment, audit, collection enforcement and Appeals (IMF, 2011).

The segmentation of the taxpayer population by treating them as distinct revenue possibilities comprising large, medium, small, and micro taxpayers. The term large taxpayers cover large firms, financial institutions, and telecom operators. This even saw specialist units being established in countries such as Ghana and Uganda to deal with high level individual and institutional payers (Ibid). Since the 1990s, the responsibility of revenue collection in many countries have been hived off to semi-autonomous revenue authorities which exercise direct control over the import,export, manufacture, movement, storage or use of certain goods (Fjeldstad & Moore, 2008).

In the UK, the HM Revenue and Customs (HMRC) was formed in 2005 following the merger of Inland Revenue and HM Customs and Excise Departments, and is responsible for administering direct and indirect taxes. In the USA, there is the Internal Revenue Service (IRS) established through the Internal Revenue Service Restructuring and Reform Act of 1998. In South Africa, the South African Revenue Service (SARS) was established in 2002 under Section 195 of the SA Constitution while in Malawi, the Malawi Revenue Authority (MRA) was established in 1998 as an agency responsible for the assessment, collection and accounting for tax revenues. Its establishment sought to improve the functions previously carried out by the Department of Customs and Exercise and Income Tax in the Ministry of Finance.

The Kenya Revenue Authority was established in 1995 by an Act of Parliament, Chapter 469 of the Laws of Kenya (Kenya, 1995). KRA is the principal government revenue collection agency which accounts for over 95% of Government Ordinary Revenues (KRA, 2017). The Authority administers the revenue aspects of 18 Acts of Parliament as well as collecting agency revenue for several government agencies (KRA, 2017). Revenue collection enhancement and enforcement strategies sit at the core of the Kenya Revenue Authority's functions. This is emphasized in the Authority's 6th Corporate Plan. The Corporate plan's key objective is to "Enhance revenue mobilization by broadening the taxpayer base, combating tax evasion and using smart intelligence and risk-based compliance strategies (KRA, 2017).

The KRA sixth corporate plan has four main thrusts where the second thrust is to Leverage technology to enhance service delivery and promote compliance. Based on this thrust, one of the key strategic objectives in the Plan is to enable business by leveraging technology to achieve full electronic service leading to enhanced operational efficiency and high customer satisfaction (KRA, 2017). The scanner Unit in the Customs and Border control department is a unit that encompasses technology in trade and revenue collection using a system of homogeneity and heterogeneity to perform risk management process (KRA, 2017). Many cases of contrabands, false declarations and concealment have continuously been reported while the department still runs and this begs the question of whether the unit has made a significant impact on trade facilitation and revenue collection and if not, whether there are other factors that have continued to inhibit the unit from achieving its targets other than the performance of the scanners (KRA, 2017)

In Customs, it is a device that uses image analysis techniques to verify whether there are any inconsistencies in the goods being imported or exported into or out of the country i.e., to check for offences that may have been made as per section XVII of the East African Community (EAC) Customs Management Act 2004. Scanners have several uses of Scanners including detection of mis-declared containerized cargo, concealments and restricted and prohibited goods. Failure to declare the goods being imported or exported correctly for example entering a 1x40 foot container as 1x20 foot or declaring plastic soda bottles when the goods being imported is actually Coca-Cola soda (Agumba, 2012).

Importers through their agents have from time to time proved to be conniving such that they conceal high valued items within other low value goods in an attempt to evade taxes (Agumba, 2012). This is the part where scanners come in handy; physical examination of goods can sometimes be inhibitive if we want to detect the concealed items. One of the major roles of the Kenya Revenue Authority is protection of society and environment. When pornographic materials are allowed into the country it is still the

society that bleeds and that is why technology such as scanners is suitable for detecting and stopping such contrabands from being allowed into the country (Agumba, 2012).

Physical examination of goods or containerized cargo often takes a long time to move goods from one port to another, hence this might slow down movement of goods on transit through Kenya to Uganda or Burundi or Tanzania. Scanners provide a better and faster way of examining the goods therefore facilitating trade between Kenya and its neighbors (Agumba, 2012). Kenya is a key player in trade within the East African countries. Uganda clears almost all of its imports from the port of Mombasa. It is therefore very important to ensure trade between Kenya and its partner states is fast, efficient and legal. Below is a picture illustrating trade between Kenya and its major partners (Agumba, 2012). At the Port of Mombasa, there are three units that help to drive revenue collection:-The scanner Unit, The customs Warehouse and the Manifest Section. These units may not be the active revenue collection points but when they run efficiently and effectively, the other units i.e. the Container Terminal and the CFSs are able to run efficiently too. The scanner unit therefore needs to be studied and evaluated in order to enhance revenue collection and curb offences that are highly committed by importers and exporters in Kenya (Agumba, 2012).

## **1.2 Statement of the Problem**

The process of physical verification of goods has been deemed as good practice due to the increasing number of containers being imported. As the international sea traffic and technology in maritime transport industry is dynamically changing, there is enormous pressure to upgrade and provide cutting- edge technology. The industry is also being forced to improve terminals efficiency to provide competitive advantages that will attract more traffic. Most of these challenges include providing adequate and performing equipment, reducing berth times and delays, enabling large storage capacity and ensuring multi-modal connections to hinterland (UNCTAD, 2011); as well as improving infrastructure. Moreover, there are cases of false declarations and concealments that may go unnoticed. For example, on October 26th 2016, it was reported that 2\*20 ft. containers purporting to be carrying 880 bags of tea destined for South Korea after going

through the scanning process at the port of Mombasa were seen to actually contain used batteries that are prohibited in the EAC Customs Management Act 2004. Studies conducted by various scholars done globally on ports of the world on the factors affecting the scanner unit on revenue generation. However, little has been done on the effects of scan unit system integration on revenue generation at the port, the relationship between employee competencies in scanner unit and revenue generation and the link between port infrastructure within the scanner unit and revenue generation at the port. This study evaluates whether the scanning Unit at the Port of Mombasa has the capacity to maximize revenue generation by reducing non-compliance done through mis-declarations and concealments.

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

This study will be guided by the following objectives;

#### **1.3.1 General Objective**

The general objective of the study was to evaluate the effectiveness of the scanner unit on revenue generation at the Port of Mombasa.

#### **1.3.2 Specific Objectives**

- i. To determine the efficiency of scan unit system integration on revenue generation at the port of Mombasa.
- ii. To establish the relationship between employee competencies on scanner unit and revenue generation at the port of Mombasa.
- iii. To ascertain the link between port infrastructure within scanner unit and revenue generation at the port of Mombasa.

### **1.4 Research Questions**

- i. What is the efficiency of scan unit system integration on revenue generation at the port of Mombasa?
- ii. What is the relationship between employee competencies on scanner unit and revenue generation at the port of Mombasa?

- iii. What is the link between port infrastructure within scanner unit and revenue generation at the port of Mombasa?

### **1.5 Significance of the Study**

This study will be significant to the Kenya Revenue Authority as it will point out measures, which can be implemented based on research findings, to lead to a significant increase in revenue collections and better protection of the society and the local industries. This will in turn lead to increase in the country's GDP when the budget deficit will be reduced and/or controlled. The study findings also provide academicians with information regarding the effectiveness of the scanner unit on revenue generation at the Port of Mombasa. It will also act as a base for future research

### **1.6 Scope of the Study**

The key focus of the study was on the port of Mombasa as at 2017. The study gathered information from the port of Mombasa located within the central business district of Mombasa and stretches all the way to Changanwe.

### **1.7 Limitations of the Study**

The major limitation was that respondents were at times unwilling to provide the data required by the study. However, the researcher assured the respondents that the data was only collected for academic purposes and would be treated confidentially.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter gives an overview of both theoretical and empirical literature with regards to the topic under study; Effectiveness of the Scanner Unit at the Port of Mombasa. The literature review enables the researcher to give an introduction and discussion on the variables under study as well as trying to find answers to the research questions. The chapter has several literatures on the topic of cargo scanning putting into consideration the different variables under study including performance of the scanners and other factors that could inhibit the performance of the scanner unit at the port of Mombasa.

#### **2.2 Theoretical Review**

This section aimed to highlight the theoretical overview of the topics the research study intends to address in terms of Scanner performance and related factors inhibiting its performance with a view of looking at the ideas and theories related to these topics in relation to cargo scanning.

##### **2.2.1 Resource Based Theory**

Resource-based theory contends that the possession of strategic resources provides an organization with a golden opportunity to develop competitive advantages over its rivals. Due to the confusion brought by the resource-based theory since the term resource is used in many different ways within everyday common language, it is important to distinguish strategic resources from other resources (Barney, 1991). In the organization context, common resources such as cash and vehicles are not considered to be strategic resources. Resources such as cash and vehicles are valuable, of course, but an organization's competitors can readily acquire them. Thus an organization cannot hope to create an enduring competitive advantage around common resources (Teece, Pisano & Shuen, 1997).

Various theories were taken into mind with a view of understanding how employee competence relates to meeting revenue targets. A strategic resource is an asset that is valuable, rare, difficult to imitate, and non-substitutable (Barney, 1991). Most organizations struggle to be profitable, but some makes money virtually every year. One key reason is a legendary organizational culture that inspires employees to do their very best. This culture is also rare in that strikes, layoffs, and poor morale are common within the airline industry (Barney, 1991; Peteraf & Barney, 2003).

The tangibility of a firm's resources is an important consideration within resource-based theory. Tangible resources are resources that can be readily seen, touched, and quantified. Physical assets such as a firm's property, plant, and equipment, as well as cash, are considered to be tangible resources (Barney, 1991). In contrast, intangible resources are quite difficult to see, to touch, or to quantify. Intangible resources include, for example, the knowledge and skills of employees, a firm's reputation, and a firm's culture (Dierickx & Cool, 1989). In comparing the two types of resources, intangible resources are more likely to meet the criteria for strategic resources (i.e., valuable, rare, difficult to imitate, and non-substitutable) than are tangible resources. Executives who wish to achieve long-term competitive advantages should therefore place a premium on trying to nurture and develop their firms' intangible resources (Teece, Pisano & Shuen, 1997).

Capabilities are another key concept within resource-based theory. In order to distinguish resources and capabilities, resources can refer to what an organization owns while capabilities refer to what the organization can do (Foss, 1998). Capabilities tend to arise over time as a firm takes actions that build on its strategic resources. , for example, has developed the capability of providing excellent scanning service by employing competent employees at the scanner unit (Foss, 1998). Capabilities are important in part because they are how organizations capture the potential value that resources offer. Customers do not simply send money to an organization because it owns strategic resources. Instead, capabilities are needed to bundle, to manage, and otherwise to exploit

resources in a manner that provides value added to customers and creates advantages over competitors (Peteraf & Barney, 2003).

The study thus is justified to use this theory to emphasize the need of Kenya Revenue Authority to deliver its mandate in employing competent staff so as to achieve high performance that translates into meeting targets in each department for example in SU. The Authority can contract the best of the scanners in the world with high resolution and multi analysis energy but if the staff at the SU are not competent, then the SU would not achieve its targets of driving revenue and detection of contrabands (Priem & Butler, 2001). This theory helped in answering the second objective where the study set out to identify other inhibiting factors preventing the SU from achieving its targets other than the technical capacities of the machines.

### **2.2.2 Frictional Theory of Profits**

Every person who ventures into business expects returns at the end of the day from the business. This return is usually the profits and may determine the future success or failure of that business. It is the reward to the owners of capital for saving and investing their funds rather than consuming all their income or hoard them (Duta, 2018). Under normal circumstance, a business man being a rational person will prefer big profits with low risks and thus his assumption will always be that the market will not change and thus he can predict with accuracy his future returns, however this is not always the case. Frictional theory thus explains that shocks and disturbances usually occur in the economy as a result of anticipated changes in the market. These changes may be may result due to inflation rates, changes in interest rates and changes in foreign exchange rates (Duta, 2018).

Under static economy, where there is no unanticipated change in demand or costs conditions occur, in long run equilibrium the firms would be earning only normal rate of profits on their capital and entrepreneurial talent (Duta, 2018). In 1990s for example, there was a sharp rise in petroleum prices as a result of US-Iraq war and many petroleum firms enjoyed huge profits, similarly, as a result of slowdown in world trade in the years

1991-2001, many Indian firms doing exports business suffered losses due to the decrease in the demand for their products in the USA and other countries (Duta, 2018).

### **2.2.3 Agency Theory**

The principal–agent problem or agency dilemma is one of the theoretical frameworks that guided this study. The agency dilemma occurs when one person or entity, agent is able to make decisions that impact, or on behalf of, another person or entity: the principal (Lan & Heracleous, 2010). Agency theory is highly used in revenue literature to explain the reasons why the management would invest in Scanner units so as to increase the revenue performance of the port (Jensen, 1994). This theory therefore helps in this study as it explains the roles and responsibilities of management which if properly followed would help to improve the revenue performance of Port of Mombasa. In order to harmonize the interests of the agents and the principal, a comprehensive contract to address the interests of both agents and the principal should be developed (Shapiro, 2005).

### **2.3 Empirical Review**

In September 2016, a study was conducted at the Port Elizabeth harbor for the purpose of simulation and testing of the customs processes of management of the containerized goods. This process changed the way customs procedures were carried out. There were various benefits that were obtained as a result of the introduction of the scanners at Port Elizabeth. It was noted that project implementation for the same was dependent on the number of employees (SARS Report, 2008). Another good example of an effective system for scanning was undertaken at Durban Container Terminal. The scanning process was based on pre-selection and targeting of the high risk consignment based on the risk assessment principle. The customs officers used information from the declarations and manifest in targeting goods that pose the highest risk.

Policy Research Corporation undertook an investigation on European ports. It was concluded that the US based containers are scanned based on the risk profiling. Extra installation of the scanning machines and equipment was difficult as a result of space constraints. There is inflation in transfer costs due to the transferring of containers to the

scanning area and back to the terminal. Moreover, there are problems of congestion with regards to roads accessibility thus weakening the application of the 100% scanning policy (Policy Research Corporation, 2009).

In April 2008, a preliminary impact assessment on 100 percent scanning was conducted involving the US Customs Border Protection (CBP). It was found out that the implementation of 100% scanning of exports has less impact on improvement of global security and that there would be disruption of transport and trade in the European Union and the world at large. It was therefore recommended that investment in the enhancement of the risk management systems was acceptable (Policy Commission, 2007). This was particularly proposed for high risky cargo and strengthening of the international cooperation to enhance the process. Several studies have been conducted to support the assessment conducted in 2008. A study on conducted to gauge the impact of the security measures on Trade Relations and EU economy focused on investment and operational costs demonstrated that numerous ports were not ready for the implementation of the 100% container scanning (An Economic Analysis, 2012). “100% cargo scanning does not equal to 100% security”, Deputy Commissioner Ahern said on April 2, 2008.

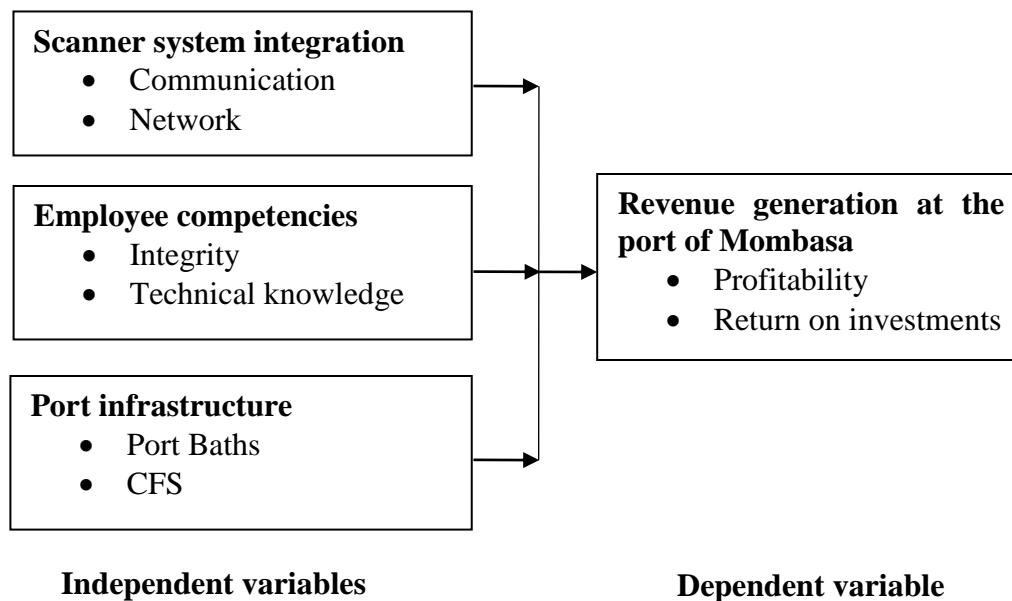
The 9/11 Commission Act 2007 in the US that required 100% scanning of cargo was met with much resistance according to various studies done. According to a report released by the US Customs and Border Protection (US CBP), this was an attainable goal because the Systems were not available for purchase, false alarm rates were too high, there were Port infrastructure limitations, the systems could be integrated with existing systems, it was going to have a significant impact on trade capacity and cargo flow and there were inadequate automated risk notifications (Office of the International Affairs and Trade Relations, 2012).

Countries have been unable to carry out 100% scanning of outbound and inbound cargo and have resolved to risk profiling or targeting in order to reduce unnecessary delays and port congestion which escalate to high port storage fees and WCO SAFE framework not being implemented that requires countries to facilitate trade by applying advanced

electronic cargo information. 100% scanning of cargo in another study could be possible if the false alarm rates were not too high, Port Infrastructure limitations are removed (storage space), If the scanning systems can be fully integrated with existing systems, if it would not have a significant impact on cargo flow and trade capacity and if the automated risk notification was adequate (Office of the International Affairs and Trade Relations, 2012).

## 2.4 Conceptual Framework

A conceptual framework is a detailed description of the phenomenon being studied and is usually accompanied by a visual depiction of the major variables (Mugenda, 2008). It is the diagrammatical illustration showing the relationship between the independent variables and dependent variable. The purpose of this conceptual framework is to find out a preliminary idea on the relationship between the effectiveness of the SU and revenue returns. The conceptual framework is shown in Figure 2.1.



**Figure 2.1: Conceptual Framework**

#### **2.4.1 Scan System Integration with other Systems**

Use of scanners will allow smooth interconnection with other systems and data is captured digitally and transferred to other departments. This enables the Port to work efficiently and effectively thus reducing costs hence increasing the returns. This integration can be through other agencies like Kenya Revenue Authority (Wood and Joyce, 2008)

#### **2.4.2 Employee Competencies on the Scanner Unit**

Organizational objectives can be achieved through having the best motivated, and efficient employees at work. However, a number of managers fail to get motivated employees due to various reasons. They tend to find it a great challenge, (Dieleman and Toonen, 2010). Motivation is essential to employees. Skilled and well knowledgeable employees can work exceptionally well if motivated. Once the employee does the same task repetitively using physical means, his ability to work long and accurately is usually hampered. With the help of scanners as a technological tool towards efficiency at work, employees can be motivated to work over many units for a short period as opposed to when he is performing the same task manually. When motivated, employees are more productive and efficient thus having a good output that translates to higher returns to the company.

#### **2.4.3 Port Infrastructure within the Scanner Unit**

Scanning process in Mombasa takes place at the port or container Freight stations. During the scanning of the containers, a truck is loaded with the container to be scanned and then passed through the scanning machines at the port or container freight stations. When the scanning process indicates some irregularities, the container is subjected to verification process. During verification process, the specified containers are placed down and stripped open. In cases where verification is to be conducted at the Freight stations, the containers are taken to the specified container freight stations for verification. After verification, an inspection report is noted in the Simba System by the customs officer. The inspection report must tally with what was declared. In cases of abnormalities or false declaration, the customs officers subject containers to 100%

verification. Any discrepancies noted after 100% verification in qualities and quantities results to rising of an offence by the customs officers as per ECCMA, 2004.

## **2.5 Research Gaps**

Various studies need to be carried out to identify the effects of scanning unit on port operations. Moreover, current studies are limited in the sense that they have not compared earnings before and after some products were exempted from scanning vis-a-vis the losses the country incurs by exporting contrabands/prohibited items not just economically but socially. These studies also do not bring out the exact relationship between related factors in the scanning process and Revenue returns and if when not dealt with appropriately, the significant loss of revenue it can register.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter outlines the research methodology used. Research methodology implies the rationale and assumptions that dictate the application of a set of methods in research. Methodology entails steps followed to collect, analyses and interpret the data as this study will apply during its execution and completion (Mugenda & Mugenda, 2013). This chapter therefore describes the methods and procedures that were used during the study, most significant in achieving the set research objectives and goals as per the requirement of the study. In nutshell it outlines the research design, target population, sample design and size, sources of data collection and assumptions of the study.

#### **3.2 Research Design**

Research design is the master plan for collection and analysis of data which aids in answering the research questions. This study adopted a descriptive research design. A descriptive study is undertaken in order to ascertain and be able to describe the characteristics of the variables of interest in a situation (Kumar, 2011; Kumar, 2014). The study adopted a descriptive survey research design because it is simpler and data could be easily availed. The study adopted the use of questionnaires, as methods of data collection.

#### **3.3 Target Population**

Population can be defined as set of individual cases with common characteristics, (Mugenda & Mugenda, 2008). The study was based on a target population of about 115 who are employees of the Kenya Revenue Authority at KPA in different sections such as container terminal, shed 6/7, warehouse, enforcement and operations which comprises other units like the scanner unit which has 20 employees as a unit.

**Table 3.1: Target Population**

<b>Category</b>	<b>Target population</b>	<b>Percentage</b>
Container Terminal	19	16.5%
Shed 6/7	21	18.3%
Enforcement	25	21.7%
Warehouse	20	17.4%
Operations	30	26.1%
<b>Totals</b>	<b>115</b>	<b>100%</b>

**Source: KPA, 2015**

### **3.4 Sample Size and Sampling Technique**

According A sample is defined as a subset of the study population which is selected for the purpose of analysis. A representative sample is one that accurately reflects the population being sampled (Bryman & Bell, 2003). To determine the sample size, the researcher used Slovin’s formula. According to Slovin (1960) as cited in Ellen (n.d.), this formula is used when behaviour of population is not known at all. The formula is used to determine the sample size given the population size, a 5% of margin of error and a confidence level of 95%. The Slovin’s formula is shown in Equation 3.1.

$$n = \frac{N}{1+N(e^2)} \dots \dots \dots \text{Equation 3.1}$$

Where; n = sample size, N= total population, e= error tolerance. Accordingly, the sample size was 89 respondents as shown in Equation 3.2.

$$n = \frac{115}{1+115(0.05^2)} = 89.3204 = 90 \dots \dots \dots \text{Equation 3.2}$$

Therefore, the study sample consisted of 90 respondents who were selected through simple random sampling. According to Ogula (2010), simple random sampling enables selection of subjects in the population such that there is an equal chance of selection of all subjects.

### **3.5 Data Collection Instruments**

Data on employee performance, system integration and port Infrastructure were collected using self-administered semi-structured questionnaires. Questionnaire entails a research instrument containing a series of questions and other prompts for the purposes of gathering information from respondents (Dawson, 2009). They are an inexpensive way of gathering data from a potentially large number of respondents to allow statistical analysis of the results. The questionnaires was simple and short having questions that answered our research questions (Saunders, Lewis & Thornhill, 2009).

### **3.6 Data Collection Procedures**

After conducting a pilot study, the researcher sought the permission of the department of customs studies in the Kenya school of revenue administration at Kenya Revenue Authority to collect data for the actual research. The permission of the staff of the various clearing firms in Mombasa was also sought before involving them in data collection. Respondents were required to fill the questionnaires on their own and return them once through.

### **3.7 Pilot Study**

According to Mugenda (2011), prior to the implementation of an activity in a community it is common to collect baseline information using a pre-test. The pilot study will indicate the shortcomings of a questionnaire (Kothari, 2004). This therefore enables the researcher to make corrections on the tool in order to collect the best data for research. A pilot study was conducted using 9 questionnaires administered to respondents who were randomly selected.

#### **3.7.1 Validity**

Validity refers to the extent to which a research instrument measures what was intended to measure. It is the accuracy, truthfulness and meaningfulness of inferences based on the data obtained from a research instrument or a scale for each variable in the study (Mugenda, 2008; Khan, 2014; Ihantola & Kihn, 2011). Content validity of research questionnaire was ensured by consulting the supervisor.

### 3.7.2 Reliability

Reliability is the consistency with which a research instrument measures the construct or content area it is intended to measure. It is reported as a coefficient that can range from 0.00 (low) to +1.00 (high). A coefficient above or equal to 0.70 is considered sufficient for most cases (Sreevidya & Sunitha, 2011). Therefore, reliability of the questionnaire was tested using Cronbach's alpha coefficient where a threshold value of  $\geq 0.7$  was used.

### 3.8 Data Analysis

The study employed both descriptive and inferential analysis. Frequencies and percentages constituted the descriptive statistics while multiple regression analysis comprised the inferential statistics used in the study. The results of statistical analysis were presented in tables. The multiple regression model that was adopted is depicted in Equation 3.3.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \dots \dots \dots \text{Equation 3.3}$$

Where; **Y** represents revenue generation at the port of Mombasa

**$\beta_0$**  represents the y-intercept

**$\beta_1$ ,  $\beta_2$  and  $\beta_3$**  represent coefficients of scan unit system integration, employee competencies on scanner unit and port infrastructure within scanner unit respectively

**$X_1$ ,  $X_2$  and  $X_3$**  represent the independent variables

**$\epsilon$**  represent error term

## CHAPTER FOUR

### RESEARCH FINDINGS AND ANALYSIS

#### 4.1 Introduction

This chapter provides information on the data collection procedure adopted, analysis of the data and findings. The responses from the respondents are described, analyses and inferences made to established relationships.

#### 4.2 Response Rate

The researcher issued a total of 90 questionnaires in line with the sample out of the total population. From the study, 59 out of the 90 sampled respondents filled in and returned the questionnaires making a response rate of 65.56%. This reasonable response rate was made a reality by way of researcher making visits to hand in and later collect the questionnaires. Based on the research findings, it was evident that respondents were comprised of different gender groups, professional qualifications not forgetting their diversity in their work experience. The results of questionnaire distribution are shown in Table 4.1.

**Table 4.1: Response Rate**

Category	Sample	Response	Percentage
Container Terminal	10	10	17%
Shed 6/7	11	11	19%
Enforcement	13	13	22%
Warehouse	10	10	17%
Operations	15	15	25%
<b>Total</b>	<b>59</b>	<b>59</b>	<b>100%</b>

#### 4.3 Reliability Test Results

The Cronbach's alpha coefficient was used to assess the reliability of the research questionnaire. The results of analysis are shown in Table 4.2.

**Table 4.2: Reliability of the Research Questionnaire**

<b>Constructs</b>	<b>Cronbach's Alpha</b>	<b>Test Items</b>
Integration	0.765	5
Employee competencies on scanner unit	0.765	5
Port infrastructure within the scanner unit	0.765	5

The findings indicate that all the independent variables had Cronbach's alpha coefficients greater than 0.7. Integration of scanner unit had a Cronbach's alpha coefficient of 0.765 Employee competencies on scanner unit had a Cronbach's alpha coefficient of 0.765 while Port infrastructure within the scanner unit had a Cronbach's alpha coefficient of 0.765. This implies that the research questionnaire was reliable.

#### **4.4 Background Information**

The study sought background information from the respondents. This included gender, age, the roles and educational levels of respondents.

##### **4.4.1 Distribution of Respondents by Gender**

This study also examined how the respondents were distributed according to their gender. The results of the analysis are presented in Table 4.3.

**Table 4.3: Distribution of Respondents by Gender**

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Female	24	40.9%
Male	35	59.4%
<b>Total</b>	<b>59</b>	<b>100%</b>

The findings indicate that majority of the respondents were male which is represented by 59.4 % of the total respondents while only 40.6% of the respondents were female. This shows that the input was obtained from both genders and hence there was no biasness when it came to the collection of data for analysis. The low percentage of female respondents could be attributed to the fact that there are more male staff members at the port of Mombasa than female staff members.

#### 4.4.2 Distribution of Respondents by Age

The study also examined the distribution of respondents based on their age categories. Results of analysis are shown in Table 4.4.

**Table 4.4: Distribution of Respondents by Age**

<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
20-25	10	16.9%
26-35	14	25.4%
36-45	15	23.8%
Above 45	20	33.9%
<b>Total</b>	<b>59</b>	<b>100%</b>

The researcher found out that majority of the respondent were above 45 years of age at 33.9% followed by those aged between 36-45 at 25.4% closely followed by those aged between 26-35 at 23.8% and finally those aged 20-25 at 16.9% thus the researcher concluded that more decision maker were adults.

#### 4.4.3 Distribution of Respondents by Nature of Employment

The study also examined distribution of respondents according to the organizational roles played. The results of this analysis are shown in Table 4.5.

**Table 4.5: Nature of Employment of Respondents**

<b>Position</b>	<b>Frequency</b>	<b>Percent</b>
Permanent	34	57.6%
Temporary	13	22.0%
Contract	7	11.9%
Part time	5	8.5%
<b>Total</b>	<b>59</b>	<b>100%</b>

The study findings indicate that most of the employees at the port were employed permanently at 57.6%, with temporary employees at 22%, employees working on

contract at 11.9% and part time workers at 8.5% thus it was found that most employees were employed permanently.

#### 4.4.4 Distribution of Respondents by Educational Level

The study further sought to ascertain the educational levels of sampled respondents. These results are shown in Table 4.6.

**Table 4.6: Highest Educational Level of Respondents**

<b>Educational Level</b>	<b>Frequency</b>	<b>Percent</b>
Secondary	5	8.5%
College diploma	7	11.9%
Undergraduate	32	54.2%
Post graduate	15	25.4%
<b>Total</b>	<b>59</b>	<b>100%</b>

The study established that most of the employees had a bachelor's degree level of education which represents 54.2% of the employees, closely followed by those with post graduate diploma at 25.4%, college diploma at 11.9%, and finally secondary certificate at 8.5%. It may be inferred that the Kenya Ports Authority is moving towards a position where employees are required to have a degree. This is a very encouraging trend meaning that those with degrees and below are motivated to further their academic skills.

#### 4.5 Descriptive Analysis

The researcher sought the opinions of respondents on effectiveness of scanner unit in revenue generation at the port of Mombasa in Kenya.

##### 4.5.1 Scan Unit System Integration and Revenue Generation

The study examined the integration of the scan unit system in revenue generation. The results are shown in Table 4.7.

**Table 4.7: Distribution of Respondent on Connection of Scanner Unit to other System**

	<b>Frequency</b>	<b>Percent</b>
Strongly agree	18	31
Agree	20	33
Strongly disagree	8	14
Disagree	8	14
Not sure	5	8
<b>Total</b>	<b>59</b>	<b>100%</b>

The findings indicate that 31% of the respondent strongly agreed 33% agreed 14% strongly disagree 14% disagreed while 8% were not sure of any existence strong connection of the scanner unit system. This implies that since most percentage agreed on the connection of scanner unit system that in turn maximizes revenues as a result of operational efficiency that enables the port to receive and clear more containers and hence be able to maximize the container capacity at the port of Mombasa.

The study also further examined the opinion of respondents on integration of systems. The results are depicted in Table 4.8.

**Table 4.8: Respondent Distribution on Integration of Systems**

	<b>Frequency</b>	<b>Percent</b>
Strongly agree	30	50.8
Agree	10	16.9
Strongly disagree	9	15.3
Disagree	6	10.2
Not sure	4	6.8
<b>Total</b>	<b>59</b>	<b>100%</b>

The table above shows the distribution of respondent on the integration of the scanner unit system 50.8% strongly agreed 16.9% agreed 15.3% strongly disagreed 10.2%

disagreed while 6.8% were not sure on the integration of systems. It was clear that there was integration of the scanner unit system on eliminating illegal goods and falsified documentations and as result maximizes revenues by minimizing the income the port of Mombasa loses through corrupt activities and falsification of documents by cartels at the port of Mombasa an activity which used to prosper before the introduction of the scanner unit system.

The study also further analysed the views of respondents on regular audit of scanner unit. The results are depicted in Table 4.9.

**Table 4.9: Respondent Distribution on Regular Audit of Scanner Unit**

	<b>Frequency</b>	<b>Percent</b>
Strongly agree	10	33.9%
Agree	24	40.7%
Strongly disagree	10	16.9%
Disagree	5	8.5%
Not sure	10	33.9%
<b>Total</b>	<b>59</b>	<b>100%</b>

It was found out that majority of the respondents which is represented by 40.7% agreed, 33.9% strongly agreed, 16.9% strongly disagreed and 8.5% disagreed. This implies that when regular audit of scanner unit is done as majority agreed thus it will be able to maximize revenues by minimizing the different type of fraudulent activities and errors of omission or commission which in turn affect the amount of net income generated at the port of Mombasa.

#### **4.5.2 Employee Competencies on Scanner Unit and Revenue Generation**

The study examined the competency of employees at the scanner unit. The results of analysis of employee technical knowledge are shown in Table 4.10.

**Table 4.10: Respondent Distribution on Employee Technical Knowledge**

	<b>Frequency</b>	<b>Percent</b>
Strongly agree	10	33.9%
Agree	24	40.7%
Strongly disagree	10	16.9%
Disagree	5	8.5%
Not sure	10	33.9%
<b>Total</b>	<b>59</b>	<b>100%</b>

The study established that there were various arguments on whether the technical knowledge of employees will affect revenue generation of the Kenya Ports Authority as an organization has 33.9% strongly agreed, 25.4% agreed while 28.8% strongly disagreed and 11.9% were not sure. This shows that revenue generation is impacted by the technical knowledge of employees.

The study also further analysed the views of respondents on good communication. The results are depicted in Table 4.11.

**Table 4.11: Respondent Distribution on Employee Technical Knowledge**

	<b>Frequency</b>	<b>Percent</b>
Strongly agree	10	33.9%
Agree	24	40.7%
Strongly disagree	10	16.9%
Disagree	5	8.5%
Not sure	10	33.9%
<b>Total</b>	<b>59</b>	<b>100%</b>

The study found out that majority of the respondents represented by 33.9% strongly agreed 25.4% agreed 8.5% strongly disagreed 16.9% disagreed and 15.3% were not sure. It was found that majority agreed that good communication will result to an increase in the revenues generated by the Kenya Ports Authority since there will be cooperation within the organization to ensure all good have passed the stipulated process.

The study also analysed the views of respondents on understanding of tax policies and procedures. The results are depicted in Table 4.12.

**Table 4.12: Respondent Distribution on Understanding of Tax Policies and Procedures**

	<b>Frequency</b>	<b>Percent</b>
Strongly agree	59	100%
Agree	0	0.0%
Strongly disagree	0	0.0%
Disagree	0	0.0%
Not sure	0	0.0%
<b>Total</b>	<b>59</b>	<b>100%</b>

It was noted that all the respondents which is represented by 100% agreed that lack of understanding of tax policies and procedures will reduce activity level which in turn reduces the revenue generated by the Kenya Ports Authority while a better understanding would result to increased revenues.

#### **4.5.3 Port Infrastructure and Revenue Generation**

The study examined the views of respondents on good infrastructure. The results are shown in Table 4.13.

**Table 4.13: Respondent Distribution on Good infrastructure**

	<b>Frequency</b>	<b>Percent</b>
Strongly agree	35	59.3%
Agree	24	40.7%
Strongly disagree	0	0.0%
Disagree	0	0.0%
Not sure	0	0.0%
<b>Total</b>	<b>59</b>	<b>100%</b>

It was found out that all the respondents which is represented by 59.3% strongly agreed and 40.7% agreed that good infrastructure of the port increases the revenue generated by

the port as opposed to a poor infrastructure. This could be attributed to the act that a good infrastructure will increase the container handling capacity at the port which in turn results to high number of containers imported and exported.

The study examined the views of respondents on availability of space (berths) at the port. The results are shown in Table 4.14.

**Table 4.14: Respondent Distribution on Availability of Space at the Port**

	<b>Frequency</b>	<b>Percent</b>
Strongly agree	0	0.0%
Agree	0	0.0%
Strongly disagree	19	32.2%
Disagree	40	67.8%
Not sure	0	0.0%
<b>Total</b>	<b>59</b>	<b>100%</b>

The study found out that most respondent 67.8% disagreed and 32.2% disagreed on availability of the space at the port. It was noted that berth is small hence minimal generation of revenue at the port of Mombasa which has resulted to several measures put in place the government of the day to expand to dry port in order to maximize capacity.

The study examined the views of respondents on mobile scanners. The results are shown in Table 4.15.

**Table 4.15: Respondent Distribution on Mobile Scanners**

	<b>Frequency</b>	<b>Percent</b>
Strongly agree	33	55.9%
Agree	26	44.1%
Strongly disagree	0	0.0%
Disagree	0	0.0%
Not sure	0	0.0%
<b>Total</b>	<b>59</b>	<b>100%</b>

The respondent in table above agreed that mobile scanner are more favorable that fixed scanner with (55.9%) strongly agreeing while (44.1%) agreed which means that 100% of the respondents agreed with this statement. This implies that mobile scanners are more likely to generate more revenues at the port of Mombasa as opposed to fixed scanner

The study examined the opinions of respondents on controls in the use of fixed assets. The results are shown in Table 4.16.

**Table 4.16: Respondent Distribution on Controls in the Use of Fixed Assets**

	<b>Frequency</b>	<b>Percent</b>
Strongly agree	10	16.9%
Agree	34	57.6%
Strongly disagree	0	0.0%
Disagree	0	0.0%
Not sure	15	25.4%
<b>Total</b>	<b>59</b>	<b>100%</b>

#### **4.6 Multiple Regression Analysis**

The study analysed the combined effect of scan unit system integration, employee competencies, port infrastructure on revenue generation at the port of Mombasa in Kenya. The results are presented in Table 4.17.

**Table 4.17: Multiple Regression Model Summary**

<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
.848 <sup>a</sup>	.719	.683	.32556

a. Predictors: (Constant), scan unit system integration, employee competencies, port infrastructure

b. Dependent Variable: Revenue generation

The  $R^2$ , also called the coefficient of determination, is the percentage of the variance in the dependent variable explained uniquely or jointly by the independent variables. The

study  $R^2$  is .719 this translates to 71.9%. This means that 71.9% of the changes in revenue generation is explained by the changes in the three independent variables namely, scan unit system integration, employee competencies and port infrastructure. The remaining 28.1% of the changes in the Y is explained by other factors not in the model. The C is the constant, where the regression line intercepts the y axis, representing the amount the dependent y will be when all the independent variables are 0.

The researcher also scrutinized the fit of the multiple regression model for the data collected through the multiple regression analysis of variance (ANOVA). The relevant results of ANOVA are depicted in Table 4.18.

**Table 4.18: Results of ANOVA**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	39.187	3	13.062	24.647	.000 <sup>b</sup>
Residual	11.354	55	.530		
Total	54.541	58			

a. Predictors: (Constant), scan unit system integration, employee competencies, port infrastructure

b. Dependent Variable: Revenue generation

The study used ANOVA to establish the significance of the regression model. Statistical significance was considered significant where the p-value was less or equal to 0.05. The significance of the regression model has a p-value of 0.00 which is less than 0.05. This indicates that the regression model is statistically significant in predicting the effectiveness of scanner unit on revenue generation at the port of Mombasa. The ANOVA results indicated that the model was significant at  $F = 24.647$ , and df of 3 with  $p < .05$ . At 95% confidence level the analysis indicates high reliability of the results obtained thus indicating that the study was statistically determined.

The study also conducted t-test which examines the statistical significance of the regression coefficient of each predictor variable. The relevant results of analysis are presented in Table 4.19.

**Table 4.19: Evaluating Individual Regression Coefficients**

	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	1.044	.250		4.172	.000
scan unit system integration	.048	.060	.078	1.416	.005
employee competencies	.152	.074	.218	3.396	.003
port infrastructure	.031	.066	.021	.323	.001

a. Dependent Variable: Revenue generation

The study used multiple regression analysis to determine the relation between the independent variable and the dependent variable. The regression equation is shown in Equation 4.1.

$$Y=1.044+ 0.048X_1 + 0.152X_2 + 0.031X_3 + \epsilon \dots \dots \dots \text{Equation 4.1}$$

In equation 4.1; Y = revenue generation (dependent variable);  $\beta_0$  = Constant of Regression;  $X_1$ ,  $X_2$  and  $X_3$  represent scan unit system integration, employee competencies on scanner unit and port infrastructure within scanner unit respectively; and  $\epsilon$  represents the error term. The findings indicate that taking all factors constant at zero revenue generation at the port of Mombasa will be at value of  $\beta_0 = 1.044$ . The findings show that taking all independent variables at zero. A unit enhancement of scan unit system integration leads to increase of 0.048 unit in revenue generation at the port of Mombasa. The study also indicates that a unit enhancement of employee competencies leads to increase of 0.152 unit in revenue generation at the port of Mombasa. Moreover a unit enhancement of port infrastructure leads to increase of 0.031

unit increase in revenue generation at the port of Mombasa. Finally the, study indicated that there was a positive and significant relationship between scan unit system integration and revenue generation at the port of Mombasa (0.005) which is less than 0.005, employee competencies and revenue generation at the port of Mombasa (0.003) which is less than 0.005 and a strong positive relationship between port infrastructure and revenue generation at the port of Mombasa

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter includes summary of key findings of the study, conclusions and recommendations based on the main objective of study. Suggestions for further research are also presented.

#### 5.2 Summary

This section outlines a summary of major findings of the study carried out at the port of Mombasa in Kenya. The results relate to the three variables under systems automation and customs performance, automation of customs verification and release and automation of payment system on customs performance

##### 5.2.1 Scan Unit System Integration and Revenue Generation

It was found out that majority of respondents agreed on the connection of scanner unit system that in turn maximizes revenues as a result of operational efficiency that enables the port to receive and clear more containers and hence be able to maximize the container capacity at the port of Mombasa. It was noted that there was integration of the scanner unit system on eliminating illegal goods and falsified documentations and as result maximizes revenues by minimizing the income the port of Mombasa loses through corrupt activities and falsification of documents by cartels at the port of Mombasa an activity which used to prosper before the introduction of the scanner unit system. It was determined that when regular audit of scanner unit is done as majority agreed thus it will be able to maximize revenues by minimizing the different type of fraudulent activities and errors of omission or commission which in turn affect the amount of net income generated at the port of Mombasa. The study established that a unit enhancement of scan unit system integration leads to increase of 0.048 unit in revenue generation at the port of Mombasa ( $\beta_1 = 0.048$ ;  $p < 0.05$ ).

### **5.2.2 Employee Competencies on Scanner Unit and Revenue Generation**

The study found out that revenue generation is impacted by the technical knowledge of employees. It was found that majority of respondents agreed that good communication results to an increase in the revenues generated by the Kenya Ports Authority since there will be cooperation within the organization to ensure all good have passed the stipulated process. It was noted that all the respondents agreed that lack of understanding of tax policies and procedures reduces activity level which in turn reduces the revenue generated by the Kenya Ports Authority while a better understanding would result to increased revenues. The study noted that a unit enhancement of employee competencies leads to increase of 0.152 unit in revenue generation at the port of Mombasa ( $\beta_2 = 0.152$ ;  $p < 0.05$ ).

### **5.2.3 Port Infrastructure and Revenue Generation**

It was found out that all the respondents agreed that good infrastructure of the port increases the revenue generated by the port as opposed to a poor infrastructure. The study found out that most respondent agreed on availability of the space at the port. It was noted that berth is small hence minimal generation of revenue at the port of Mombasa which has resulted to several measures put in place the government of the day to expand to dry port in order to maximize capacity. It was noted that mobile scanners are more likely to generate more revenues at the port of Mombasa as opposed to fixed scanner. The study determined that a unit enhancement of port infrastructure leads to increase of 0.031 unit increase in revenue generation at the port of Mombasa ( $\beta_3 = 0.031$ ;  $p < 0.05$ ).

## **5.3 Conclusions**

There are several conclusions that were made in respect of the study findings and in line with study objectives.

### **5.3.1 Scanner Unit System Integration**

It was concluded that when the scanner unit is connected to other system it makes the internal control system strong; ensuring that there is proper monitoring of revenue generation activities at the port and avoid fraud cases. The researcher also concluded

that enhancing scan unit system integration leads to increase in revenue generation at the port of Mombasa

### **5.3.2 Relationship between Employee Competencies on Scanner and Revenue Generation**

It was concluded that a well-established internal controls system that is handled by people with proper technical knowledge it will make it efficient and effective in generating revenue at the Port. It was also concluded that strong internal control system should be constrained to control and prevent effect of fraud and mismanagement. The study concluded that good communication within the organization efficiently and effectively will lead to higher revenue generation. It was also concluded that enhancing employee competencies leads to increase in revenue generation at the port of Mombasa.

### **5.3.3 Link between Port Infrastructures within Scanner Unit**

It was concluded that berth is small hence minimal generation of revenue at the port of Mombasa which has resulted to several measures put in place the government of the day to expand to dry port in order to maximize capacity. The researcher concluded that there is need ample space (berths) at the port which leads to increased work done hence increased revenue generation. It was also concluded that enhancement of port infrastructure leads to increase in revenue generation at the port of Mombasa.

## **5.4 Recommendations**

The following recommendations are proffered for tackling the deficiencies noted in the findings from the study.

### **5.4.1 Recommendations on the Integration of the Scanner Unit System on Revenue Generation.**

First there should be an effective and comprehensive internal audit of the internal control system carried out by operationally independent, appropriately trained and competent staff. The internal audit function, as part of the monitoring of the system of scanning unit, should report directly to the board of directors or its audit committee, and to senior management.

#### **5.4.2 Recommendation on the Employee Competencies on the Scanner unit on Revenue Generation**

There should be absolute compliance with operational guidelines and regulations. Every employee should have his operational guidelines concerning the scanning unit linked to general Internal Control, risk assessments. Accounting, Information and communication, these policies should be strictly followed irrespective of who is involved. Decision making should be encouraged by management to include the employees. When part of the decisions made towards the achievement of the organization objectives, employees feel motivated and provide good results. There should be also discipline on the part of the management not to override the controls, noting that poor management often results in excessive risk taking through high operating expenses, inadequate administration, and an overly aggressive growth policy to attract clients to ensure more revenue is generated. An effective internal control system requires that the material risks that could adversely affect the achievement of the ports goals are being recognized and continually assessed.

#### **5.4.3 Recommendation on Port Infrastructure within the Scanner Unit on Revenue Generation**

The government should provide ample space to ensure that the space is bigger hence large amount of goods can be scanned which leads to increased revenue generation. While the port should periodically be upgrading their operational systems technologically, they should also upgrade the technological aspect of the Internal Control. This will help to fight all forms of electronic frauds including hacking, skimmers, Phishing, Trojan horse.

#### **5.5 Suggestions for Further Studies**

This study puts forth a number of suggestions for future research. Firstly, a study should be conducted on the effect of system automation on effectiveness of service delivery at the port of Mombasa in Kenya. Secondly, a study should be carried out to determine the challenges facing the system automation at the port of Mombasa in Kenya.

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## APPENDICES

### Appendix I: Introduction Letter



**From:**

**The Principal KESRA**

**Mombasa Campus**

**Date: 10<sup>th</sup> October 2017**

**Student details: Reg no: MSA/PGD/C/16**

**Name: Christine Nthenya**

*To whom it may concern*

**RE: REQUEST FOR INFORMATION CONCERNING ACADEMIC RESERCH WORK**

Kenya school of revenue administration offers a post graduate diploma in Customs and Tax Administration in conjunction with Jomo Kenyatta University of Agriculture & Technology (JKUAT). As part of the requirements for the course, students are expected to carry out a research study in the fields of Tax or Customs.

The purpose of this letter is to request you to allow the student to conduct research at your organization. The information gathered will be used purely for this academic exercise.

Thank you in advance.

Yours Faithfully,

**Winfred Jillani**



**SECTION B: SCAN UNIT SYSTEM INTERGRATION AND REVENUE GENERATION**

Kindly indicate your level of agreement or disagreement with the statements in the table below. The following Likert scale is adopted by the study: 1=Strongly disagree, 2=Disagree, 3=Not sure disagree, 4=Agree and 5=Strongly agree

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. When the scanner unit is well connected with other systems within the port it makes the internal control strong					
2. The integration of systems with the scanner eliminates illegal goods and falsified documentations					
3. Regular audit of scanner unit leads to revenue generation to reduce frauds					
4. The scanner unit ensures the reliability and integrity of financial information on revenue generation					
5. Proper monitoring of the scanner units leads to efficiency in revenue generation					

**SECTION C: EFFECTS OF EMPLOYEE PROFESSIONALISM ON REVENUE GENERATION**

Kindly indicate your level of agreement or disagreement with the statements in the table below. The following Likert scale is adopted by the study: 1=Strongly disagree, 2=Disagree, 3=Not sure disagree, 4=Agree and 5=Strongly agree

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. An employee with technical knowledge affects revenue generation of an organization					
2. Honesty and integrity of employees while working affects revenue generation					
3. Motivation of an employee increases activity level					
4. Good communication within the organization efficiently and effectively leads to higher revenue generation					
5. Lack of understanding of tax policies and procedures among the staff reduces activity level					

**SECTION D: PORT INFRASTRUCTURE AND REVENUE GENERATION**

Kindly indicate your level of agreement or disagreement with the statements in the table below. The following Likert scale is adopted by the study: 1=Strongly disagree, 2=Disagree, 3=Not sure disagree, 4=Agree and 5=Strongly agree

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Good infrastructure within the port enables the scanner to access more containers hence reduce any irregularity					
2. Assets registers are maintained					
3. Ample availability of space (berths) at the port increases the work done hence increase revenue generated					
4. Mobile scanners are more favorable than fixed scanners					
5. Controls as to the use of fixed assets exist					

**THANK YOU FOR YOUR CO-OPERATION**