

**FACTORS AFFECTING CUSTOMS MARINE UNIT PERFORMANCE AT THE  
PORT OF MOMBASA**

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**DECLARATION**

This research 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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**HBD335- C016- 2505/2016**

Signature ..... Date .....

This research has been submitted for examination with my approval as the Supervisor.

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## **DEDICATION**

I wish to dedicate my work in a special way to the very special and most helpful people before and during my research, first my wife, Edina Talam, my children Cynthia, Gladwel, Kibet, Kiprono and my uncle Mr. John Siglai who have molded the person in me today.

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## **LIST OF ACRONYMS/ABBREVIATIONS**

<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>ISO</b>	Intelligence and Strategic Operation
<b>EACCMA</b>	East Africa Community Customs Management Act
<b>OECD</b>	Organization for Economic Co-operation and Development
<b>SARS</b>	South Africa Revenue Service
<b>UN</b>	United Nation
<b>ToR</b>	Terms of Reference
<b>KRA</b>	Kenya Revenue Authority
<b>KPA</b>	Kenya Ports Authority
<b>TEU</b>	Twenty-Foot Equivalent Unit
<b>ICT</b>	Information and Communication Technologies
<b>EAC SCT</b>	East African Single Customs Territory
<b>NSWS</b>	National Single Window System
<b>KWATOS</b>	Kilindini Water Front Terminal Operating System
<b>ERP</b>	Enterprise Resource Planning
<b>KeNHA</b>	Kenya National Highways Authority

## DEFINITION OF TERMS

**Human resource capacity:** Goot and Molen (2000) defines human resource capacity building as a development of knowledge, skills and attitudes in individuals and groups of people relevant in design development, management and maintenance operational infrastructures an process that are locally meaningful

**Marine equipment:** Means all vessels or other material transport equipment (if any) owned by the company that are required to be documented.by the Government Authority (source internet)

**Border security strategy:** The goal of border security in the US border has five main objectives thus to apprehend terrorist, deter illegal entries through improved enforcement, deter apprehend smugglers of human, drugs and other contrabands and the use of smart border technology and reduce crime in border communities improving quality of life (source journal of strategic security 2013).

**Customs marine performance:** Means vessels operations (ability to undertake a range of Activities including vessel interception, search and rescue and marine pollutions) and its workforce skilling thus projects to improve staff resourcing and skill development) (.internet source).

## ABSTRACT

Owing to the strong influence on economic and social issues, the research study was pegged on the thematic dynamic factors affecting customs marine operations performance at the port of Mombasa along the Kenyan coast as the department intends to enforce protection of the porous borders. The study focused on three objectives along with theories that were in line with them such as Human resource theory which examined the human resource factors, the stakeholder's theory which examined the border security strategy and factors including the involvement of the multi governmental agencies to boost on the operations of the Kenyan coast on security issues and to deter illegal activities namely illegal fishing, drug trafficking and human trafficking along the porous coastal region. The resource based view theory examined equipment as the study objectives. The study adopted a descriptive research design and questionnaires were used for the targeted respondents who were the Customs personnel in enforcement, Marine police and KPA officers who are 230 in number. A sample of 146 respondents was extracted by the use of Slovenes formula. Piloting was done to determine reliability and validity by use of 10 questionnaires as well as Cronbach's Alpha coefficient used to check for reliability. Data was analyzed using SPSS Version 25 where results were presented in tabular form and figures. Multiple regression analysis was done to establish how independent variables influence dependent variables. The findings of the regression analysis conducted proved that there was a positive significant effect of human resource on the customs marine operations as indicated by the values  $\beta_1 = 0.341$ ,  $p < 0.01$ . Regression analysis was also conducted on to establish the relationship of the second objective and the results showed a positively significant effect of equipment on customs marine operations as indicated by the values  $\beta_2 = 0.472$ ,  $p < 0.01$ . Finally, Regression analysis was also conducted on the third independent variable and the results proved that there was positively significant effect of border security strategies on the customs marine operations as indicated by the values  $\beta_3 = 0.437$ ,  $p < 0.01$ . The study concludes that the level of education determines the competence level of staff and that incorporating multi agencies approach onboard as well as incorporating four-legged officers more frequently widens its scope and affects the performance of the customs marine operations. The study recommends that the stakeholders should lobby for the government to allocate a common office for agencies involved and one command center. The study also recommends that the stakeholders should be adequately trained since it was established that training of staff in marine unit affects its operations and that government should adopt the latest systems and technological tools as it was established that use of up to date systems and modern technological tools affect marine operations. The new system should configure with the existing systems so as to enable ease of transformation with little integration costs as possible.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of Study**

The trade in the global scene has been carried out for many centuries. The major instruments of accessing the trade routes and market has been pegged on the maritime transport. It is estimated that maritime transportation accounts up to 80% of the world's voluminous trade (UNCTAD, 2014). The rest of the transport takes place in rail, road and air transport. The linkage of the various continents has been through the presence of sea transport being due to the strategic points. The aspect of competition and need to being abreast in maritime transport has coerced various ports to have restructuring so as to meet the ISO qualification standards. The ports in various countries have evolved to have modern and specialized equipment to handle cargo like fork lifts trucks and the gantry cranes (Zhao and Goodchild, 2010).

The history of ports dates back in 480 BC in Athens, Greece at the port of Piraeus. This port was used to facilitate war between the Athens and the Persians. It has over the time been seen that great towns have emerged due to trade having taken place at the strategic ports (Barletta and Bichou, 2007). Alexandria in Maghreb of Africa was well known as point of exchange between North Africa and the Europe region especially the Greece. Osaka, Japan emerged as a great town in south East Asia due to its trading in rice as a major commodity at the sea port, the Dutch traders were the most frequent traders since time immemorial. It is worth noting that some ports have ceased to exist or became dysfunctional due to coastal erosion. Some notable ports are like Ravenspurn in the United Kingdom, Antica in Italy and Lothal in India.

India as a member of OECD, has in the last two decades revamped its trade dimensions. The maritime transport constituted up to 90% of trade and in the voluminous trade and 77% is constituted of the value in trade. India is well covered with a vast coastline of about 7571 KM. this has made India to have 12 major ports spread across its coastline and another additional 174 minor ports. There exists a great difference in way of operation of the ports. It is estimated that the 12 major ports in India actually account for up to 76% of the container traffic (Mukherjee, 2007).

With an enormous population, the presence of major ports has seen India report a relatively good growth in the container traffic of up to 20% in the last decade. Despite the presence of numerous

ports, only one port in India has been named and rated for good operational excellence, the port of Jawaharlal Nehru. In the year 2017, it was ranked 33 out of the best 40 ports according to world Maritime Report (UNCTAD, 2017). Despite Asia accounting for up to a third of the container traffic globally, there has been increase in freight cost from a paltry 15% to over 115% in the last one decade. This is due to insufficient structural development in India as compared to their counterparts like China which has the Leading port in Singapore. There has been great laxity in the ports of India to upgrade to newer standards so as to meet market changes and demand (UN, 2003).

According to Tofa & Paterson,(2018) In South Africa, South African Customs Administration is a key department in South Africa Revenue Service (SARS) that ensures movement of good and persons in and out of its borders is done smoothly, safely and efficiently. Its vision is to be a world-class Customs administration organization in administration conveyance which adds to the steadiness, wellbeing and success of the nation, region and world ([www.sars.gov.za](http://www.sars.gov.za)). In its targets, the administration has consolidated border control supervision, community and industry protection among others (Hall and Jacobs, 2016).

The SARS website also shows that the South African Customs has a stakeholder engagement document that acts as Terms of Reference (ToR) when collaborating with external stakeholders which establishes better partnership thus protection of South Africa's economy and people. In addition, South Africa has a marine unit which is mandated to combat trade malpractice which may be experienced in marine border Muntschick, (2016).

The Kenyan coastline runs from the south of Somalia to the north of Tanzania extending an approximation of 536 kilometers. The coastline covers islands, towns and beaches in Kenya. To the North Kenyan Coast (north of Mombasa) includes; Lamu, Malindi, Watamu, Kilifi while to the South includes; Diani, Galu, Shimoni and Wasini Islands and Mombasa as the only port city. This coastline in the Indian Ocean houses the Kilindini Port in Mombasa which provides for the entry of goods into the Kenyan market and East and Central Africa. Plans are on the way in the development of the Lamu Free Port in the North coast to link the hinterland, therefore, the current major port in the coastline is the Mombasa port, while there are other smaller ports along the coastline which include; Vanga, Shimoni, Funzi, Mtwapa, Kilifi, Malindi, Ngomeni and Kiunga in Lamu.

The coastline in the recent years have been faced by the insecurity particularly in the North Coast having the neighboring international waters faced by piracy which threatens business. Some cases of smuggling along the coastline. The study Analyzing drug-trafficking in East Africa, places the Kenyan coastline as the entry points for the hard drugs in Kenya, these findings have been supported by the increased number of drug addiction and dependence in the regions along the coastline, this also implies that the coastline has not been fully covered in the protection of smuggling of commodities into Kenya (Haysom et al., 2018).

The Port of Mombasa in Kenya is strategically placed to serve various countries in Eastern and Central Africa, with majority of Kenyan imports being handled at the port. Uganda, South Sudan, Southern Ethiopia, Eastern Congo, Northern Tanzania, Rwanda and Burundi are among the countries that use the port of Mombasa (Kenya Ports Authority, 2014). Ports have traditionally evaluated their performance by comparing their actual and optimum throughputs (measured in tonnage or number of containers handled). Ports have generally assessed their presentation by looking at their real and ideal throughputs (estimated in tonnage or number of containers handled). On the off chance that a port's genuine throughput approaches its ideal throughput after some time, the end is that its presentation has improved with time. Then again when the port registers poor performance, for example, high compartment stay time, risk of Vessel defer extra charge most noticeably awful still is the vessels might keep distance from the port. Over a period of time, this renders transport from the port un-focused by true examination (Wang, 2015).

Crane profitability which is determined per crane and can be communicated in gross and net qualities; Port Productivity, there are seven distinctive efficiency estimates which terminal administrators need to process, al-however they may wish to incorporate others for checking their profitability. The center of efficiency is majorly measured based on ship profitability which is the broadest measures. Ship profitability is the broadest proportions of ship by poor gate operations that has brought about an expansion in truck turnaround inside the port territory. Entry and exit is presently taking as much as 6 hours (Kenya Transport Association, 2008). Loading Point in efficiencies; with regards to stacking inside the port, trucks are going through as long as 6 hours to stack for containerized cargo and 2 days for bulk and conventional freight. For example, the vast majority of the stacking at the grain bulk handling facility occurs during the evening when the customs office is shut and transporters need to hold up until the next day to load. Traffic

Congestion inside Port Cities and Cities along the Transport Corridor; both the urban communities of Dar es salaam and Mombasa are vigorously blocked with gigantic volumes of truck traffic entering and leaving the ports (Monios et al., 2018).

The level of infrastructural development in port is usually measured by the container port throughput. The container port throughput is measured in TEU. There have been tremendous strides made in port infrastructure development in the last one decade. The major development has been realized in the countries which have seen an average growth rate of 8% translating to 406.9 million TEUs. It is worthwhile noting that on average scale the Asian continent has taken lead in demand for container port services due to adequate port developments in infrastructure (Bacchiocchi, 2012).

The Kenya Revenue Administration through the department of Customs Service Department formerly the Customs and Border Control has a Marine unit which was launched in the year 2009, to conduct patrols and aide in combating illicit trading along the Kenyan Coastal waters and boarders. The marine unit since introduction has two operational areas, which include the Lake Victoria and Mombasa, the department has six patrol boats; three situated in the Lake Victoria for patrolling in the Kenyan border at the lake, three marine boats located in Kilifi, Shimoni and at the Mombasa port (McCabe,2019).

The customs marine unit was launched in the year 2009 almost a decade now, as a way of boosting the fight against illicit trading along the Kenyan coast, Smuggling and border protection. The border control agency has also seized large consignments of hard drugs along the southern coasts and Malindi whereby it has poised a challenge due to the security of the proper officers while patrolling the coastal borders. The Kenyan coast has been also faced with security challenges along the coastal areas due to terrorism from the Al Shabaab of Somalia, sea pirates among other insecurity challenge

## **1.2 Statement of the problem**

The customs marine unit was launched in the year 2009 almost a decade now, as a way of boosting the fight against illicit trading along the Kenyan coast, Smuggling and border protection. Over the years, the marine unit has been in spotlight and political discussion in the parliament discussing on matters related to the state of the patrol boats of the department with some reports claiming the

inadequate and broken state of these boats. The ministry of finance over the past years has come out to comment on the matter stating that the customs boats are in good working conditions therefore giving a clean bill of health to the department. Maritime security has is depended of the geographical, political and national boundaries, taking the East African Territory, the Kenyan Coastal waters has been faced by some challenges over the past years; the country to its northern coast borders the Somali which has become the home of the Islamic terrorist group Al Shabaab. Over the past decade there has been increased incidences of insecurity within the Kenyan coastal waters and the international waters nearing the east Africa and the Indian Ocean. Vessel high jacking is an example of increased piracy and insecurity within the region, Mv Faina of Ukrain origin was high jacked by the Somali pirates in the year 2009, the same year that Mv Sirius star was high jacked (Cannon, 2016).

Almost over a decade now, and despite these efforts in the improvement in the coastal surveillance to fight against the illicit trade and smuggling, the Kenyan coastal waters have still remained porous even after the introduction of the Marine unit in the combating of the illicit trading. There has been increased cases of illicit trading in the coastal waters whereby contrabands, drugs and even illegal commodities have found their way into the Kenyan market. This indicates an underperformance of the department since it has not fully achieved its objectives. This study is aimed at investigating the factors that affect the performance of the Customs Marine Unit operations in the coastal region while undertaking its mandated duties of coastal border protection and patrols.

### **1.3 Objectives of the study**

#### **1.3.1 General Objective:**

The aim of the study was to establish factors affecting customs marine operations performance at the port of Mombasa.

#### **1.3.2 Specific Objectives**

The study was led by the following specific objectives

- i. To investigate the effects of human resource capacity on the customs marine performance at the port of Mombasa

- ii. To assess the effect of marine equipment used in the customs marine performance at the port of Mombasa.
- iii. To establish the effects of border security strategies on customs marine performance at the port of Mombasa

#### **1.4 Research questions**

The study was guided by the following questions:

- i. What is the effect of human resource capacity on customs marine performance at the port of Mombasa?
- ii. What is the effect of marine equipment used in the customs marine performance at the port of Mombasa?
- iii. What is the effect of customs border security strategies on customs marine performance at the port of Mombasa?

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

The findings of the current study were to seek on what factors that had affected customs marine unit performance at the port of Mombasa and their impact on the marine operations performance. How to bring cooperation between KRA and other stakeholders at the Mombasa port so as to enhance the smooth patrol and compliance rate and thus, the study tried to seal any loopholes that might have been exhibited by the customs marine operations at the port of Mombasa. Hence reducing the illegal fishing activity, smuggling and human smuggling. The overall aim of the study was to improve on surveillance in fight against the illicit trade and smuggling at the coastal region.

The study was of benefit to KRA by enabling the authority have qualified, well trained and experienced staff that would assist the authority in living its vision and mission. The study would help KRA to come up with better and latest methods of patrolling as well as ensuring that all revenue is well captured from the imports and exports through the Mombasa port and gazette point of entry.

This study will be important to various stakeholders as described; To the Kenyan Government, the study will be of great importance to its agencies like the KRA, KPA, coast guard and other government agencies. Currently the Kenya Ports Authority is implementing the performance of

marine operations at the port of Mombasa. This is a strategy to ensure the institution is right on track concerning marine operations. The recommendations from the study can be used in making guidelines and policies that are of great importance to all government lead programs in regards coastal border patrols.

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

The research study was limited within the geographical of Mombasa port of Kenya and entailed the customs marine unit operational performance at the port of Mombasa. The study was conducted at the Mombasa port. Randomly selected KPA personnel, customs and marine police officers were selected as a sample for the research this was because they were the ones who were directly tasked with marine operations at the Mombasa port. The study helped the researcher establish the factors that affected customs performance at the port of Mombasa.

### **1.7 Limitations of the study**

This study was centered on expectations that respondents would spare their time to answer questionnaires in the study and that they were sincere in their responses therefore providing a data that could be relied on during this research. Reliability of this data was based on the respondents' honest opinions as some respondents were not willing to relay information.

Printing of questionnaires, dropping and picking of dully filled questionnaires provided a challenge in terms of funding. Another major challenge was getting enough time to conduct this research. Financial constraints and time were dealt with through budgeting and planning for resources that were available.

The research however managed to have a reliable data and accurate responses from the respondents' despite of the mentioned challenges. The questionnaire used for the study was well structured and hence it provided a confidentiality of information from the respondents. Respondents were treated with respect and the data collected from them was kept with the highest degree of confidentiality.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

According to Owolabi (2007), literature review makes the basis or foundation on which the research is based, searching out, reading, digesting and critically evaluating the work of other scholars before the researcher as it helps to create a good understanding of an insight to relevant previous research and upcoming trend This chapter gives a concise and comprehensive appraisal of relevant literature to the study on the factors affecting customs marine unit operations at the port of Mombasa. Human resources, infrastructure and custom border security as initiatives to enhance customs maritime operations. The review in this chapter focused on the relevant theories and a justification of the study which is applicable within the context of this study, a summary of relevant studies to the research, the conceptual framework, a critique of the literature, and research gap.

#### **2.2 Theoretical Review**

This section is about studies and theories thereof related to the concepts on this research the aim of the study, the best approach to determine the factors affecting customs marine unit performance at the Port of Mombasa. Stakeholder theory, organization Theory and Resource based view Theory provides a good fit for the study.

##### **2.2.1 Human Capital Theory HCT**

Human Capital theory was first proposed by Theodore (1960), to show the value of human capacities he made a conclusion that human capital was like any other type of capital, where this form of capital could be invested and increased or enhanced through education, training and of course enhanced benefits that lead to an established quality and level of production.

Human capital can be defined as a set of the following; knowledge, assets, skills and experiences that a person has which add value to the company. It tells us that not all employee has the same value, it is all in their knowledge, skills and assets. It assumes that people act in a rational way at all times, (Savannah, 2017).

Gareth (2009) defines organizational change “as the process by which organizations move from their present state to some desired future state to increase their effectiveness”. Organizations change such as KRA in response to changing business environment both internal and external environment such as law, policies, technology, customer tests and choices that influence trade facilitations. These developments influence and attaches different aspects of human resource management. In this regard organizations have to change to keep in line with globalization trend geared towards provision of effective run of international trade which depends on skilled service providers that works effectively i.e. shipping lines, port terminal, customs official and other agencies like rail and roads (Atos, 2012).

According to Becker (2010), human capital theory refers to the stock of knowledge, generation of ideas and other personal attributes that enable an individual to be productive in an organization. The theory provided a good fit for this study since it focused on knowledge, experience and education of customs officers at the Port of Mombasa as well as other stakeholders

Nuno (2014), states that for an immigration officer to work at the department, they ought to have some of the following skills that will enable them work effectively; problem solving techniques, ability to relate well with others, communication skills and an ability to observe. This is the kind of human factor was necessary at the port of Mombasa so as to enhance better surveillance and enhanced vessels profiling. Immigration department does not work in isolation, but it works hand in hand with their counter parts from the customs department (KRA, 2017).

The customs marine unit officers at the port of Mombasa needed to possess and be equipped with customs skills, knowledge and experience so as to enable smooth patrolling and surveillance to deter illegal activities and enhance compliance. Human capital is also very crucial for an organization’s mission fulfillment as well as human capital increases through the experience and education that one has (Crook et al, 2011).

### **2.2.2 Stakeholder Theory**

Stakeholder theory is an organizational management theory touches on moral values in an organization’s settings (Freeman, 2013). This theory was proposed by Edward Freeman in his book, “Strategic Management; a Stakeholder Approach” he sighted different categories of people in an organization who can be referred to as stakeholders. According to Freeman (2013), he suggested that stakeholders required special attention as well as corporation for an organization to achieve its

mandate. In his book he sighted shareholders as being the major stakeholders, the study shall focus on the customs enforcement, Kenya coast Guard, Kenya Ports Authority marine operations and Marine police as the major stakeholders for KRA at the port of Mombasa

The stakeholder theory incorporates the resource based point of view, while it integrates other factors such as political and social factors as well. The theory outlines several types of stakeholders amongst them are customers, employees, government, trade associations (Donaldson, 2014). Stakeholders have certain powers that they exact on an organization due to their various relationships with an organization. The legitimacy is the globally accepted and expected behaviors, norms and structures that an organization should follow in order to serve the interests of the stakeholders in the best possible manner (Mitchel, et al 2010). The stakeholder theory as proposed by Edward Freeman incorporates five themes to learn from. They are definition and the different stakeholders surrounding an organization and the stakeholder's responses as well.

To get to the bottom line about the importance of the stakeholders' theory, there must be an understanding of the validity of the stakeholder theory and the point to which it can be applied to an organization. Therefore, stakeholders can easily be identified primary and tertiary stakeholders (Friedman, 2012 Stakeholder theory advances that organizations should consider and address the concerns of individuals or groups that affect or may be affected by organizations in its pursue to achieve their objectives (Gibson, 2000). Aware of multifaceted relationship between stakeholders and organizations, Stakeholder theory tries to explain influence of stakeholders on organization and how the organization responds to those influences (Gray, Owen & Adams, 2014; Friedman & Miles, 2002).

The theory tries to unmask what other theorists were struggling to establish the duties and responsibilities of organization towards groups or individuals a part from suppliers, shareholders, employees and customers (Shankman, 2014). In light with the fore going discussion, organizations can have a wide range of stakeholders such as: fund providers, taxpayers, staff, investors, government agencies, media, labour unions, society and local community all with different roles to play for the survival of the organizations. However, as argued by (Mitchell, Agle & Wood, 2014) the key criteria for identifying and categorizing stakeholders should be based on: attributes of power, ability to affect or be affected by organization's actions and legitimacy and urgency.

As usual Customs border operations involve different players; that calls for redistribution of power of some government agencies. As Jain (2012) argued, conflict of interests of different stakeholders may sabotage the efforts towards offering effective service delivery to customers at Customs. Therefore, clear understanding and support by all stakeholders towards trade facilitation at Customs is very important as exemplified by Canada and USA bilateral agreement on formation and execution of Action Plan of Smart Borders

### **2.2.3 Resource Based View Theory**

The resource-based view theory was postulated in 1991 by Barney in an article called ' Firm Resources and sustained competitive advantage'. The theory bags on the aspect of competitive advantage of a firm to stand out in market. This theory postulates that nearly all firms are heterogonous in nature because they do possess heterogeneous resources. What differentiates the firms later on is their ability to innovate and strategies so as remain abreast in the market and industry. Barney and Clark (2007) posit that the dominant paradigm of a firm greatly lies on the strategic process of planning. The theory is based on the major assumption; resource heterogeneity and resource immobility. The resource heterogeneity as an assumption state that given firm possess abundance in resources which can be human financial or asset abased. The resource immobility assumption postulates there may be existence of innovation which is controlled humans. The relevance of the resource based view theory is on the equipment or technological tools as the study objectives. Based on this theory, customs marine unit performance ought to ensure that it establishes concrete procedures that will see customs marine unit performance improved at the port of Mombasa. The main aim of this theory in business is to eliminate any constrains so as to reach the maximum desired results by an organization. In this case, the customs department at the port of Mombasa ensures that all problems or constraints faced by marine equipment are quickly addressed to ensure the smooth customs marine unit patrols and surveillance is improved.

## 2.3 Conceptual Framework

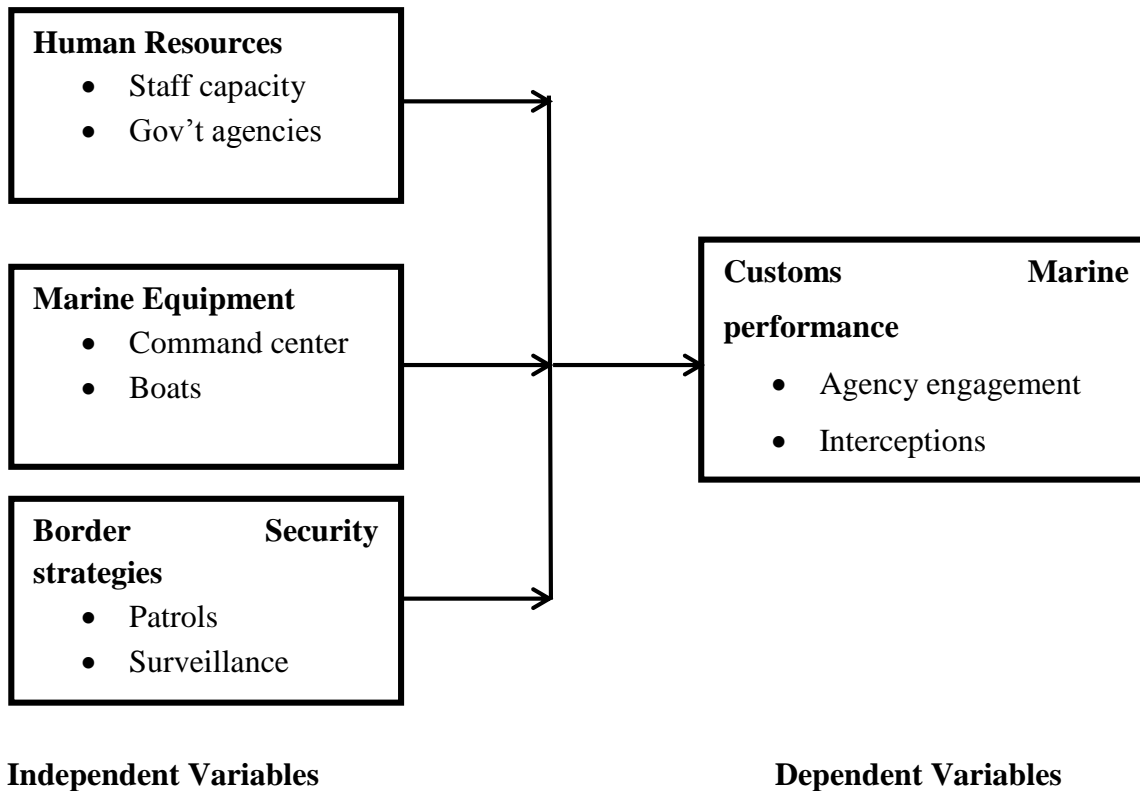


Figure 2.1 Conceptual Framework

## 2.4 Review of variable

### 2.4.1 Marine Equipment

According to Masta (2009), the port of Mombasa has under gone several facelift to improve its equipment so as to cope with ever increasing demand for better services. The recent dredging of navigational and anchorage basins equipped with modern navigation aids and the ongoing equipment upgrading and installation of ICT system has given Mombasa port an edge over others ports in the region. As a result of this, the port capacity has increased and can now accommodate bigger vessels such as panamax with larger capacity up to 8,000 TEUs. The port expansion has seen Total Cargo Throughput rise from 30.345 million tons in 2017, to 32.658 million in 2018 and container Traffic forecast to move from 1.190million TEUs in 2017, to 1.252million in 2018 targeting to be a regional Transit and Transshipment Hub by 2022. Further, due to enhanced yard

capacity, the port has seen a reduction in dwell time, increased capacity and operational efficiency by reducing costs of doing business. This has been made possible by developing and implementing systems to facilitate trade i.e. East African Single Customs Territory (EAC SCT), National Single Window System (NSWS), Kilindini Water Front Terminal Operating System (KWATOS) and Enterprise Resource Planning (ERP).

Notwithstanding its characteristic profound harbor with a decent cover, the port has accomplished a most extreme dug profundity of -15 meters. Other port offices incorporate 19 profound water billets with a normal of 15meter draft and absolute quay length of 3,284 meters. This incorporates six compartment billets with quay length of 1,190meters (840meters CT1 and 350meters CT2), 2 mass oil compartments and 2 dry mass wharves with an absolute length of 315 meters and 2 dhow breakwaters at the Old Port. The other port infrastructures incorporate Bandari College, ultra-current bulk grain handling facility at Berths 3 and 4 that is operated by Grain Bulk Handling Company Limited (GBHL) and specific offices for dealing with bulk cement and fluorspar at Mbaraki just as soda ash through transports at Berth No. 9 (Humphreys et al,2019).

According at Ruto & Datche, (2015), The port capacity has expanded and fully automated to enable handle large volume of cargo for the region. For easy flow of cargo, the gates and equipment's have been modernized to enhance security and delay in clearing cargo. This has been made possible with the support of other partner agencies such as; Uganda Revenue Authority, Kenya Revenue Authority, Kenya Railways, KeNHA and engagement of stakeholders through sensitization workshops & Forums. In line with this the government is constructing of the 2<sup>nd</sup> Container Terminal at the port of Mombasa with a projection of handing capacity of 2.6 TEUSs on completion. This will bring additional capacity of 450,000 TEUs. This is in line with Vision 2030 project development of a SEZ and Free Port facilities projected to occupy 3,200 acres of land at Dongo Kundu.

In keeping with the fore going discussion and in recognition of the impact of poor customs and border performance on collection of revenue, the authority has been focusing on customs and border management agencies to improve national competitiveness, regional integration in order to facilitate trade. Studies have shown that customs contribute to a third of cargo delay. Therefore, it is prudent that other government agencies operating at the border are brought on board to

participate in this process of reform. The agencies have been focusing on implementation of seamless 'single window' regimes. Seamless 'single window' allows traders to submit launch their document electronically. Efficient flow of information expeditious clearance of cargo and it is equally important to all parties involved in cargo movements i.e. clearing personnel and importer/exporter (Das, 2017).

The use of technology has helped to speed up document processing since paper work can be launched and checked electronically at the border. This is in line with KRA effort to streamline customs border operation as outlined in their 7th edition corporate plan; to integrate its systems that allows 'single view' of tax, institutionalize corporate wide risk-based management, implement tax information manager system and to review, upgrade and expand the capacity of the Excise Goods Management System (EGMS) and undertake robust intelligence collection, utilization and investigation. This aims is to provide user-friendly online interfaces for all users in order facilitate fast documentation processes, enhance transparency and to minimize customs clearance costs (Marine and Offshore Technology, 2017). Nonetheless, for a port to work productively it requires other supporting foundations like roads and rail with a well-planned interface to abstain from stopping up and chocking of port with cargo. This calls for appropriate coordination, organization with upgraded endeavors from particular government agencies in a joint effort with private sector for the motivations behind guaranteeing consecutive smoothness in development of cargo from the port to hinterland by roads and rail. Lamarque (2019), the issue of space at the Mombasa port has been resolved after expansion and commissioning new container terminal and construction of SGR from Mombasa to Nairobi. This result to a decrease in cargo going to CFSs. Therefore, coordination and harmonization as well as simplification to minimize customs formalities is very critical for maximization of economic benefits to all stakeholders.

In support of fore going discussion Atos (2012) adds that provision of productive progression of international trade profoundly relies upon a scope of gifted service providers that cooperates adequately (for example shipping lines, port terminal operators, customs officials). Customs being bleeding edge of the different organizations that intercede in global trade, it is profoundly associated with controlling goods and deciding merchandise terminology, the origin and collecting revenue just as administering trade policies (Bhatnagar, 2012). McKinnon (2012) adds that, the way in which Customs works can either negatively or positively influences international trade. At

the end of the day, the way wherein Customs works can either complicate or simplify international trade facilitation.

#### **2.4.2 Human Resources Capacity**

The impact of globalization and need for trade facilitation has put a lot of pressure on Customs Administrations to undergo restructuring in terms of human resources development. These and other factors related to Customs Professional Development and mentioned in the PICARD 2020 strategic document (WCO 2013) has given a high priority to Human Resource Development in Customs.

In support of this Atos (2012) adds that efficient flow of trade across the borders highly is determined by a range of skilled service providers such as customs officials who are deeply involved controlling goods crossing borders, administering trade policies and collecting revenue (Bhatnagar, 2012). McKinnon (2012) adds that the way Customs operates can positively or negatively trade facilitation. These are the challenges Customs administrations are facing and human resources development is one of the actual issues in Customs given that Customs performance directly depends on human resources. Therefore, effective system of training and education will enhance the level of professionalism which is key in meeting Customs requirement as recommended by ISO International standards (ISO 9004:2009). This has been a key focus area at Kenya School of Revenue Authority (KESRA) as outlined in its 7<sup>th</sup> corporate plan to focus on training, leadership development, performance management, succession management and knowledge management to empower its work force and other stakeholders in order to improve quality of services when called upon execute state function.

#### **2.4.3 Border Security strategies**

Border security is a major concern not only to Kenya, but regionally and globally. The most prevalent type of border security concerns and its related crimes are: smuggling of illicit goods, illicit drug trafficking, illegal migration, corruption, smuggling of counterfeit goods among others. A survey by National Crime Research Center, 2017 report, pointed out that there are many border security threats ranging from smuggling of illicit goods to human trafficking. The research findings further indicated that factors such as poverty and unemployment, corruption among the state and non-state agencies, political instability, weak law and order enforcement of neighboring countries,

poor coordination, lack of information sharing among border control and management agencies, lack of enforcement of relevant rules and procedures (WCO, 2012) and absence clarity and procedures (WCO/OCHA/IFRC, 2012) are major causes of border insecurity at customs borders. Manifestation of these setbacks is against Kyoto Convention core principles that seek to promote simplification, transparency, standardization and harmonization of customs procedures (WHO, 2016). The costs of this border insecurity may lead to loss of life/lives, low investment and business growth due to conflicts, high level of corruption, evasion of tax and loss of revenue. This contributes significantly to destabilization of economic, social and political activities in Kenya and across borders.

In an attempt to minimize these threats, the government have deployed and tasked regional and county commissioners to oversee boarder coordination and reinforce security matters. However, due to porosity of the border routes, makes it difficult to contain the situation. To make worse, deficient of technical aids such as scanners, detectors sniffer dogs and K9s poses a serious challenge to the authority agencies. In support of this Yasui (2010) observed that these challenges pose a threat to trade facilitation contrary to Kyoto Convention that aims to facilitate and promote trade by reducing nontariff measures (NTM) at our border checkpoints. Another factor that contributes to insecurity across borders is the absences of key institutions such as Judiciary at the border points ( Helbling et al., 2015). This has contributed to insecurity due to delay to administering justice. For instance, there is court at Namanaga border point, all security matters that arises in this area are heard and determined in Kajiado courts or in Nairobi courts. Other challenges that needs to be addressed are: corruption amongst security officers, shortage of police/ security officers resulting to few patrols, low inter-state cooperation and lack of participation by the local community, long borderline which is hard to monitor, lack of coordination between National and County governments among others.

In such circumstances, there is need to embrace new technology coupled with enhanced border security personnel equipped with real time modern communication gadgets. Further the government agencies need to enhance capacity building of their staff and equip them with technical skills/Knowledge. In addition, every agency need to undertake aggressive citizen sensitization campaigns on the negative effect of corruption on economic development of the country

## **2.5 Empirical Review**

Study by Komarov (2016) noted that customs work involves high volume of transactions that makes hard for Customs officers to conduct checks on all forms of cargo as evidenced in Ukraine. Under these working circumstances customs administrations in Ukraine are faced with various challenges in facilitating of movement of voluminous cargo while fulfilling the duty of detecting customs fraud. The adoption of risk management system technology that uses measure of selectivity in Ukraine's customs control helps to facilitate movement of cargo within Ukraine and other regions.

Studies by Morrissey & Zgovu (2009) on the role of effective ports management in facilitating international trade in India concluded that there is an instant relationship among port operation facility, ports decongestion, less traffic, secure and safe ports and effective international. Further, study presumed that successful and proficient ports the management is key in encouraging international trade.

Study Malchow & Kanafani (2011) on improving port efficiency and custom operations in Asia established that automated systems at customs and other institutions, positively affects and promotes international trade making the countries the trade hub of the sub-region. Mwashigadi (2014) studied factors that influence effectiveness and execution of mandate of by state regulatory and enforcement agencies within maritime trade in Kenya. The study findings revealed that lack of proper ICT infrastructure; bureaucracy, political interference and poor integration of a harmonized regulatory framework among the state agencies were major hindrance to trade facilitation.

## **2.6 Critique of Existing Literature Relevant to the Study**

The study by Komarov (2016) relates to the case of Ukraine's risk management system. It outlines initiatives by the Ukrainian government to facilitate legitimate trade by adopting a functional risk management framework. The framework of risk management in Ukraine is aimed at ensuring efficient, transparent, and simplified procedures for customs procedures. It conforms to the provisions of WTO's TFA Article 7, sub-paragraph 4 on the need to set up a robust risk management system as well as customs control. The study encourages the use of a perfect selection

criterion. The study, however, does not highlight the processes of detecting the level of consequences of risks identified.

Study by Lubano (2011) on risk management measures adopted by the Kenya Revenue Authority recommended stringent measures to address risks that are inherent to the functions of the Kenya Revenue Authority. The study supports strategic measures to identify and document all known as well as anticipated risks that might compromise efforts by the Kenya Revenue Authority to attain its goals. Although this study is useful to inform risk management, it presents a simple generalization of risk management to all departments at the Authority. It is notable that the different departments at the Authority experience different risks. Customs and border control departments' risk factors may differ from that of the Domestic Taxes Department. This necessitates measures that are responsive to the customs and border control department at the Authority.

Studies by Morrissey & Zgovu (2009) on the role of effective ports management in facilitating international trade in India was carried out in developed country. The condition and environment under which customs operates in India are quite different compared with less developed countries. In line with this study by Malchow & Kanafani (2011) was also carried out in developed countries which may not be applicable to less developed countries such as East African countries.

## **2.7 Research Gaps**

Study on Customs Maritime operations in Africa, highlights the challenges that face many African Customs administration. However, lack appropriate customs equipment, inter-state corporation, coordination and political will in the region remain a major hindrance, thus no administration appears to have comprehensive framework policy that mention about customs declaration violations that cuts across inter-states. It is through information found in the declaration through data mining that will inform the decision on how manage cross border trade facilitation efficiently the interest of all stakeholders.

The research gaps observed from the literature reviewed above, were evident that the findings were not clear on the elements that are involved in customs marine operations at the port of Mombasa therefore, enterprises tend to avoid the whole issue of marine equipment, human resource capacity

and boarder security, hence the major reason for illegal activities and noncompliance at the port of Mombasa. In line with this study by Malchow & Kanafani (2011) was also carried out in developed countries which may not be applicable to less developed countries such as East African Countries More studies were based on risk management systems, at the ports thus, the study sought to clear this knowledge gap by studying on the factors that affect customs marine unit performance at the port of Mombasa. From the above studies however, the emphasis seems to be skewed towards the bigger picture of improving service delivery and results thus the sections such as marine unit has been lagging behind.

## **2.8 Summary**

The theories are particularly relevant to this study because of the parameters set out in its variables. This chapter started by providing a summary of the discussion on the main key theoretical approaches and findings reported earlier in relation to marine operations at the ports. Key theoretical approaches discussed; Human Capital Theory, Resource Based view theory and Stakeholder's Theory. The chapter also includes conceptualization, critique of existing literature and research gaps identified by the research.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter provided the operational framework within which data was collected and analyzed. It described the research design that was employed, the study population, sample size and selection, collection of data and analysis, the research instruments used, the research procedure followed, measurement of variables, reliability and validity of instruments. According to Webster, (2015) research is a keen study that is undertaken to unearth and report new knowledge about a phenomenon. It is a diligent search, a keen investigation or examination especially investigation aiming at the discovery and interpretation of facts.

#### **3.2 Research Design**

The study used a descriptive survey research design in arriving at a better conclusive examination on the factors that affect customs marine unit performance at the port of Mombasa. Where by both qualitative and quantitative research techniques were applied. Descriptive research as put by Hopkins et al, (2010) involves getting together data that tell events, opinions, and attitudes and then organizes, tabulates, depicts, and describes the data collection. Descriptive research can also be explained as the prevailing conditions or situation of a subject under study as put across by Aggarwal, (2008). The research design involved obtaining, information concerning one or more groups of people perhaps about their characteristics, opinions, attitudes, or previous experiences through asking respondent's questions (Hopkins et al, 2010). Descriptive research was preferred since the researcher wanted to obtain better understanding of the factors affecting customs marine unit performance at the port of Mombasa.

#### **3.3 Population**

Population means the total gathering of particular individual components applicable to the research study or all the individuals or units of interest (Hanlon & Larget, 2011).

This definition will ensure that the population of interest was homogeneous or uniform throughout the study. The study targeted 50 customs officers, 100 KPA marine operations officers, 80 marine police officers, at the port of Mombasa who in total make a population of 230.

**Table 3:1 Target population**

<b>Respondent</b>	<b>Population</b>	<b>percentage</b>
Customs enforcement	50	21.7%
KPA marine operations	100	43.5%
Marine police	80	34.8%
<b>Total</b>	<b>230</b>	<b>100%</b>

Source: customs enforcement, KPA marine operations, marine Police kilindini.

### **3.4 Sampling Frame**

This is the source material from which, it is an outline of those potential candidates within a population that qualify to be sampled James (2009), (Hanlon & Larget, 2011). For this study, a sampling frame shall be a list of customs officers at the port of Mombasa as provided by the KRA, in charge of customs department as shown in table 3.1 above.

### **3.5 Sample and Sampling Technique**

Sampling is a process of choosing members of the population of interest that a study seeks to obtain information from that is both statistically and logically sound (Creswell, 2008).

The formula used to determine sample size is indicated below. In this study a 95% confidence level and  $P = 0.05$  was assumed.

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

Where  $n$  is the sample size,  $N$  is the population size, and  $e$  is the level of precision.

$$\text{Applying the formula, } n = \frac{N}{1+N(e)^2} = n = \frac{230}{1+230(0.05)^2} = 146$$

Therefore; the sample strata summary was as shown in the table below

**Table 3.2 Sample Size**

<b>Respondent</b>	<b>Sample size</b>	<b>Percentage</b>
Customs enforcement	32	22
KPA marine operations	63	43.1
Marine police	51	34.9
<b>Total</b>	<b>146</b>	<b>100</b>

The study used stratified sampling, customs officers, police officers, KPA officers shall be the strata and be sampled based on the number of respondents Slovin formula was used to help the researcher arrive at a desired sample size.

The researcher determined the factors affecting customs marine unit performance at the port of Mombasa using questionnaires.

### **3.6 Data Collection Instruments**

These are tools for data extraction (Ormston et al, 2013). Since the study was largely depended on primary data, questionnaires were used as data collection instruments using structured questionnaires that were more helpful in extracting more information from the respondents. According to (Kothari, 2004) the data extracted using questionnaires is not easily manipulated by either the researcher or any other person hence increasing its reliability. The researcher used questionnaires while assessing factors affecting customs marine unit operations at the port of Mombasa. The questions were in a structured format to limit and keep the focus on the objectives, thus the researcher gained appropriate response more relevant to the research at hand (Creswell, 2013). The study used structured questionnaires to collect data. The questions in part two were designed using a 5 point Likert scale ranging from 1 to 5.

### **3.7 Data Collection Procedure**

This is the systematic method of gathering and measuring information on the targeted individuals under study so as to come up with an answer to the question under study (Ormston et al, 2013). This was achieved through self-administered questionnaires. The researcher depended on assistance from enumerators in dropping and picking up the questionnaires to the respondents

while conducting a follow up interviews so as to make sure the questionnaires were duly filed before being picked to minimize errors.

### **3.8 Pilot Testing**

This was a small scale preliminary study done so as to evaluate or ascertain the feasibility, period, cost and size variability. This was done in respect to research design. It collects data from respondents similar to those that will be used in the full study that is, 10% of the selected sample size (Mugenda & Mugenda, 2003; Fresar et al., 2018).

#### **3.8.1 Validity**

Validity is when an item delivers or gives out what it is supposed to give out or deliver (Neuman, 2014). Validity of variables was tested using SPSS' Kaiser-Meyer-Olkin (KMO) Cerny & Kaiser, (2012) to show how independent variables are related to dependent variables and whether they are at accepted levels. As Collins (2009) said, this would guide in examining specific aspects of research to see if the selected procedures will work. It leads to more reliable results and enhances the validation of the tasks prior to the actual research.

#### **3.8.2 Reliability**

Reliability is the consistency of data collection instrument in providing same results on same conditions (Kothari, 2011). Reliability of the data collection instrument for the study was measured using the SPSS Cronbach's Alpha during piloting.

### **3.9 Data Analysis**

It is that act of systematically reasoning to understand the data that has been gathered (Ridley, 2009). It is also known as data purification, changing and modeling data with an aim of discovering useful information, giving suggestion and thereby give support to decision making, the raw data obtained through the use of the questionnaires was analyzed using Statistical Package for Social Science (SPSS) version 25. SPSS, was used to generate frequencies, descriptive analysis, reliability and validity of test, correlation and at the end run regression. The results of some of the analysis were to be exported to Microsoft Excel for visual presentation and reporting.

#### **3.9.1 Linear regression Model**

The relationship of the variables, were expressed as a linear regression model.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where,

Y = Factors affecting customs marine unit performance,

$\beta_0$  = Constant (constant coefficient of intercept) y intercept

$X_1$  = Human Resource Capacity Factors

$X_2$  = marine equipment Factors

$X_3$  = Border security strategies

$\beta_1$ ,  $\beta_2$ , and  $\beta_3$  are regression coefficients explaining variables  $X_1$ ,  $X_2$  and  $X_3$  respectively

$\varepsilon$  = Error term. Other factors affecting customs marine unit performance at the port of Mombasa but not included on this research.

## CHAPTER FOUR

### DATA ANALYSIS AND PRESENTATION

#### 4.1. Introduction

This chapter presents the output of data analysis descriptive statistics were used to explain the results of the study which were made in form of frequencies, percentages, tables, and regression analysis using the SPSS software that was used to convert the collected data into meaningful information as shall be shown in the preceding sub-chapters below

#### 4.2. Response Rate

The targeted population for this study was customs enforcement officers, Kilindini marine police officers, KPA marine operation officers at the port of Mombasa targeted respondents were 146 out of which 104 respondents filled the questionnaires thus making a response rate of 71, 2% of the respondents which was considered satisfactory to make the conclusion for the study. Thus, the recommendations by Mugenda and Mugenda (2003) that a response rate of 50% is adequate to undertake a study.

The researcher sought to establish the response rate of the respondents. The results are indicated in table 4.2.

**Table 4.2 Respondents and Response Rate**

<b>Respondents</b>	<b>Frequency</b>	<b>Percentage</b>
Respondents	104	71.2%
Non-respondents	42	28.8%
<b>Total</b>	<b>146</b>	<b>100%</b>

Mugenda and Mugenda (2012) observed that a 50% response rate is adequate, 60% good and above, while 70% rated very good. Based on this assertion, the response rate of 71.2% in this case is therefore very good and is considered satisfactory to make conclusions for the study.

## 4.3 Pilot Results

### 4.3.1 Validity

The study employed KMO and Bartlett's test to check for the validity of the contents in the data collection instrument. From the analysis, The KMO sampling adequacy was 0.708. According to Neuman (2014), higher values which are closer to 1.0 shows that a factor analysis may be useful with your data. This meant that the data was useful in factor analysis. For the Bartlett's Test of Sphericity, the significance was 0.000 which was less than  $p < 0.05$ , indicating that factor analysis may be useful with the available data.

Table 4:1 KMO and Bartlett's Test

<b>KMO and Bartlett's Test</b>			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			.708
Bartlett's Test of Sphericity	Approx. Chi-Square		52.182
	Df		3
	Sig.		.000

### 4.3.2 Reliability Analysis

The reliability of a measure is established by testing for both consistency and stability of a research instrument. The reliability of this instrument was assessed with the use of Cronbach's alpha which consists of estimates of how much variation in scores of different items is attributable to chance or random error. Table 4.3 presents results on reliability.

Table 4.3: pilot results

Scale	Cronbach's Alpha	Items	Comments
Human Resource	0.788	5	accepted
Marine Equipment	0.716	5	accepted
Border Security	0.759	5	accepted
Custom marine unit performance.	0.701	5	accepted

The overall Cronbach's alpha for the four categories is 0.75. The findings of the pilot study show that all four scales are reliable as their reliability values exceeds the prescribed threshold of 0.7 (Mugenda & Mugenda, 2012). For the purpose of determining the internal consistency of the data collection instrument (Questionnaire) using Cronbach's alpha that was tested on each variable using the SPSS version 25, Cronbach's alpha was used to view the values on how the questions related. Human Resource capacity had a value of 0.788, marine equipment had a value of 0.716 while border security had a value of 0.759 and Customs marine unit performance had a value of 0.701 therefore indicating that the instrument was accepted hence, the questionnaire was ruled to be reliable.

#### 4.4 Demographic Information

Demographic data are quantifiable characteristic of a given population. This includes level of experience and respondent's occupation. The analyzed results were based on 104 participants who successfully filled and returned questionnaires. The results are presented in the tables below. The occupation of the respondents and the period the respondent has worked were the aspects of profile variables investigated in this study.

##### 4.4.1 Category

The study sought to establish response category of the respondents. The findings are presented in table 4.4.

**Table 4.4: Respondent's Occupation**

<b>Details</b>	<b>Frequency</b>	<b>Percent</b>
Customs officer	27	25.9
Marine Police	35	33.7
KPA Officer	42	40.4
<b>Total</b>	<b>104</b>	<b>100.0</b>

As per the findings in table 4.4, shows the categories of the responders, 25.9% were from customs officers, 33.7% from Marine Police and 40.4% from KPA officers.

#### 4.4.2 Experience of respondents

The study sought to establish the work experience of the respondents. The findings are presented in table 4.4.1

**Table 4.4.1: Respondents' Experience**

<b>Experience</b>	<b>Frequency</b>	<b>Percent</b>
1 - 5 years	13	12.5
5-10 years	54	51.9
Above 15 years	37	35.6
<b>Total</b>	<b>104</b>	<b>100.0</b>

As per the findings in table 4.4.1, majority of respondents (51.9%) had a working experience of between 5 to 10 years. Further results show that 12.5 per cent of the respondents had a working experience of between 1 to 5 years and 35.6% of the respondents had a working experience of more than 10 years. The number of years that the respondents had worked in the target organizations was considered important, which means that the respondents had adequate working experience and therefore possess the necessary knowledge, information and the institutional memory which was considered useful for this study.

#### 4.5 Descriptive Analysis of the Variables

The objective of the study was to establish the factors affecting the implementation of the KNESWS in the port of Mombasa. The section therefore was guided by the study objectives.

##### 4.5.1 Human resources and customs marine unit performance

The study sought to find out the effect of Human resources on customs marine unit performance at the port of Mombasa. A Likert scale data was collected rating the extent of agreement in a scale

of 1 to 5 where 1 is the strongly disagree whereas 5 is the strongly agree indicator. The mean score for each item was calculated and the findings are shown in table 4.5.

**Table 4.5: Human Resources**

	<b>Mean</b>	<b>Std. Deviation</b>
Training of staff in marine unit affects its operations	3.71	.952
International standard qualification and standards are adhered in course of selecting and training staff	3.42	1.146
Incorporating multi agencies approach onboard increases the scope thus boosting marine operations	3.88	1.188
Incorporating gov't agencies officer more frequently to improves performance	4.00	1.061
The level of education determines the competence level of staff	3.71	1.085

Results presented in table 4.5, the respondents agreed that there is sufficient training of staff in marine unit to boosts the operations as indicated by a mean of 3.71 and standard deviation of 0.952. The respondents also agreed that international standard qualification and standards are adhered in course of selecting and training staff as indicated by a mean of 3.42 with a standard deviation of 1.146. The respondents agreed that incorporating multi agencies approach onboard increases the scope thus boosting marine performance and also that incorporating government agencies officers more frequently improves performance as indicated by a mean of 3.88 and 4.00 respectively. Finally, respondents agreed that the level of education determines the competence level of staff as indicated by a mean of 3.71 and a standard deviation of 1.085. These findings are supported by Atos (2012) who states that organizations have to change to keep in line with globalization trend geared towards provision of effective run of international trade which depends on skilled service providers that work effectively i.e. shipping lines, port terminal, customs official and other agencies like rail and roads. He further adds efficient flow of trade across the borders is determined highly by a range of skilled service providers such as customs officials who are deeply involved controlling goods crossing borders, administering trade policies and collecting revenue

#### 4.5.2 Marine Equipment and customs marine unit performance

Data collected through the Likert scale measured the level of agreement of the respondents with respect to equipment and customs marine unit operations at the port of Mombasa. The results are as presented in Table 4.5.1.

**Table 4.5.1: Marine Equipment**

	<b>Mean</b>	<b>Std. Deviation</b>
A common office for agencies involved is essential for customs marine performance	3.74	1.231
One command center is key to marine operation	3.79	1.163
Use of up to date systems and modern technological tools affect marine operations	3.65	1.031
Procurement of new efficient boats affects customs marine performance	3.62	.938
Contract based timely boat repairs improves efficiency	3.26	1.052

As indicated in table 4.5.1, the respondents agreed that a common office for agencies involved is essential for customs marine performance as indicated by a mean of 3.74 and standard deviation of 1.231. The respondents also agreed that one command center is key to marine operation as shown by a mean of 3.79 and a standard deviation of 1.163. Respondents agreed that use of up to date systems and modern technological tools affect marine operations and procurement of new efficient boats affects performance of custom marine operations as indicated by a mean of 3.62 and standard deviation of 0.938. Finally, respondents agreed that contract based timely boat repairs improves efficiency as indicated by a mean of 3.26 with a standard deviation of 1.052. Barney and Clark (2007) support these findings as they posit that the dominant paradigm of a firm greatly lies on the strategic process of planning and that what differentiates the firms later on is their ability to innovate and strategies so as remain abreast in the market and industry.

### 4.5.3 Border Security Strategies and custom marine unit performance

The study sought to determine the effect of border security and custom marine unit operations. The results are presented in table 4.5.2.

**Table 4.5.2: Border Security Strategies**

	<b>Mean</b>	<b>Std. Deviation</b>
Improved inter-agency patrols affect service delivery	3.72	1.202
A single command and surveillance center for all agencies affects border security operations	3.82	1.172
Engagements with sea users i.e. fishermen/community affects border security	3.37	1.098
Emergency response centers near or at marine border points affect operations	3.74	1.231
Doing more of intelligence and targeting affect performance	3.79	1.163

The results in table 4.5.2 indicates that majority of respondents agreed that improved inter-agency patrols affect service delivery as indicated by a mean of 3.72 with a standard deviation of 1.202. Respondents also agreed that single command and surveillance center for all agencies affects border security operations as indicated by a mean of 3.82 with a standard deviation of 1.172. Respondents agreed that engagements with sea users i.e. fishermen/community affects border security as shown by a mean of 3.37 and standard deviation of 1.098. Emergency response centers near or at marine border points affect operations (mean = 3.74). Finally, majority of the respondents agreed that doing more of intelligence and targeting affect performance as indicated by a mean of 3.79 and standard deviation of 1.163. The findings are supported by Gibson's (2000) stakeholder theory which states that organizations should consider and address the concerns of individuals or groups that affect or may be affected by the organizations in its pursue to achieve their objectives.

#### 4.6 Bivariate Linear Correlation among all Variables

To establish the relationship between the independent variables and the dependent variable the study conducted correlation analysis.

**Table 4.6: Bivariate Linear Correlation among all Variables**

		Human Resources	Equipment	Border Security	Custom marine unit operations
Human Resources	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	104			
Marine Equipment	Pearson Correlation	.499**	1		
	Sig. (2-tailed)	.000			
	N	104	104		
Border Security	Pearson Correlation	.456**	.694**	1	
	Sig. (2-tailed)	.000	.000		
	N	104	104	104	
Custom marine unit performance	Pearson Correlation	.555**	.510**	.606**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	104	104	104	104

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Correlation results in table 4.6 shows that there was a moderate positive significant correlation between operational costs and Custom marine unit performance ( $r=0.555$ ,  $P=0.00$ ). Correlation results also indicate a moderate positive and significant correlation ( $r=0.510$ ,  $P=0.00$ ) between equipment and Custom marine unit performance at the port of Mombasa. Finally, the correlation results showed that there is a moderate positive significant correlation ( $r=0.606$ ,  $P=0.00$ ) between border security and Custom marine unit performance at the port of Mombasa.

## 4.7 Multiple Linear Regression

The study conducted a multiple linear regression analysis in order to investigate the factors affecting Kenya Revenue Authority customs marine unit operations at the port of Mombasa. In this model, coefficients of determination explain the extent to which changes in dependent variable can be explained by the changes in the independent variables or percentage of variation in dependent variable that is explained by all four independent variables.

### 4.7.1 ANOVA

Analysis of variance was employed to test the overall validity of the regression model. The results are presented in table 4.7.1

**Table 4.7: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	434.338	3	144.779	41.081	.000b
	Residual	352.422	100	3.524		
	Total	786.760	103			

a. Dependent Variable: Customs Marine performance

b. Predictors: (Constant), Human Resources capacity, marine Equipment, Border Security strategies

Analysis of Variance (ANOVA) was done to establish the fitness of the model used. The ANOVA table shows that the F-ratio ( $F=41.081$ ,  $p=.000$ ) was statistically significant. This means that the model used was a good fit. This implies that the predictor variables (human resources, equipment and border security strategies) explain the variation in the dependent variable which is Custom marine unit performance.

### 4.7.3 Model Summary

The results for the model summary are presented in table 4.7

**Table 4.7.1 Overall model summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.743a	.552	.539	1.87729

Predictors: (Constant), Government policies, Training, Operational costs

According to regression results in table 4.7.1, the regression equation between factors affecting KNESWS implementation had a moderate regression. In the model summary, the  $R^2$  is 0.552. This implies that the three variables studied explain 55.2% of variance in the Customs marine performance at the port of Mombasa. This means that, the other factors not considered in the study contribute 44.8% of variance in the dependent variable.

#### 4.7.4 Multiple Regression Coefficients

The raw and standardized regression coefficients of the predictors together with their t statistics are as shown in table 4.7.2

**Table 4.7.2: Regression Weights**

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
1 (Constant)	2.258	1.590		1.420	.000
Human_Resource capacity	.341	.086	.340	3.971	.000
Marine Equipment	.472	.233	.138	2.025	.000
Border_Security	.437	.109	.415	4.028	.000

a Dependent Variable: Customs Marine performance

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

$$Y = 2.258 + 0.341 X_1 + 0.472 X_2 + 0.437 X_3 + \varepsilon$$

Customs marine unit performance = 2.258 + 0.341 Human Resource capacity + 0.472 marine equipment + 0.437 border security +  $\varepsilon$

Where,

Y = customs marine unit performance

$\beta_0$  = Constant (constant coefficient of intercept) y intercept the value of customs performance when the factors under study are zero.

$X_1$  = Human Resource Capacity Factors

$X_2$  = marine equipment Factors

$X_3$  = border security strategies factors

The estimates of the regression weights, t-statistics and the p-values for the relationship between factors affecting customs marine operations at the port of Mombasa are presented in table 4.7.2.

$Y=2.258+0.341X_1+0.472X_2+0.437X_3$  clearly shows a significant positive relationship between the predictor variables and customs marine performance. The estimated coefficients show the contribution of each independent variable to the change in the dependent variable. According to the regression equation established, holding all independent factors a constant then customs marine performance will be average (2.258). This constant is significant in the model as it has  $p=.000$  which is less than the 5% level of significance taken for this study.

#### **4.8 Discussion of Research Findings**

Regression analysis further formed a basis for answering research questions adopted in this study. This was done by considering the p values corresponding to each variable of interest in the Table 4.7.2. The first objective of the study sought to investigate the influence of human resource capacity on the customs marine performance at the port of Mombasa. This was established by determining Pearson correlations of refined data. The results showed that there was a significant positive correlation between human resource capacity and Customs Marine performance ( $r = 0.555, P<0.01$ ). Regression analysis conducted proved that there was a positively significant effect of human resource capacity on the customs marine performance as indicated by the values  $\beta_1 = 0.341, t = 3.971, p<0.01$ . The study concludes that an increase in the human resources by one unit would lead to increase in customs marine performance by 0.341 units. These findings are supported by Atos (2012) who states that organizations have to change to keep in line with globalization trend geared towards provision of effective run of international trade which depends on skilled service providers that work effectively i.e. shipping lines, port terminal, customs official and other agencies like rail and roads. He further adds efficient flow of trade across the borders is determined highly by a range of skilled service providers such as customs officials who are deeply involved controlling goods crossing borders, administering trade policies and collecting revenue

The second objective was to assess the effect of marine equipment used in the customs marine performance at the port of Mombasa. Pearson correlation was conducted and the findings indicated that there was a moderate significant correlation between marine Equipment and Customs Marine

performance ( $r=0.510$ ,  $P<0.01$ ). Regression analysis was also conducted and the results showed a positively significant effect of marine equipment on customs marine performance as indicated by the values  $\beta_2 = 0.472$ ,  $p<0.01$ . The study concludes that an increase in marine equipment by one unit would lead to increase in customs marine performance by 0.472 units. Barney and Clark (2007) support these findings as they posit that the dominant paradigm of a firm greatly lies on the strategic process of planning and that what differentiates the firms later on is their ability to innovate and strategies so as remain abreast in the market and industry.

The study sought to establish the effect of border security strategies on the customs marine performance at the port of Mombasa. Pearson correlation was conducted and the findings indicated that there was a moderate positive significant correlation ( $r = 0.606$ ,  $P<0.01$ ). Regression analysis was also conducted and the results proved that there was positively significant effect of border security strategies on the customs marine performance as indicated by the values  $\beta_3 = 0.437$ ,  $t = 4.028$ ,  $p<0.01$ . The study concludes that an increase in border security strategies by one unit would lead to increase in customs marine performance by 0.437 units. The findings are supported by Gibson's (2000) stakeholder theory which states that organizations should consider and address the concerns of individuals or groups that affect or may be affected by the organizations in its pursue to achieve their objectives

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMENDATIONS**

#### **5.1 Introduction**

The following summary, conclusion and recommendations were made from data that was collected and analyzed, based on the following objectives of the study: To find out the extent to which customs human resources capacity affect customs marine unit performance, to find out the extent to which marine equipment factors affects customs marine unit performance, to establish the extent to which border security strategies factors affect customs marine unit performance and to establish the relationship between the factors and customs marine unit performance.

#### **5.2 Summary of the Findings**

##### **5.2.1 Customs human resource capacity factors**

From the findings, it was found out that human resource capacity was the most significant variable influencing customs marine unit performance with a unit increase in customs human resource resulting to .0.341unit increase in customs marine unit performance. The regression coefficient of customs human resource capacity and customs marine unit performance was positive ( $\beta=0.341$ ) and significant ( $p$  value =0.000) this means that human resource capacity factor is statistically significant. It was further revealed that customs human resource capacity factors enhances customs marine unit performance by ensuring that customs staff education, training and experience are maximized to increase customs marine unit performance at the port of Mombasa and increases customs marine unit performance because customs staff are given targets to meet in order to commensurate to the compliance level on trade facilitation. It also established that increased number of people understand the role played by customs enforcement in customs marine unit operations and the importance of the staff's training, education and experience.

The study findings showed that sufficient training of staff in marine unit boosts the operations of Customs Marine unit. The study also established that international standard qualification and standards are adhered in course of selecting and training staff and that the level of education determines the competence level of staff. Finally incorporating multi agencies approach onboard increases the scope thus boosting marine operations, while incorporating four-legged officers more frequently improves performance of the Customs Marine Unit. These findings are supported by Atos (2012) who states that organizations have to change to keep in line with globalization trend

geared towards provision of effective run of international trade which depends on skilled service providers that work effectively i.e. shipping lines, port terminal, customs official and other agencies like rail and roads.

### **5.2.2 Marine Equipment Factors**

The research findings indicate that marine equipment factors significantly affect customs marine unit performance at the port of Mombasa as supported by the model by a factor of 0.472 or 47.2%. In, influencing customs marine unit performance with a unit increase led to an increase of 0.472 in marine performance. This implies that marine equipment was statistically significant and has a positive impact on customs marine performance.

The study further established that a common office for agencies involved and one command center is essential for customs marine operations. The study found out that use of up to date systems and modern technological tools affect marine operations and procurement of new efficient boats affects performance of custom marine performance. Barney and Clark (2007) support these findings as they posit that the dominant paradigm of a firm greatly lies on the strategic process of planning and that what differentiates the firms later on is their ability to innovate and strategies so as remain abreast in the market and industry.

### **5.2.3 Effect of Border Security Strategies on Customs Marine performance**

The study found out that, border security was the least significant factor in influencing customs cargo clearance with a unit increase in border security leading to a 0.437 increase in customs marine unit performance. The regression coefficient of border security and customs marine unit performance was positive ( $\beta=0.437$ ) although statistically significant ( $p$  value=0.000). The study reveals that for customs marine unit performance to be a smooth exercise border security must be actively be involved in the marine unit performance operations and both border security should be in constant contact with customs enforcement officers in order to ensure that any issues arising from marine unit performance are adequately addressed so as improve on surveillance. The study established that improved inter-agency patrols affect service delivery and that single command and surveillance center for all agencies affects border security operations. Further, it was established that engagements with sea users i.e. fishermen/community affects border security and that emergency response centers near or at marine border points affect operations. Finally, doing more of intelligence and targeting affect performance of the customs marine unit. The findings are

supported by Gibson's (2000) stakeholder theory which states that organizations should consider and address the concerns of individuals or groups that affect or may be affected by the organizations in its pursue to achieve their objectives.

### **5.3 Conclusions**

On human resource, the study concludes that sufficient training of staff in marine unit boosts the operations of Customs Marine unit and that international standard qualification and standards are adhered in course of selecting and training staff. The study concludes that the level of education determines the competence level of staff. Finally the study concludes that incorporating multi agencies approach onboard as well as incorporating four-legged officers more frequently widens its scope and affects the performance of the customs marine operations. Hence an increase in the human resources by one unit would lead to increase in customs marine operations by 0.341 units.

On equipment, the study concludes that a common office for agencies involved and one command center is essential for customs marine operations. It also concludes that use of up to date systems and modern technological tools affect marine operations and procurement of new efficient boats affects performance of custom marine operations. The study therefore concludes that an increase in equipment by one unit would lead to increase in customs marine operations by 0.472 units.

On border security strategies, the study concludes improved inter-agency patrols affect service delivery and that single command and surveillance center for all agencies affects border security operations. The study concludes that doing more of intelligence and targeting affects performance of the customs marine unit and that an increase in border security strategies by one unit would lead to increase in customs marine operations by 0.437 units.

### **5.4 Recommendations**

- i. The study recommends that the stakeholders should lobby for the government to allocate a common office for agencies involved and one command center. The institutions involved should develop dynamic policies to mitigate the external factors that might infiltrate to adversely affect their coordination efforts.
- ii. The study recommends that the stakeholders should be adequately trained since it was established that training of staff in marine unit affects its operations. There should be frequent sensitization programs geared towards improving overall performance of the organization.

- iii. The study recommends that government should adopt the latest systems and technological tools as it was established that use of up to date systems and modern technological tools affect marine operations. The new system should configure with the existing systems so as to enable ease of transformation with little integration costs as possible.

### **5.5 Areas for Further Research**

This research provides empirical evidence on the factors affecting customs marine unit performance at the port of Mombasa. However, the current study concentrated on only three factors namely; human resource capacity, marine equipment and border security strategies which accounted for 55.2% variation in Customs Marine unit performance at the port of Mombasa. This implies that these factors considered in the study are not exhaustive hence further research should be undertaken to establish how other factors affect performance of the Customs Marine Unit.

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## **LIST OF APPENDICES**

### **APPENDIX II: QUESTIONNAIRES**

Dear Respondent, My name is Captain Edward Talam. I am a student at the Kenya School of Revenue Administration (KESRA) Mombasa Campus, currently carrying out a study for the purpose of writing a research project as a requirement for the award of Post Graduate Diploma in Customs Administration. The research topic is **FACTORS AFFECTING CUSTOMS MARINE UNIT PERFORMANCE AT THE PORT OF MOMBASA**. You have been randomly chosen to participate in this study because of the importance of your information and you are politely requested not to write your name anywhere on this questionnaire. The information you volunteer will only be used for the purpose of this study and will be treated with strict confidentiality. Please feel free and answer all the questions honestly. Thank you in advance for your cooperation.

#### **INSTRUCTIONS:**

Please tick where appropriate.

After completing the Questionnaire, kindly return them at any of the Kenya Revenue Authority offices located at KILINDINI PORT.

This research work is intended to explore the general overview of the **FACTORS AFFECTING CUSTOMS MARINE UNIT PERFORMANCE AT THE PORT OF MOMBASA**. Kindly provide answers to the following questions against the most suitable alternative. (Responses will be treated with utmost confidentiality).

## APPENDIX II: QUESTIONNAIRE

### SECTION A: DEMOGRAPHIC INFORMATION

Please tick where appropriate.

1. Name (optional) \_\_\_\_\_

2. Occupation

Customs officer       Marine Police       PA officer     

3. Your experience in enforcement sector

<15 years       16-30 years       31-45 years       Above 46 years     

### SECTION B: HUMAN RESOURCE

Please express your opinion on the following elements of human resource by ticking (√) the case corresponding to the score you wish to attribute based on the following scale:

**1 = strongly disagree 2 = disagree 3 = neither disagree nor agree 4 = agree 5 = strongly agree**

	Human Resource	1	2	3	4	5
1	Training of staff in marine unit affects its operations					
2	International standard qualification and standards are adhered in course of selecting and training staff					
3	Incorporating multi agencies approach onboard increases the scope thus boosting marine operations					
4	Incorporating enforcement officer more frequently to improves performance					
5	The level of education determines the competence level of staff					

**SECTION C: EQUIPMENT**

Please express your opinion on the following elements of infrastructure by ticking (√) the case corresponding to the score you wish to attribute based on the following scale:

**1 = strongly disagree 2 = disagree 3 = neither disagree nor agree 4 = agree 5 = strongly agree**

	<b>Equipment</b>					
6	A common office for agencies involved is essential for customs marine operations					
7	One command center is key to marine operation					
8	Use of up to date systems and modern technological tools affect marine operations					
9	Procurement of new efficient boats affects performance of custom marine operations					
10	Contract based timely boat repairs improves efficiency					

**SECTION D: BORDER SECURITY**

Please express your opinion on the following factors of border security by ticking (√) the case corresponding to the score you wish to attribute based on the following scale:

**1 = strongly disagree 2 = disagree 3 = neither disagree nor agree 4 = agree 5 = strongly agree**

	<b>Border security strategies</b>					
11	Improved inter-agency patrols affect service delivery					
12	There is single command and surveillance center for all agencies					
13	Engagements with sea users i.e. fishermen/community affects border security					
14	Emergency response centers near or at marine border points affect operations					
15	Doing more of intelligence and targeting affect performance					

**SECTION E: MARINE OPERATIONS**

Please express your opinion on the following factors of customs management strategies by ticking (√) the case corresponding to the score you wish to attribute based on the following scale:

**1 = strongly disagree 2 = disagree 3 = neither disagree nor agree 4 = agree 5 = strongly agree**

	<b>Marine operation</b>					
16	The current Marine agencies are well coordinated					
17	Joint patrols are currently effective and satisfactory					
18	The current existing policy and Terms of engagement are sufficient					
19	Marine operation in the port is getting sufficient support from government					
20	Law infringement has been reduced due to marine unit activities					