

**EFFECTS OF MULTI-AGENCY COLLABORATION ON MARITIME
SURVEILLANCE ALONG MOMBASA COAST, KENYA**

BUKHALA LEVICTUS MAKWAKA

C153/OL/MSA/27473/2018

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF HUMANITIES
AND SOCIAL SCIENCES, DEPARTMENT OF PUBLIC POLICY AND
ADMINISTRATION IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE AWARD OF MASTER DEGREE IN PUBLIC POLICY AND
ADMINISTRATION OF KENYATTA UNIVERSITY**

MAY, 2023

DECLARATION

This research proposal paper is my original work and has not been presented for examination to any other university.

Signature.....

Date.....

BUKHALA LEVICTUS MAKWAKA

C153/OL/MSA/27473/2018 (Bachelor in Security Management and Policing Studies -
KU)

SUPERVISOR

This research project has been submitted with my approval as the university supervisor.

Signature.....

Date.....

DR. WILSON MUNA, PhD.

Department of Public Policy and Administration

Kenyatta University, Kenya.

DEDICATION

This project is dedicated to my mother, Elizabeth Aswani and my family for their endless support, love and encouragement. Secondly, to all maritime multi-agencies and all sailors onboard and ashore; men and women who tirelessly patrol our territorial waters to protect our nation against external aggression and in extreme situations, pay the ultimate price. Lastly, to my friends for their prayers and support throughout my study.

.

ACKNOWLEDGEMENT

I thank the Almighty God who gave me the opportunity and strength to pursue my studies to this

far. My utmost gratitude goes to my supervisor, Dr. Wilson Muna who guided, advised and positively criticised my research throughout the study. Special thanks and gratitude to my fellow Masters candidates in the department of Public Policy and Administration, for their persistent encouragement and valuable criticisms about the content, flow and meaning of this project. I am grateful to the faculty members at the department of Public Policy and Administration for their support throughout my studies. I will be forever be grateful to my wife, children and Commanders in the Ministry of State for Defence (MOSD) for giving me the opportunity and time to pursue my studies.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURE	x
ACRONYMS AND ABBREVIATIONS	xi
OPERATIONAL DEFINITION OF TERMS	xiii
ABSTRACT	xv
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the Study	1
1.1.1 Integrated Maritime Surveillance	2
1.1.2 Kenya’s Maritime Surveillance	4
1.2 Statement of the Problem	5
1.3 Objectives of the Study	6
1.3.1 Specific Objectives of the Study	6
1.4 Research Questions	6
1.5 Justification and Significance of the Study	7
1.5.1 Justification	7
1.5.2 Significance of the study	8
1.6 Scope of the Study	8
1.7 Limitation of the Study.....	9
1.8 Organization of the Study.....	9
CHAPTER TWO	10
LITERATURE REVIEW	10
2.0 Introduction.....	10
2.1 Empirical Review	10
2.1.1 Maritime Surveillance.....	10
2.1.2 Organization Structure on Multi-Agency Collaboration and Maritime Surveillance.....	11

2.1.3 Staff Competency on Multi-Agency Collaboration and Maritime Surveillance	16
2.1.4 Information Technology on Multi-Agency Collaboration and Maritime Surveillance.....	20
2.1.5 Information Sharing on Multi-Agency Collaboration and Maritime Surveillance.....	23
2.2 Summary of the Literature review and Research Gaps	26
2.3 Theoretical Framework	28
2.3.1 Porter’s Five Forces Theory	28
2.3.2 Securitization Theory.....	31
2.3.3 Regional Security Complex Theory (RSCT)	32
2.4 Conceptual Framework	34
CHAPTER THREE.....	36
RESEARCH METHODOLOGY	36
3.1 Introduction.....	36
3.2 Research Design.....	36
3.3 Category/Variable of Analysis.....	36
3.4 Site of the Study.....	37
3.5 Study Population	37
3.6 Sample Size and Sampling Technique	38
3.6.1 Sample Size	38
3.6.2 Sampling Technique	39
3.7 Research Instruments	40
3.7.1 Pilot Testing	40
3.7.2 Research Instrument validity	41
3.7.3 Reliability of Research Instruments.....	41
3.8 Data Collection Procedures	42
3.9 Data Analysis	42
3.10 Ethical Considerations.....	43
CHAPTER FOUR	44
DATA ANALYSIS, PRESENTATION AND DISCUSSION.....	44
4.1 Introduction.....	44

4.2 Descriptive statistics.....	44
4.2.1 Rate of response.....	44
4.3 Reliability of Research Instrument.....	45
4.4 Biographic information	45
4.4.1 Demographic Profile of the Respondents	45
4.4.2 Respondents' gender.....	46
4.4.3 Academic level of respondents.....	46
4.5 Descriptive Statistics	48
4.6 Descriptive of Staff Competence	51
4.7 Descriptive of Information Technology	56
4.8 Descriptive of Information sharing	60
4.9 Descriptive of Maritime Surveillance	64
4.10 Inferential statistics	69
4.10.1 Multiple Linear regression	69
4.11 Analysis of Variance (ANOVA).....	70
4.12 Significance of Co-efficient Analysis.....	71
CHAPTER FIVE.....	74
SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATIONS	74
5.1 Introduction.....	74
5.2 Summary of Findings	74
5.2.1 Organization structure.....	74
5.2.2 Staff competence	75
5.2.3 Information technology.....	77
5.2.4 Information sharing.....	78
5.3 Conclusions.....	79
5.4 Recommendations	80
5.5 Suggestions for Further studies.....	82
REFERENCES	83
APPENDICES	90
APPENDIX 1: Letter of Introduction.....	90
APPENDIX II: Research Questionnaire.....	91
APPENDIX III: List of Maritime Multi-Agencies of Study Findings	99

APPENDIX IV: NACOSTI Permit	100
APPENDIX V:Kenyatta University Approval of Project Research Letter	101
APPENDIX VI:Kenyatta University Research Authorization Letter	102
APPENDIX VII: Ministry Of Interior And Coordination Authorization Letter.....	103
APPENDIX VIII. County Government of Mombasa.....	104
APPENDIX IX: County Director of Education Authority Letter	105
APPENDIX X: Correlation and Regression Analysis.....	106
APPENDIX XII: A Map of Mombasa County	107

LIST OF TABLES

Table 3.1: Target Population.....	38
Table 3.2: Sample Size	39
Table 4.1: Response Rate.....	44
Table 4.2: Respondents' age	45
Table 4.3 Gender of the respondents	46
Table 4.4: Level of Academic	47
Table 4.5: Respondents response on Organization structure	48
Table 4.6: Respondents response on Staff competence.....	51
Table 4.7: Respondents response on Information Technology.....	56
Table 4.8: Respondents response on Information sharing	60
Table 4.9: Respondents response on Maritime surveillance.....	64
Table 4.10: Multiple regression	69
Table 4.11: ANOVA.....	70

LIST OF FIGURE

Figure 2.1: Conceptual Framework	35
--	----

ACRONYMS AND ABBREVIATIONS

AIMS	Africa integrated maritime strategy
AIS	Automated identification system
CCTV	Closed circuit television
CISE	Common information Sharing environment
CSSRS	Commercial surveillance ship reporting systems
CEMZA	Combined exclusive maritime zone of Africa
DSC	Digital selective calling
EEZ	Exclusive economic zone
EMSA	Europe Maritime safety agency
EU	European Union
IGAD	Intergovernmental Authority on Development
IMO	International Maritime Organization
IMS	Integrated maritime surveillance
ISO	International standards operations
IUU	Illegal unreported unregulated
KCGS	Kenya Coast Guard Service
KEMFRI	Kenya Marine and Fisheries Research Institute
KMA	Kenya Maritime Authority
KMPU	Kenya Maritime Police Unit
KN	Kenya Navy
KSL	Kenya Shipyard Limited
LRIT	Long range identification

ME	Maritime Environment
MITAGS	Maritime institute of training and graduate studies
MSS	Maritime security strategy
MSSIS	Maritime safety and security information system
NATO	North Atlantic Treaty Organization
NIS	National Intelligence service
ODPP	Office of the Director of Public Prosecution
RECS	Regional Economic Communities
ReMIX	Regional Maritime Information Exchange
RMCC	Regional Maritime Coordination Centre
SAR	Search and Rescue
SDG	Sustainable development goals
UNCLOS	United Nations Convention on Law of the sea
UOG	Unconventional Oil and Gas
VHF	Very High frequency
WPNS	Western Power Naval Symposium

OPERATIONAL DEFINITION OF TERMS

- Collaboration:** it is a working practice whereby people work together for a common objective to achieve organizations goals through exchange of information, information sharing by teams and networks.
- Continental shelf:** It is unnoticeable slope which is normally between the shoreline and the point where the depth of the super adjacent water, it contains past territorial sea where seabed and subsoil of sub marine areas stretch.
- Isthmuses:** A narrow belt of land that links two larger landmasses and divides two bodies of water.
- Mission readiness:** It is how an organization is prepared to undertake a certain task.
- Maritime security:** Protection of vessels both internally and externally.
- Maritime space:** encompasses distribution of signals between navigation routes, canals, sheltered waters etc. of inexact area where various listed functions take place on surface or underneath.
- Maritime surveillance:** It involves general know how of maritime ecosystem to prevent possible eminent danger through premeditated mechanism enhanced by government.
- National security:** Shared freedom from fear and want, and the freedom to live in dignity.
- Organization structure:** It is a method used by companies to coordinate their activities of work and performance control.

Policy: Is a statement of intent and is implemented as a procedure or protocol.

Security: Search for freedom from threat and the ability of states and societies to maintain their self-governing identity and their functional integrity against forces of change, which they perceive as hostile.

Staff competence: observable skills that help personnel in an organization to contribute to the success of the organization.

Surveillance: Process of carefully watching a place or place that may be involved in a criminal activity.

ABSTRACT

The gap that exist in the reviewed literature depicts Maritime surveillance has attracted scant preview in local studies, therefore, it is in this context that this study intends to explore maritime surveillance. The study specifically addressed organization structure, staff competence, information technology, and sharing of information. This findings was aided by Porters five forces theory, Securitization theory and Regional Security Complex (RSCT) Theory. The study's scope was limited to Kenya's coastal region with a specific focus on Mombasa County. Cross sectional research design was employed using a target population of 294 participants from 7 maritime related organizations. The sample size of maritime multi-agencies was determined using Yamane formula as a representation of the target population. Structured questionnaires were used in data collection. Pilot study was not part of actual study; it was conducted at KEMFRI. Sampling Technique used was Stratified random sampling; the researcher engaged any willing staff in the target population organizations to answer questionnaires through drop and pick technique to provide ample time for participants to react to the questionnaire. Data gathered using open ended questions was presented precisely in themes or patterns. Information gathered was edited, cleaned, coded and entered using SPSS version 23 software and analysed using both descriptive and inferential statistics. To enable explanation of study findings, data was offered in distribution tables. Multiple regression analysis was utilized to draw link between independent and dependent variables. From the findings, majority of the respondents (82.6%) reported that Organization structure affects the speed of decision making within the maritime multi-agency. There were factors that inhibit multi-agency collaboration and maritime surveillance along Mombasa coastline, Kenya. The study therefore recommends the government to support the implementation of the maritime - multiagency policy framework to address Ad-hoc participation by maritime multi-agency. This will reduce inefficiency when responding to situations/disasters at sea and advocate for terms and conditions of service (TCS) for multi-agencies personnel with an aim of operationalizing a fully-fledged maritime multi-agency for efficient and effective administrative systems for service delivery in both maritime business and blue economy sphere. It also recommends that proper monitoring and evaluation mechanisms be implemented with sufficient resources to ensure that maritime surveillance is efficient and effective. Result showed that increase in presentation by one unit would have a corresponding unit in information technology and information sharing equivalent to 0.041 and 0.371 units respectively.

In addition, the study also conducted a regression to determine the relationship between dependent and independent variable. The value for information sharing was $\beta=0.371$, $p<0.001$. This implies that 37.1% of the change in maritime surveillance was caused by information sharing.

From the study, it was apparent that organizational structure affected the speed and accuracy of decision; learning and growth culture within organization was influenced by efficiency of information exchange within the multi-agency. Empirically the study affirmed information technology, information sharing, staff competence a contribution on maritime (senior level and supervisors) in aligning employees' tasks based staff abilities and competency by establishing efficient information sharing systems hence enhancing efficient and effective maritime surveillance.

CHAPTER ONE

INTRODUCTION

This chapter present contextual of the study, statement of the problem, objectives of the study, research questions, Significance of the study, Scope of the study and Limitation of the study related to Multi-agency collaboration and maritime surveillance in Mombasa coast, Kenya.

1.1 Background of the Study

Maritime space occurs in a setting of territorial waters, contiguous zones, and exclusive economic zones. However, the terminology does not consist lake or river boundaries, which are considered in land boundaries context (Mark, 2001). Marine spaces has been considered to be physical media where agents network and project their interest to attain their goals. Oceans and seas are considered significant in international politics apart from international society development (Marcelo, 2021).

According to (Tomasz, 2019), globally, maritime space covers 72% of the earth, maritime produces 60% and carries 90% of world's trade. Oceans and seas are most important elements of transportation infrastructure, economy and ecosystem in the world. Oceans also play a substantial political role symbols of cohesiveness of interests among different continents states. Maritime domain is Africa's lifeblood of the economy. Pursuant to (Spotlight, 2019) whether littoral or landlocked, the expression "No shipping, no shopping" is true for every country in the world. The phrase is key to both food security and food sovereignty. Apart from goods coming into African ports, a remarkable quantity is similarly exported. Equally, export of finished merchandise, manufacturing and exportable craftsmanship sectors is on the rise. Important for effective worldwide maritime trade is secured maritime transit routes in integrating products across

international marketplace. Deep-sea is significant to Africa's prosperity progress (Spotlight, 2019).

Locally, Kenya is strategically placed in terms of major maritime trading routes due to the comparative advantage of the location of Mombasa. As a result, many major shipping companies are represented in the country, which are responsible for carrying Kenya's foreign trade. It is apparent from the aforesaid that Kenya has quite numerous maritime activities, this also reflects the importance of these maritime activities not only to Kenya but also to her neighbours (Muindi, 1987).

1.1.1 Integrated Maritime Surveillance

Integrated maritime surveillance aims to provide collective means to share evidence and records of ocean matters pertaining to diverse facets of sea observation for example border control, oceanic pollution, sea environment, fisheries control, general regulation implementation and sea defense. The development of marine economic activities depends greatly in protected, safe and well regulated aquatic environment is also essential for. According to (UNCLOS, 2017) integrated maritime surveillance entails two pertinent issues of maritime reconnaissance: the provisions on Maritime Zoning and the notion of the nationality of ship. Pursuant to UNCLOS (Articles 24 & 25), a Coastal State has the exclusive right to undertake watching and surveillance within its territory including its territorial sea, which, may extend up to 12 nautical miles (nm) from the 'baseline'. A state's autonomous rights vary, across the nautical zones. Maritime Jurisdictions as provided for in UNCLOS, a Coastal State has special privileges to undertake monitor and scrutinize the sea on matters touching economic corruption and discovery of EEZ. Subject to not interfering with the exercise of the freedom of the high seas by ships flying a foreign flag have the implied right to undertake monitoring and surveillance, an

important foundation for oceanic investigation for all States in the high seas,. Search and Rescue (SAR) regions, with purely functional purpose and no association with ocean-going regions.

Surveillance structures and procedures are fundamental in building of circumstances experienced at sea, either evidence is not provided under a reporting guidelines by organization purposefully or not, in respect of maritime security. Smaller vessels like boats are not entitled to a reporting organisation.

Surveillance systems include visual sightings, still cameras, Commercial surveillance and ship reporting systems, Automatic Identification System (AIS), Long Range Identification and Tracking (LRIT), Very High Frequency (VHF) Digital Selective Calling (DSC), radar and infrared imaging etc. Maritime security and surveillance is an overall term for the fortification of vessels both internally and externally (MITAGS, 2021). There is no national security without maritime security. Oceans and seas have long been vital for countries national security and economic growth.

Maritime space is an area that covers beyond the edge of a continental shelf to another edge of a continental shelf. It can be an area that covers a country's EEZ to another country's EEZ, which is determined by the beginning of a continental rise to another continental rise, of the high seas. (Ewan, 2010) Indicates, it is a conceptual separation of the earth's sea surface area by means of intergovernmental, physical patterns and processes of the earth principles. The principles bound zones of exclusive nationwide constitutional right over natural resources such as mineral, biological resources, including maritime features, limits and zones etc.

In providing solutions to threats experienced at sea, safe guarding the sea is fundamental. These threats are dispatched by illegal arms and ammunition, pollution at sea, piracy,

illegal fishing, sea hazards, drug trafficking etc. (Burger, 2015). Maritime Domain Awareness is an umbrella term used to classify issues in the maritime space that can negatively effect on state security, marine environment, monetary advancement, and human security. In order to achieve this milestone, securing maritime space through maritime surveillance is of key importance: therefore, the Regional maritime sector plays a major role in securing marine resources. There is need for regional governments to team up to accelerate the latent of nation's rich maritime resources as an trade integration, development and prosperity. The maritime council in regions aligned in IGADS agenda proposed during IGAD integrated maritime safety and security strategy 2017 talks in Addis Ababa on planning for government forum, development companions and their maritime sector to rationalize regional maritime trade barriers. According to (Egede, 2018), the benefits of maritime surveillance include job creation, coastal security, and safeguard of fisheries and heightened monitoring of offshore oil and gas resources which will enrich livelihood of impoverished coastal fishing communities.

1.1.2 Kenya's Maritime Surveillance

Kenya's maritime surveillance is enabled through lawful, secure and efficient data sharing across Maritime multi-agency. This is achieved through cooperation from relevant stakeholders multi agency departments e.g. Kenya Navy, Kenya Coast Guard service (KCGS), Maritime Police Unit, KMA, KRA, National Intelligence Service (NIS), Office of the Director of Public Prosecution (ODPP) among others. Through enhanced surveillance the maritime sector which is highly depended by Kenya's economic wellbeing of people will tremendously be improved.

Whilst most developed nations across the world have for a long time included maritime security in their security mandates, in Kenya inclusion of maritime security in the

national security mandates only began gaining unprecedented salience in the recent past. This is evidenced by recent institutionalization and launch of Kenya Coast Guard Unit at the Kenyan coast, a security unit entrusted with the responsibility of protecting territorial waters and Exclusive Economic Zones (EEZs) under Kenya jurisdiction. However, inland aqua ecosystems like Lake Victoria which equally need similar security institutions have seemingly been ignored despite the various challenges and insecurities faced in these water bodies by the surrounding residents, as observed by Smed (2016) and (Smed, U. T. & Wivel, 2017). This study therefore assesses the effect of multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya.

1.2 Statement of the Problem

Existing gap in the reviewed literature depicts Maritime surveillance has attracted scant purview in local studies, therefore, it is in this context that this study intends to explore maritime surveillance. To augment surveillance, there is critical need for maritime actors embrace partnership to bridge up the gap to set surveillance level. The maritime sector is a system consisting of the individual shipping, ports, marine and maritime business service industries, each of which comprise a diverse array activities.

Lack of effective surveillance at sea inspite-of maritime space and its eco system facilitating evenly spread of trade and commerce. No country is entirely self-sufficient therefore, it depends on maritime trade to sell what it has and buy what it needs. Maritime transport is the bed rock of global trade and economy. Volume of international trade in goods is carried by sea, which is higher in percentage approximated to be over 80% globally for most developing countries. With much hyped advantages and benefits of maritime sector, the maritime environment does not operate in isolation to avoid human interferences. The major problem that the maritime space encounter on its daily

operations include water pollution, piracy, inadequate budget allocations from the government, illegal business. Despite the above mentioned maladies, the maritime space contributes to dramatic development in living standards of millions of people living in abject poverty in recent years. This is critical for the achievement of the 2030 Agenda in terms of economic pillar for sustainable Development (Ki-Moon, 2016).

Most local studies such as (Busiega, 2016), (Njue, 2020), etc. focused on maritime security. Few or no known study has addressed maritime surveillance in the Kenyan Coastal region. The research intends to bridge information gap to explore the effect of multi-agency collaboration and maritime surveillance in Kenya's Mombasa Coast.

1.3 Objectives of the Study

1.3.1 Specific Objectives of the Study

This study is set to achieve;

- i. To establish the effect of organization structure on maritime surveillance in Mombasa Coast, Kenya.
- ii. To examine the effect of staff competency on maritime surveillance in Mombasa Coast, Kenya.
- iii. To find out the effect of information technology on maritime surveillance in Mombasa Coast, Kenya.
- iv. To determine the effect of information sharing on maritime surveillance in Mombasa Coast.

1.4 Research Questions

- i. What is the effect of organization structure on multi-agency collaboration and maritime surveillance in Mombasa Coast?

- ii. What is the effect of staff competency on multi-agency collaboration and maritime surveillance in Mombasa Coast?
- iii. What is the effect of information technology on multi-agency collaboration and maritime surveillance in Mombasa Coast?
- iv. What is the effect of information sharing on multi-agency collaboration and maritime surveillance in Mombasa Coast?

1.5 Justification and Significance of the Study

This study is important in improving efficiency and effectiveness in securing the maritime environment. It will be vital to Government, investors, Scholars and other People.

1.5.1 Justification

Maritime collaboration is important because it enhances efficiency, tasks will be distributed evenly to the teams in view of the objective to be achieved. It marks as a sign of effective teams as it puts forward the best of teams, problem solving and break down barriers such as piracy, human trafficking etc. is achieved by partnership of multi-agency. If not managed well, maritime surveillance is a significant threat in Mombasa Coast, Kenya and across the East African region. Even with the general perception that Mombasa is predominantly a County of tourism and maritime businesses, the agricultural sector comes in handy as an important component in the socioeconomic development wheel. Mombasa County bets on the maritime sector to decrease youth unemployment. It projects to train 250 seafarers, in a project funded by the devolved unit's Elimu Fund. Money was allocated to train seafarers at Bandari Maritime Academy, so that ports, logistics, shipping and other maritime avenues create unlimited potential in jobs provision.

This study was conducted in Mombasa County because it hosts most maritime organizations' headquarters and the fact that the city is surrounded by the Indian Ocean and a coralline island in a bay of the Indian Ocean located. Kenya facilitates and promotes both global and regional maritime trade as it acts as the gate way for East and Central Africa for littoral and landlocked countries namely: Ethiopia, Uganda, Burundi, Sudan etc. hence, and the need for this study. This is because multi-agency collaboration is linked to maritime surveillance.

1.5.2 Significance of the study

The finding of this study will be vital to the government inline to policy formulation, policy evaluation and mechanism, implementation and regulation. The findings will be vital to the investors in provision of information on maritime space. In addition, the study will also equip investors with information on maritime security and policies governing maritime trade. Future scholars will make reference to the study findings on maritime surveillance related studies. Further, the study will equip academicians with knowledge concerning maritime environment and guide scholars on areas to focus on maritime policy development and implementation. The outcome of the study will also inform ordinary people about importance of maritime space/sector and policies governing maritime domain.

1.6 Scope of the Study

Effects of multi-agency collaboration and maritime surveillance outcome in Mombasa Coast, Kenya is paramount in the sense that surveillance along the Indian ocean has raised a lot of concern as it is integral part of maritime security as seen with ongoing Unconventional Gas and Oil (UOG) extraction by British Petroleum (BP) company, ENI –Kenya offshore exploratory United Nations and ANADARKO company which can

augment energy supplies in Kenya with viable gas energy resources at sea. The study involved collecting information from the target population of two hundred and ninety four (294) employees. This study also focused on Kenya Navy, Kenya Coast Guard service (KCGS), Kenya Shipyard Limited (KSL), Kenya Maritime Police Unit (KMPU), National intelligence Service (NIS), Office of the Director of Public Prosecution (ODPP) etc. as multi-agency actors in maritime space. The study sought to pursue multi-agency collaboration and maritime surveillance. The independent variables used in the study are; organization structure, staff competency, information technology and information sharing respectively.

The study dwelled on primary data which was collected by means of structured questionnaire for a duration of one month. The research findings formed a basis to inform on further actions and policy-level interventions towards addressing maritime surveillance in Mombasa coast and across Kenya's territorial waters.

1.7 Limitation of the Study

The investigator was not trusted with information from the respondents. To address this anomaly, he presented the research authority letter from Kenyatta University to the respective personalities in the institutions and assured them of study findings being strictly for educational reasons in order to clear out their fears.

1.8 Organization of the Study

This work was designed in three sections; the first section focuses on background of the study, problem statement, study objectives, research questions, justification, significance, scope and limitations of the study. The second section reflected conceptual framework, empirical and theoretical review deliberated under of the study. Third chapter focused on the research methodology utilized in the study. It consisted research design, target

populace, sampling design and reliability and validity of research instruments, data gathering and analysis.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed empirical and theoretical literature in connection with the effect of multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya. The Studies were presented chronologically and knowledge gaps identified. Further, the study presents how the gap was handled in the current study.

2.1 Empirical Review

This section is about real studies carried out in maritime sphere and will cover organization structure, staff competency, information technology and information sharing on multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya.

2.1.1 Maritime Surveillance

According to (Lim J. I., 2007) effective surveillance of the global waterways although attaining “sea control” of the global commons is about the capability to detect, watch anything sailing at sea at any moment. Therefore, nations achieve more through international organization to plan and leverage local maritime strategy, through information sharing network across maritime multi-agency.

Sustenance of users by offering better-quality considerate and quality monitoring of fishing, marine pollution, the marine environment, and support to maritime global

organizations is enhanced by maritime surveillance in accordance (EMSA, 2018). Vessel transiting in sea location when thought to be drift after they lose contact, based on last known coordinates. Vessel over large areas are made available for tracking with the help of SAR radar satellite pictures. Vessels operating from uncontrolled areas at sea are highly visualized using resolution optical images that provide valuable insight. Maritime act is put into practice through incorporating varied tasks such actions to avert: ocean going criminal activities, sea incidences, marine pollution, illegal fishing, armed robbery, trafficking and smuggling of illegal imports, piracy etc.

To address highlighted crimes, it will be in order to prompt responsive intelligence and operational coordination, as directed by decision makers supported by appropriate maritime law and moulded by strategy-driven policies, information management, intelligence processing, information sharing, and sense making enable MDA to be achieved.

2.1.2 Organization Structure on Multi-Agency Collaboration and Maritime Surveillance

A UN expert team in charge with IMO is a team has a responsibility of monitoring and supervision of shipping industry. The UN conference agreement from Geneva in 1948 led to the creation of the IMO, which was created 10 years later and conducted its inaugural meeting in 1959.174 nations and 3 associate members make up the IMO (IMO, 2015). Its main objective is to establish and maintain a comprehensive regulatory framework for shipping, marine well-being, environmental concerns, policy matters, technical teamwork committee, maritime security and shipping effectiveness etc. Several sub-committees' work is supported by the primary technical committees (IMO, 2015). Five committees handle the business of the IMO, with the help of technical subcommittees. Observer

status is provided to eligible non-governmental organizations and other United Nation organizations who watch proceedings of the IMO. A permanent secretariat of personnel who serve as representatives of the IMO's members supports the organization. The IMO is divided into a number of sections, including ones for conference planning, environmental protection, and marine safety. There are five major IMO committees: the facilitation committee, the legal committee, the technical cooperation committee, and the maritime safety committee. Several subcommittees' work is supported by the primary technical committees (IMO, 2015).

The naval division of the Kenya Defence Forces is headquartered in Mtongwe with its fleet at Mkunguni jetty. Mtongwe Naval facility is the Kenya Navy's largest base. Manda Bay is the second naval facility situated in Mokowe, Lamu. Shimoni, Shella, Canon Point, Msambweni, Malindi, and Kilifi are among the locations where the navy maintains ocean going surveillance activities entitled Marine Surveillance Radar stations (MASURA). The 66 Squadron, 76 Squadron, and 86 Squadron are the three fighting squadrons and a logistical support squadron that make up the fleet. They are all assisted by the Fleet Maintenance Unit, the Special Operations Squadron, and the newly created Marine Ranger Regiment (Kenya Navy, 2020).

The Kenyan Constitution of 2010, the Maritime Zones Act of 2012, Environmental Management and Coordination Act (EMCA) of 1999, as well as the UNCLOS and other local statutory frameworks. Ungwana Bay is a historical bay that formed Kenya's maritime zones. Maritime zones include coastal zone, territorial sea, contiguous zones, EEZ and the continental shelf. Land include a certain area of natural deposits either on surface or below it (Constitution of Kenya, Article 260, 2010).

In 1968 other reserves, the Watamu and Malindi Marine parks were formed, currently there are several marine nation-wide parks and marine countrywide reserves as designated under reserved sea life areas pursuant to (Kenya Wildlife Service, 2017). Whereas fishing is completely prohibited in maritime parks, it is legitimate in marine reserves under certain restrictions. According to (Kawaka et al., 2015), local communities of artisanal fishers in Kenya were dissatisfied with the negative effects of marine parks, which prompted the establishment of locally managed marine areas (LMMAs) ad hoc committee to protect fishing sector and aquatic resources to provide a variety of income opportunities.

Kenya has ratified an ample number of international treaties such as UNCLOS and the Maritime Labour Convention, 2006. Signed multilateral accords e.g. the Djibouti Code of Conduct, Indian Ocean agreement on Port State Control, 1998; 2009 and the Southern Indian Ocean Fisheries Agreement, 2006. Among the domestic legal and institutional frameworks that control Kenya's maritime industry are those related to maritime governance, commercial shipping, fisheries, maritime zones, petroleum exploration and production, and environmental management and coordination (Constitution of Kenya, Article 260, 2010).

In Kenya, single-sector regulatory framework is puzzling since it has led to a plethora of rules and contradictory mandates over the same problems that frequently do not align with the real physical environment and socioeconomic dynamics (Kibiwot, 2016). According to (NEMA, 2013) study, a number of agencies have long used uncoordinated sectoral methods to manage Kenya's coastal and marine resources, frequently doing so while working under contradictory legal frameworks. Lax regulation, resource overuse, and environmental damage has been facilitated by this situation (NEMA, 2013). The

current multi-agency approach to marine administration suggests dangers in overlap roles, as such, formulating good guidelines for continued growth of the maritime economy. This argues complete beneficial in order to guarantee collaboration among one another in order to ensure efficiency and effectiveness (KMA, 2017). Recent recommendations to establish KCGS and create a nationwide marine security policy suggest hazards are understood that methods are being developed to reduce them. Due to the volume of trade that uses the sea as a conduit, marine security and regulation implementation in the Indian Ocean are major world-wide significance. As a result of greater rates in transportation, commerce, and insurance costs, the Kenyan government has suffered economic losses as a result of a lack of policies to control maritime operations. Robert Kibiwot (2016) asserts that a comprehensive policy framework is necessary. It can only be accomplished by coordinating activities and initiatives related to coastal and marine environments using strong institutional and legal frameworks (KMA, 2017).

Seychelles created reforms focusing on a maritime sector trajectory that emphasizes protecting the fisheries sector, incorporating ocean-based technologies into the nation's energy plan, and modernizing specific port infrastructure (Aggrapine et al., 2014). It is possible that certain developed countries might follow all of the movements of the entire fleet of AIS-equipped ships in the globe with the help of global satellite coverage. With such broad coverage, merchant shipping information may be more accessible and early warning shots on suspicious vessels-of-interest (VOI) may be expanded. (Lim I. F., 2007) As a result, governments will have more operational and policy leeway to take advantage of the early warning period to prepare and coordinate response in the event that a VOI is discovered than was previously feasible.

The strategy execution initiatives inside Kenyan shipping businesses according to (Katana, 2017) concluded that are not being completely embraced. The enterprises should therefore work to heighten the elements that initiate strategy implementation in their organizations if they hope to develop and excel in marine surrounding that continually changes. Kenyan maritime regulators should also help the shipping businesses find executives with the knowledge and experience necessary to guide them in successfully implementing their strategy. The authorities should also guarantee that the regulations and procedures are put in place that can clearly explain who is to head these firms.

(Brewster, 2016) Commander of Australia's Border Protection Command, Rear Admiral Mike Noonan, recounts creating a Command for Marine Border as the maritime regulation administration arm. Then discussed tackling major maritime threats namely: aided prohibited migration, maritime counterterrorism, illicit, unregulated and unreported fishing. This can be curbed by establishing a close relationship between marine organizations, including utilization of fisheries smuggling activities for other reasons. The Command played part in bringing together and using various Australian authorities responses to maritime threat .National coordination requirement improved regional coordination between marine decision-making and enforcement organizations. Adoption of increased collaboration, especially with business and exchange of skills, data and information by Indian Ocean governments will result to 'A path to a workable Maritime sector economy.' As suggested by Dr. Lyndon Llewellyn.

According to (Thiele, et al, 2013) successful maritime cooperation includes agreements aimed to prevent duplication and enhance professionalism in the Gulf of Aden. The cooperation between Indonesia, Malaysia, Singapore, and Thailand was of a higher calibre and distinctive. The Djibouti Code of Conduct is a further instance of future

cooperation. The growing relevance of strategy structure implications in the organization pursuant to (Nguma, 2013) is underscored as being exceptionally significant to any company's performance. The Kenya Ports Authority's structural implications for implementing strategy were established by the study. The study was directed by a case study investigation that made use of unique facts that was collected using an interviewing guide. The qualitative information gathered discovered KPA's strategy implementation is directly impacted by organizational structure. Enriched worker morale, better communication inside the company, and a more productive workforce are some of the paybacks of effective organizational structure. According to the research, attention should be paid to change management challenges and effective organizational communication because KPA effectively rebuilt its organization.

2.1.3 Staff Competency on Multi-Agency Collaboration and Maritime Surveillance

Kenyan teenagers seeking work as sailors on board foreign ships were given training and skill development assistance under a memorandum of understanding (MOU) between the department of shipping and maritime and the department of state (Karigithu, 2019) the development of skills and linkages to employment possibilities in the shipping and marine industries will be guaranteed amongst these divisions through co-operation. Numerous inventiveness targeted at overhauling marine industry with an aim to enhance the social and economic prosperity of Kenyans, more popularly known as the blue economy are in progress.

Closer to the achievement of supportable blue growth, Kenya aims to become the development of marine skills, and young access to work prospects. The PS suggestion through a Memorandum of Understanding also guarantees qualified seafarers, who frequently have difficulties in satisfying pre-embarkation requirements, have access to

financial help. The agreement is a component of government measures aimed at giving Kenyan youngsters access to both domestic and foreign seafaring jobs. The president's announcement of the opening of the Maritime Academy in Mombasa served as a major catalyst for Kenya's reform efforts to position the blue economy sector. In order to satisfy the demands of the developing blue economy sector, the Bandari Maritime Academy seeks to increase the number of skilled seafarers in Kenya and the region at large (Karigithu, 2019).

The observable, measurable estimates that show the level of accomplishment attained by a person or a company are referred to as indicators of work performance. They consist of the type and volume of labour, as well as originality and efficiency. According to others, the nature of the occupation is a measurement of task performance that is often attained by physically studying the products, getting feedback from customers through surveys, and statistically sampling out products. The quantity of things that are rejected and redone work is used to determine the type of work. By counting the number of goods produced daily, weekly or monthly the amount of effort is approximated. Other metrics, such as compliance level, expert opinion, and dependability, are used to determine the type of job (Lockwood & Ward, 2015).

According to (Lockwood & Ward, 2015), When employees have a specific amount of work to complete, they must identify their needs, plan their actions, and decide what to prioritize in order to come up with strategies for increasing efficiency. This clearly results in better-quality organizational performance as well as personnel performance is obviously. Numerous writers and researchers have shown how a number of elements, including organizational culture, leadership, coaching, and employee participation, have individually and together influenced job performance in both favourable and bad ways.

(Robbins, S.P. & Judge, T.A. , 2016) defined Organizational culture as attitude of the employees inside an organization and includes the values and beliefs that set a business apart from competitors. Because it helps people adapt to achieving a company's goals, a healthy organizational culture improves employee performance. According to (Schein, 2013), a robust belief is essential to improving employee performance, which in turn develops organizational performance. Building human capacities that are beneficial to an organization has always been in accordance with the idea of competence. The idea of individual performance is closely related to competence. Knowledge, abilities, and character directly influences a person's performance. According to (Hameed, 2015), an employee's performance is mostly influenced by their personality, talents, and amount of effort they put into their tasks. While character and other associated factors will often promote logical performance Mutsotso (2014) asserts that talent and abilities will normally envisage task accomplishment. There are detailed essentials of reasonable performance, such as individual activity, which the capability and occupation fulfilment aspects endorsement is anticipated. Character and inspiration discrepancies in somebody's abilities, will demonstrate the difference in performance amongst employees. According to a study of middle level supervisors, competence, personality, and/or motivation were the main factors considered when judging managers' performance (Jayan, 2006).

The crew manning is one of the key elements of ship fleet operating. It is necessary to give a high level of personnel who have sufficient expertise and training to achieve a high operational level. For this reason, ship fleet operational issue solution (SHIPOS) is a substitute training solutions that involves approaches to determine successful skill building strategies by holding on line learning and practical training (Omer, et al., 2015).

SHIPOS operations in maritime observation and recording, including topics created strong communication relationship that is perpetuated through operational survey feedback. SHIPOS Centre is a notable example of a recent maritime monitoring effort. These activities give marine problems more area to cluster.

According to (Rustomiee, 2017), operationalizing maritime surveillance necessitates the development of hands on skills by workers for incumbent maritime industries future maritime needs like marine bio prospecting. Under developed states face a range of new educational, skill-development, and training challenges related to the maritime industry and experts in promoting interest; creating industries and creating business ties. This made more difficult by tiny nations with sparse inhabitants and large ocean regions. Unremarkable criticism has started to create the longer-term talents required for the blue economy. To further ocean knowledge, the Ocean College was created.

According to (Vatin, G. & Napoli, A., 2013), maritime safety and security depend on the ongoing monitoring of marine traffic, which is controlled by a number of human actors. Visual surveillance systems are in charge of administering likely threat notifications of mistrustful boats and status report. Users may more easily access knowledge thanks to the use of geo-visualization and visual analytics, which have shown to be particularly effective at handling large collections of heterogeneous data. Advanced visual analytics environments may seem too complex for end users to employ, necessitating the formalization of surveillance tasks and the provision of suitable analytical tools. In a high-level taxonomy founded on user skill-adapted geo-visualization findings, staff competency was proposed as a crucial component in the successful and efficient service delivery of visual surveillance duties in maritime surveillance. (Abdulahi, 2020) aimed to appraise the difficulties in securing Somalia's maritime borders for a lasting peace,

examine the socio-ecological problems the country is facing, analyse the impact of states and non-state actors on maritime border security in Somalia and identify the accomplishments made in preserving the country's peace and security. To collect primary facts from the respondents using a descriptive research methodology the study employed a questionnaire. In order to create lasting peace agreement, the outcomes highlighted substantial hurdles in capabilities structure and called for a more complex collaboration between Somalia and other players, both states and non-state, to secure the porous maritime boundaries.

2.1.4 Information Technology on Multi-Agency Collaboration and Maritime

Surveillance

In determination to discontinue illegal maritime traffic, naval officials intensify operations around the coast in order to control illegal trade, the Kenya Navy and KCGS boosted patrols in the Indian Ocean (Ahmed, 2020). These operations target, among other things, illicit fishing, drug trafficking, and marine pollution. At least Sh10 billion in lost income is thought to result from unlawful and lawless activity along Kenya's coast each year. KPA serves as an advisor to the Coast Guard technical committee, where it is a member.

The marine agency is responsible for ensuring the security of the nation's territorial waters, protecting the ports, and preventing the discharge of hazardous waste and pollutants into the ocean. The Coast Guard's job is to make sure that all boats, seafarers, and other sea users are properly licensed for any employment, pleasure, or commercial water travel as per President Uhuru Kenyatta's directive. Services for search and rescue have a further role in preventing unlawful business operations including people

trafficking and illegal fishing. To assure rigorous monitoring of the coastal waterways, the Coast Guard set out on a quest to build a coastal surveillance system (Ahmed, 2020).

In order to combat marine crimes and make its infamously dangerous waterways safer for sailors, South Africa is utilizing contemporary technologies. The Maritime Domain Awareness of the nation is being improved, according to a research from the Institute for Security Studies (ISS). Thousands of boats regularly approach, traverse, or leave the maritime domain of South Africa due to the country's location at the convergence of the Atlantic and Indian oceans and astride the strategically significant Cape shipping route. While most are simply conducting trade, some are engaged in illicit fishing, poaching, smuggling, and trafficking, and if allowed to continue, they might represent a security problem (Reva, 2021).

Authorities in the nation can remotely track and decide whether to intercept suspected targets thanks to the country's techniques, including the South African Navy, Forestry and Fisheries, and the Environment department. By emphasizing places where illicit activity is most likely to take place and building a database of offenders to track down and punish, this aids in classifying patterns of criminal conduct at sea. The sheer number of ships at sea and the fact that some turn off the location transponders they are required by law to carry necessitate the use of integrated vessel tracking systems. By merging location and identification information obtained from radar imaging, observations made by coast watchers, patrol boats, and ship transponder signals sent by satellites with intelligence a mutual operational picture is created (Walker, 2020).

Synthetic Aperture Radar is removing the veil that night time and gloomy weather give to hide shady characters and criminal activity. This generates photos of the ocean regardless

of the time or weather, enabling the detection of dark targets vessels that have their transponders unlawfully turned off. As suspicious ships are found and monitored, analysts calculate the position of the danger ships if left unattended. When a vessel enters a prohibited area or behaves in a way that may be interpreted as criminal conduct, such as trans-shipping illegally obtained fish between two vessels at night or on the open seas, automatic notifications are sent out (Reva, 2021). However, there are two significant issues with this type of increased monitoring in South Africa. Over the coming years, its maritime security capabilities are probably going to deteriorate, making it challenging to maintain a constant and robust presence throughout its maritime area of jurisdiction because it won't have the funds to properly repair and maintain all of its vessels, especially its submarines and frigates. South Africa anticipates purchasing three inshore patrol vessels, albeit they may be the last given that the nation cannot now afford to make any fresh capital purchases due to the crisis (Walker, 2020).

The defense minister of South Africa declared in 2019 (prior to COVID-19 and the recession) that no replacement aircraft would be purchased and that the nation relates to budget cuts outside of the maritime security arena which will be forced to depend more and more on technological advancements in surveillance. This is certain given the dearth of maritime patrol aircraft in South Africa's air force. South Africa and other marine regional players need to work together and coordinate on this. With less resources, departments with a marine mandate will be expected to accomplish the same amount of work, if not more (Walker, 2020). By opening a training centre to improve the competence of marine security implementation, Kenya intensified its fight against cross-border organized crime within its land boundaries. In order to teach maritime law enforcement personnel from the Kenya Coast Guard Service, Kenya Navy, etc. on how to

board, search, and conduct seizures, as well as to increase the administrative capacity of maritime security, a building on land known as ‘Ship in a Box’ resembles a ship (Hunja 2021).

Kenya has been dealing with crimes which include: terrorism, the spread of firearms, international crimes, piracy, illicit trade in wildlife and narcotics facilitated by sea. With increased training capacity for enforcement agencies, Kenya will strengthen its ability to combat the vice. The simulator (ship in a box) will give the Coast Guard and other maritime organizations training in boarding procedures while performing inspections aboard merchant ships that is very similar to real-world experience (Hunja 2021).

Member governments are assisted by the Global Maritime Crime Programme of UNODC in augmenting maritime regulation implementation capabilities to fight prohibited happenings at sea. The college had inadequacy of training facility, but when it is installed, it would raise teaching quality and boost the economy of the nation as purported by players. There are around 3000 Kenyans registered as seafarers working on various boats and there are 9 million seafarers both locally and worldwide, which supports Kenya's desire to establish high standards of professionalism in matters pertaining to the blue economy and marine affairs (Macharia, 2021).

2.1.5 Information Sharing on Multi-Agency Collaboration and Maritime

Surveillance

According to (Galdorisi, 2014) as part of US strategy, information about ships, sailors, and cargoes is being produced and used to create Maritime Domain Awareness to effectively comprehend anything connected to the marine sector affecting well-being,

economics etcetera. MDA enables measures that eliminate threats to US national security interests by facilitating swift, accurate decision-making.

A global link for area-based naval establishment internationally broadcasting, identifying measures and notifying activities are just a few of the services offered by this company (Martins, 2014). To accomplish MDA, governments must share a focus for increasing maritime security through situational and threat awareness. It demands improved coordination and harmonization between various branches and agencies of the government as well as partnerships with the corporate sector. Given that international shipping is a major industry, partnerships are essential. Commercial information could be made public as it would enormously benefit the information exchange corporation of manufacturers' and shippers'.

The European Border Surveillance System (EUROSUR) has formed its regionally coordinated techniques to manage pertinent information related navigational safety in order to prevent undocumented immigration, decrease maritime fatalities, and improve safety in Europe sea and ocean environs (Barshefsky, 2016). Owing to the size of their EEZs and SAR regions, Australia and New Zealand have both enacted comparable MDA laws. WPNS created ReMIX detach sea/oceanic issues. Various governments obligations stresses the significance of maritime awareness in boosting maritime security through the collecting, processing, and distribution of facts that serves as the foundation for both military and law application operations involving maritime security agencies. These must adhere to the lawful parameters of maritime legal guidelines and should be seen in light of the all-inclusive interest in bettering our understanding of who is involved in what marine operations (Barshefsky, 2016).

States attempt to gather intelligence by gathering data that is widely defined or that may have been known before the event or action was done. The majority of maritime intelligence collecting is around the search for data that might be important for a country's security. What does a state need to know about another state's marine territories, or what further may be discovered about a state's maritime defense or offensive capabilities, are unsolved questions? Such knowledge empowers governments to make decisions about their naval defense (Hill, 2014).

Different research activities give rise to information gathering rights and duties. Hydrographic surveys, survey operations, and maritime scientific research are all mentioned in UNCLOS but none are defined. It might be claimed that information collection for military surveys and hydrographic surveys should be handled from sources of information collection different from military must be handled with a lot of caution since it has obvious military value (Hill, 2014). Tracing communication lines and lines and keeping an eye out for early warning indicators using radars is an example of simple surveillance techniques that can be used to acquire intelligence inside territorial oceans/seas under coastal state sovereignty. Before deploying different naval vessels, like speed boats, frigates and submarines, to sail the sea, the Navy may embark on reconnaissance in coastal regions (Beers, 2014).

It is almost impossible for outside countries to legally undertake intelligence collection operations within a coastal state's territorial waters. Since all ships from all nations are granted the right of innocent passage across these waters, each coastal state exercises autonomous regulation of its oceans, including the air space above it (Crahan *et al*, 2015). Only states with the means and ability to engage in intelligence collection would otherwise gain, hence the coastal state's exclusive interest rightfully wins on innocent or

not innocent transit (Crahan *et al*, 2015).Ships and planes are required under UNCLOS to cross the strait without stopping activity related to rapid customary means. One could argue as well as, leaving open the question of specific sailing vessels would gather information involving incidence radars. (Galdorisi, 2014).

Once more, it's feasible that this data may be gathered without having any discernible impact on the coastal state and still be considered to be within the bounds of the rights of transit passage. The restriction on conducting operations where consent is not issued by governments. Such surrounding should be used to moderate such a sweeping interpretation. A range of facts collection operations must not be used during 'regular' characterisation; rather, UNCLOS member states need to adhere in good in light of the power of country's security interpretations of permissible activities in the territorial sea should be in favour of the coastal state's exclusive rights (Galdorisi, 2014).

Military intelligence collecting sea going Intel must be administered by a legal framework that is related to it on a basis that is distinct in resource exploitation and information obtained being classified in nature, according to (Hill, 2014).

2.2 Summary of the Literature review and Research Gaps

This chapter highlighted the existing collected work in relation to the empirical review of the effect of multi-agency collaboration and maritime surveillance in Mombasa coast, Kenya. The importance of the four objectives were examined from a global viewpoint down to the research scope region in this chapter, which evaluated the literature in connection to them. The independent variables which were used were organization structure, staff competency, information technology and information sharing on multi-agency collaboration in Mombasa coast, Kenya while maritime surveillance was the

dependent variable. The conceptual framework, relationships between variables, and research gaps were also discussed in this chapter.

Despite the secondary contributions of the study, recommended in this chapter, there are a number of gaps which have not been filled and with limited scope. For instance, the study by (Njiru, 2020), the researcher did not mention the parties concerned with maritime security. In addition, the researcher also failed to explain how maritime safety, defense and the larger security will be achieved. The study further failed to establish how maritime security modalities will be put in place to curb maritime security.

According to (Charo, 2021) indicated lack of a long term nationwide blue print on danger in sea ongoing activities roadmap to address citizens needs to iron out persistent compromise oversensitive reactions among multi-agencies countrywide. If effected the impact will lead to fruitful working relations, delayed decision making, myriad maritime lapses an increase marine criminal activities. In enriching the weaknesses ratifies safekeeping of marine environs.

The study of (Mbithi, 2018) examined contribution of maritime security in the utilization of maritime resources in Kenya. However, the researcher did not mention how collaboration and coordination as a challenge by various maritime security multi-agency owing to conflict of interest could be addressed. Further, the researcher failed to iron out how poor integration of maritime policies can be addressed to enhance coherence in dealing with maritime insecurity.

(Shibalukha, 2015) analysed the native understanding and organization structures of marine resources among the Giriama community of North Coastal Kenya. His findings, suggested ecosystem monitoring and indigenou, natural assets, evaluation on indigenou

knowhow on early warning tools be covered when pursuing systematic anthropological studies. Advance studies into indigenous awareness of structures in the context of sustainable livelihood initiatives and appropriate technologies need to be carried out by researchers. Lastly, findings showed discrepancy in collaboration between the locals in the area and the agencies in place, in managing the maritime system affected its utilization and protection as well. From the above literature, there is need for a comprehensive study research to be carried out to further fill discrepancy on best practices associated with multi-agency collaboration and maritime surveillance in Mombasa coast, Kenya.

2.3 Theoretical Framework

Theories are framed to add knowledge to available knowhow in subject parameters of very important issues, several scenarios presents and expounds grey areas existing in the study Sekaran, (2015). This study will be built upon the under mentioned theories namely; securitization theory, regional security complex theory and porter's five forces theory to convey out the effect of multi-agency collaboration and maritime surveillance in Mombasa coast, Kenya.

2.3.1 Porter's Five Forces Theory

The purpose of this study is to support the effect of multi-agency cooperation and maritime surveillance in a combative operational environment. Theoretical framework is based on Michael Porter's Five Forces model, which recognizes and examines the five competitive forces that shape a company's blueprint to discover the strengths and weaknesses in maritime organizations arrangements by analysing level of competition, the attractiveness of a market, and its profitability, the model pinpoints five indisputable elements that help to shape the operating environment. The five factors included in this

research are the power of the buyer, the strength of the seller, the threat of replacement products, and industry competitiveness (Greenberg & Ortiz, 2016). The educated judgments every organization makes to comprehend in factoring areas impacting profitability with the use of the Five forces analysis include whether to enter a given market, whether to enhance capacity in a specific industry, and whether to build competitive strategies.

An inquiry instrument by (Ugur Yetkin, 2013) to thoroughly evaluate post-modern fleets despite the fact that the driving reasons for marine security are different from those of the business industry, he applies this model to analyse it (Ferdinand, 2014).

Globalization was greatly influenced by technological development, which led to an increase in information flow and maritime traffic. This calls for states to implement a maritime security strategy with an international perspective one that is restricted to their own internal territorial jurisdiction. According to (Ugur Yetkin, 2013), developing a sea going safety approach as a long term remedy that necessitates a vigilant examination on issues influencing the seafaring sphere. Also is essential that parties engaged in strategic planning are able to provide solutions to issues by having a thorough understanding of the changing aspects of the working surroundings. Yetkin examined decision made by future merchant marine to develop and execute a cooperative maritime security architecture that improves a shared global perspective with international positioning in order to deal with asymmetrical threats (Ferdinand, 2014).

By comprehending its changing aspects knowing which strength has significant impact on organization, the five forces assist strategists in evaluating an operational environment. Understanding these forces allows one to comprehend the strength

associated with each driving force while also assisting in the identification of the participants who play a part in each force (Bruno & Yao, 2015).

Defense organizations' personnel who influence how well the naval force can carry out its task, are the power of suppliers in (Ugur Yetkin, 2013) examination of postmodern fleets (product) through a steady supply of replacement parts, the defense industry assists in both the development of the fleet and the improvement of its operational capabilities.

He emphasises, without domestic defense industries, emerging nations must constantly rely on the importation of spare parts from foreign military industries to maintain and repair their seagoing warships. In this sort of situation, the armed forces sectors end up being quite solid and, as a result, they wind up dictating how effective the fleets of these nations are. Due to the inadequacy of easily accessible qualified professionals which results in a shortage of labour force power and the fact that there are numerous private sector job opportunities, many individuals choose to work for onto land formations rather than join the navy at sea. (Bruno & Yao, 2015).

In a marine setting, the product (mission achieved) by the navy determines the purchasing power of the consumers. The global public in various areas are only a few potential customers in the marine industry; the local end users who are ship agents and owners. The first customers are undoubtedly the citizens, who benefit from the marine security services supplied by the navy (Greenberg & Ortiz, 2016). This is due to their unquestionable ability, through their representative in the parliament, to set the money allotted to the navy. The navy's capacity to manage the budget dictates how well they can carry out their mission as the supplier of maritime security, despite the fact that they have no other option. Fourth street coverage, internet development, issues affecting the maritime domain were able to receive the necessary consideration and reaction

worldwide community urge strong fleets take responsibility. As a consequence, global public is a powerful customer in postmodern navies. The implemented measures entail those that secure the Sea Lanes of Communication (SLOC) to guarantee that ships can move through regions with maritime risks effectively (Greenberg & Ortiz, 2016). By adopting these steps, the navies support the activities of other purchasers, like ship owners and ship brokers, by fostering a sense of trust in them to keep up their shipping operations. If ship owners and agents choose to modify the route to avoid a high-risk location in the maritime territory, clear uptick in maritime lawlessness, basically define the cost of shipping, leading to an unheard-of increase in the insurance premium. (Ugur Yetkin, 2013) proposed that because governments in various settings had deficiency in the purchasing power will to influence the universal community's reaction, they lack the ability to make their own decisions and are forced to accept aid on the conditions of the more powerful state.

2.3.2 Securitization Theory

Midway through the 1990s, Barry Buzan, Jaap de Wilde, and other members of the Copenhagen School developed this idea. This theory contends that when events are seen as requiring rapid action and severe security, they become dangerous, threatening, and alarming, requiring prompt action and the implementation of suitable security measures (Stritzel, 2014). The conclusion is that security concerns should not merely be considered to be 'out there,' but rather ought to be defined as such by securitizing actors. People moving from one nation to another, for instance, may be a common event. Migration will go from a low priority issue to a high priority one, requiring the required security measures to mitigate it, such as guarding borders, if anybody views the act as a 'security danger,' as attitudes on the matter advance. The players who securitize the state are

frequently worried about its security and frequently concentrate on examining political and military stability.

Securitization, however, frequently extends beyond these constrained areas to cover additional risks that are not military in origin, such human security. Following that, the five sectors of the economic, sociological, military, political, and environmental have received the majority of attention from this theory's proponents. According to the primary premise of this theory, many behaviours that in certain cases may be considered normal become severe security challenges and are securitized in the framework of this research. For instance, (Illegal, Unreported and Unregulated) IUU and marine environment pollution, which for a long time were non-concern issues, have recently become major security concerns as a result of the securitization of the issues by various players like politicians, security experts, and environmentalists (Stritzel, 2014).

It is crucial to remember that people involved in securitization are not just politicians, per (Clara, 2020). The police, intelligence agencies, customs, immigration services, border guards, and the military are all security experts who contribute significantly to creating the security environment. They work in a security industry marked by rivalry for the 'correct' information on the danger and other related hazards, as well as competition for the 'right' remedy (Howell, 2020). The idea that migration, cyber security, marine, and other issues become security challenges and should be considered for securitization is supported by the analytical rigor of the securitization theory.

2.3.3 Regional Security Complex Theory (RSCT)

This study is based on subject theory advanced in 2003 by Buzan and Weaver work on Regions and Power focusing on The Structure of Global Security. The impression of safety area complexes covers security packaged real areas. Fear of threat never foldaway

over spaces and coercions as they are likely regional or cross border. With deep interactions among multi-agency across regions to facilitate surveillance which is a key area and significant for this study.

Securitization theory support the recommendation of the best way forward for a combined East African countries strategy to develop maritime policies to guide operations in the maritime domain. Integration contests will revolve around how best to reconcile top down maritime integration contained visions in the RECS and AU, through approaches incorporating the bottom-up realities of working among member states on issues touching on joint resource extraction, border delineation, facts distribution specifically sensitive statistics on naval capability. Reconciliation between the visions and realities is obliging interstate collaboration at the crucial stage of effecting maritime strategy, through creating and reinforcing a common unwillingness to review sovereignty to either pooling or sharing. The theory contains potentially transformative and inventive ideas like CEMZA, that need urgent and better research and implementation (Cavani, 2017).

Maritime safety conventionally refers to prevention and management of maritime natural disasters and threats while maritime security addresses threats caused by man-made activities. Maritime security threats can be brought by natural weather conditions such as floods, storms, hurricanes or man-made interventions such as access to sea denial by states or non-state armed groups, pirates, smugglers, poachers, polluters and illegal immigrants (Cavani, 2017). Maritime security includes resource utilization, protection of maritime trade, jurisdiction of accountable authorities and environmental protection. Security in the Maritime includes the performed military actions and other agencies involved in the protection and utilization of maritime environment. Maritime security is

also predicated on the concept of ocean governance where states accede to international agreements on secure exploitation of resources, protection of maritime environment and open access to international trade routes (Cavani, 2017).

2.4 Conceptual Framework

Figure 2.1 shows the conceptualized connection between the study variables and the indicator of each variable.

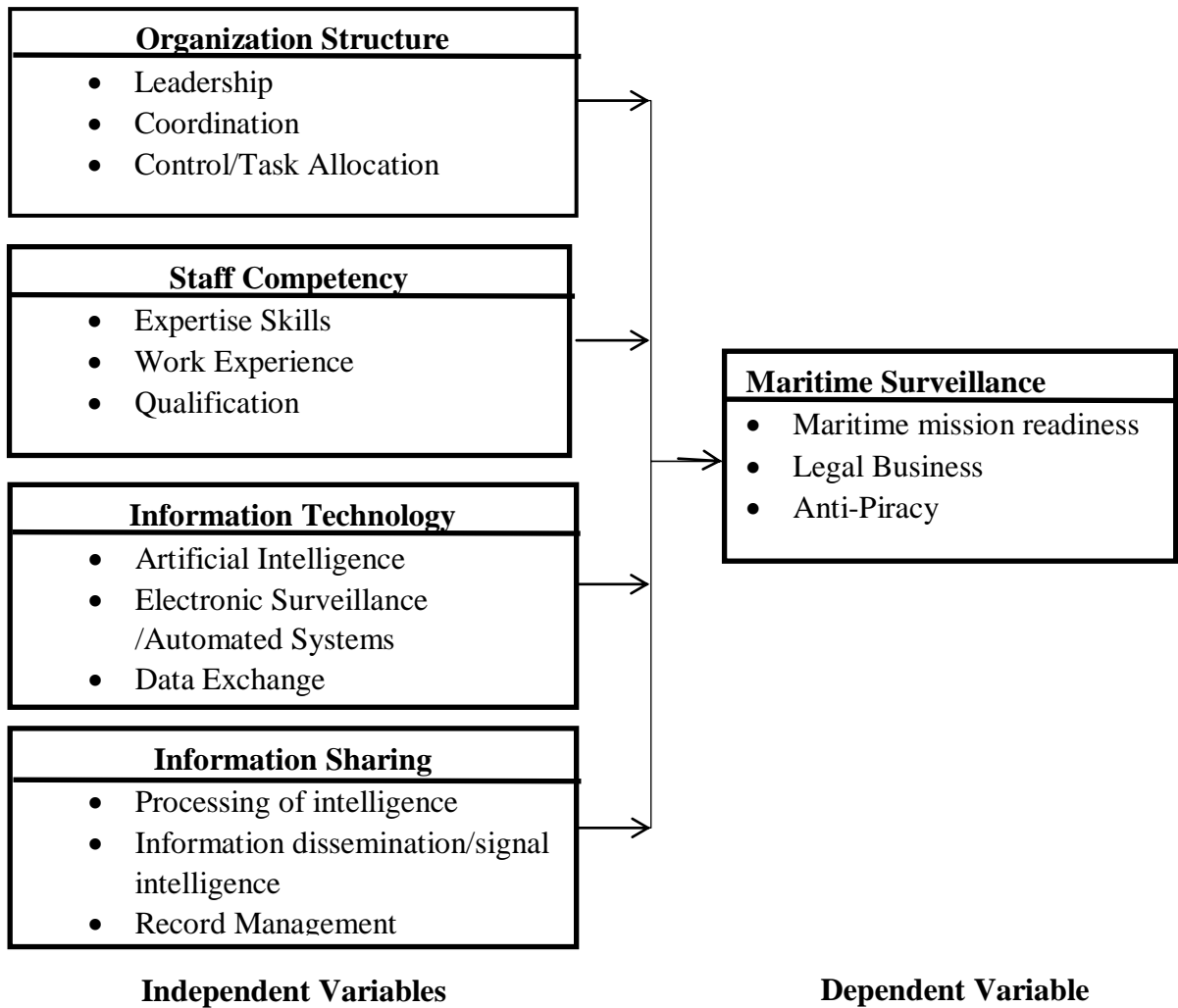


Figure 2.1: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research conduct was described in this section. It defined sample number, research tools, research design, target population, and sampling process, validity and reliability of research instruments, data collection procedure, data analysis techniques and ethical considerations.

3.2 Research Design

This study adopted a cross-sectional approach. Cross sectional approach are used to comprehend a phenomenon at a certain moment, according to (Kothari C. R. & Gaurav , 2014). A study's relationship between variables can be depicted using a cross sectional design when data are collected over a brief period of time (Fowler, 2016). The preferred design would require researching the opinions of staff members at KMA, KPA, Kenya Navy, KRA, Kenya Coast Guard Services (KCGS) and Kenya Maritime Police Unit (KMPU). The data received from the county representatives indicated above should provide a fast overview of the impact of public involvement on the integrated development plan for 2013–2017 in Kisumu County, Kenya.

3.3 Category/Variable of Analysis

The study assessed the effect of multi-agency collaboration and maritime surveillance in Mombasa Coast. The independent variables of the study was organization structure, staff competency, information technology and information sharing. The dependent variable of the study was maritime surveillance.

3.4 Site of the Study

Mombasa county has advantageous location on the Indian Ocean, Mombasa has historically served as a major commerce hub. The Port of Mombasa, which has two oil terminals, 19 deep water berths, and two more berths that are almost finished, is a significant economic centre in East Africa. The port and road are connected to the interior by standard gauge rail. Currently, the port does not offer regular passenger service; nonetheless, foreign cruise ships frequently call at the port (Ahmed, 2020). This study concentrated on certain maritime ecosystems and their local surrounds rather than covering all of Kenya's water basins. Mombasa county was chosen because its economy heavily depends on the marine environment and the ocean. Additionally, due to its size and position, it must deal with a variety of problems that are of relevant to this research, including pollution brought on by humans and security threats from both internal and external aggressors. As a result, these elements have an impact on the maritime commercial activity in the area, and subsequently, Kenya's blue economy.

3.5 Study Population

A target population is the whole of the aspects of concern that the researcher will study (Kothari C. R. & Gaurav , 2014). The study's target demographic included 294 individuals who work for the KMPU, KN, KPA, Revenue Authority, Coast Guard Services and Kenya Maritime Authority and maritime operations departments, respectively. The Kenya Maritime Authority was used to determine the overall number of personnel as of December 2021. Because they are familiar about the impact of multi-agency coordination and maritime surveillance on Mombasa Coast, the researcher will

focus on the maritime professionals. Table 3.1, which follows, tabulates this data in more detail;

Table 3.1: Target Population

Maritime Agency	Population	Percentage (%)
Kenya Maritime Authority	18	6
Kenya Ports Authority	33	11
Kenya Navy	141	48
Shipyards Limited	28	9
Revenue Authority	14	5
Coast Guard Services	29	10
Kenya Maritime Police Unit	31	11
Total	294	100

Source: KMA (2022)

3.6 Sample Size and Sampling Technique

According to Rahi (2017), sampling is the process of selecting a subset of the population to study. The sample size designates a portion of the population which provides the full range of demographic components from data gathered.

3.6.1 Sample Size

It is a subset populace specifically identified to be a representation of the total population target. Sample size was examined as the number of components that would be involved in the study model. Validity and dependability data are attained when the sample size is big enough to be considered optimum (Wiersma & Jurs, 2016). The study will select 74 personnel who will comprise of personnel based in maritime operations departments at KMA, KCGS, KRA, KN, KPA and KMPU respectively. The following will be calculated

using the Yamane (1967) formula at a 95% level of confidence and a 0.10 level of significance;

Yamane (1967) formula:

Where n = Sample size

N = Population (294)

e = level of precision (0.10)

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

$$\frac{294}{1 + 294 (0.10)^2} = 74$$

Table 3.2: Sample Size

Maritime Agency	Population	Sample Size	Percentage (%)
Kenya Maritime Authority	18	3	4
Kenya Ports Authority	33	9	12
Navy	141	29	39
Shipyards Limited	28	7	9
Revenue Authority	14	5	7
Coast Guard Services	29	10	14
Kenya Maritime Police Unit	31	11	15
Total	294	74	100

Source: KMA (2022)

3.6.2 Sampling Technique

The research participants were chosen using a stratified random technique. The population's diverse groupings are divided into homogeneous subsets using this non-

biased sampling approach, and the sample is then chosen from each person while maintaining representativeness. The approach attained the necessary level of representation from the various research population subgroups. With the use of this method, sampling is carried out so either more or less sub-groups represented as final sample (Wiek & Lang, 2016). Simple random sampling will be utilized for each stratum.

3.7 Research Instruments

Information on independent and dependent factors were gathered from people working in marine operations departments using structured questionnaires from Kenya Maritime Authority (KMA), KPA, Navy, KRA, Coast Guard Services (KCGS) and Kenya Maritime Police Unit (KMPU) respectively. The questionnaire included questions that are closed ended graded from 1 - 5 in order to quantify data (Kothari C. R. & Gaurav , 2014). The questionnaire approach was utilized because it is affordable, ensures anonymity, enables the use of standardized questions, provides respondents enough time to consider their answers, and is simple to use (Nayak & Singh, 2015). The questionnaire was structured in six major sections including; demographic characteristics; organization structure, staff competency, information technology, information sharing and maritime surveillance.

3.7.1 Pilot Testing

At the KEMFRI administrator's offices, a piloting data collection tool was used with 29 respondents (10% of the target population of 294). As a convenience to the researcher, the study questionnaire was pretested at the KEMFRI and was not to be used in the actual investigations, in order to reduce bias. The pilot study attempted to minimize likely mistakes, identify potential difficulties early and evaluate the research methodology. Second, it aided in determining whether the study's time, money, and material resources

are sufficient. Finding questions that were unclear or misleading was another advantage, helping to ensure that overall research objectives was met. Evaluation of validity and reliability of study tools using data was exercised during pilot study.

3.7.2 Research Instrument validity

Information gathering technologies assess what they are intended to achieve (Bryman & Bell, 2015). Research validity refers to the accuracy with which information intended to be gathered by the investigator may be acquired using data collection instruments. Validity is also established and specified in a way that makes it possible for a data collecting tool to get the necessary data. By sending the questionnaire to the supervisor, who will evaluate each item's utility in the tool and offer professional opinion to make it relevant to the research, the study employed content validity. Piloting the instrument will also enable the researcher to address any outstanding issues to actually begin. Sample and spherecity on the four independent variables ascertain reliability of the research instruments, the study will employ KMO and Bartlett's tests. Hair *et al.* (2015) place a strong focus on the need of using the KMO and Bartlett tests in research to evaluate concept validity and ascertain variable variability.

3.7.3 Reliability of Research Instruments

According to Bryman and Bell (2015), an information gathering instrument's dependability is determined by the consistency it exhibits when used frequently under similar conditions. The reliability, consistency, and trustworthiness of the study questionnaire will be evaluated by pre-testing. To determine reliability of questionnaire based on the study findings the entire contents of the questionnaire will be subjected to test using Cronbach's alpha test to ascertain internal consistency. Cronbach's test, which measures the consistency or dependability of a test scale, is given as a value between 0

and 1 (Cronbach, 1951). As a result, the reliability cut-off for this investigation was 0.7 and above. Sekaran & Bougie (2016) state that any reliability index more than 0.7 is deemed to reflect a sufficient degree of instrument dependability.

3.8 Data Collection Procedures

The researcher presented an introduction letter from Kenyatta University to Maritime multi-agency organization concerned (KMA, KPA, KCGS, KN, KRA and KMPU) asking for permission to conduct research before visiting the information gathering offices. The questionnaires were accompanied by an informed consent statement alerting the respondents about the study's goals in order to lessen suspicion and increase participation. The consent letter was presented to participants' and sought for permission to conduct the research and participants' were assured confidentiality of the data they supplied.

The participants had enough time to respond to the questions once administers them using drop-and-pick approach. Then, all surveys were promptly collected, reviewed for accuracy, and stored in a secure location for analysis.

3.9 Data Analysis

Multiple regression analysis will be carried out by the researcher.

The regression equation was:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Whereby:

Y= Maritime surveillance

β_0 = Current maritime surveillance position

X_1 = Organizational Structure

X_2 = Staff competency

X_3 = Information Technology

X_4 = Information sharing

$\beta_1, \beta_2, \beta_3$ and β_4 = determination of coefficients

ε = precision or error term

3.10 Ethical Considerations

Kenyatta University Mombasa Campus administration gave the study the go-ahead, and the management of the entities connected to marine surveillance indicated previously provided the go-ahead for data collection. Participants' were informed, consent was further obtained prior to data collection in order to collect data. Staff members, participating departments were informed that participation in the research was entirely optional and required them to complete an informed consent form. The researcher applied for a study authorization from the NACOSTI and was authorized to gather data from the public regarding the multi-agency collaboration and maritime surveillance in the Mombasa coast, Kenya.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

The study was concerned on multi-agency collaboration effects on maritime surveillance along Mombasa coast line, Kenya. This chapter contains four areas namely; analysis of collected data, data presentation, interpretation and discussion.

4.2 Descriptive statistics

4.2.1 Rate of response

According to table 4.1 below, the study's respondents were from institutions concerned with maritime sector. The sample size was 74 personnel. The researcher issued 74 questionnaires to the respondents. Out of these questionnaires, 69 were filled and returned. This therefore, meant that 69 of questionnaires were complete and formed the basis of data analysis in this study.

Table 4.1: Response Rate

Target Respondents	Successful Respondents	Response Rate (%)
74	69	92

Source: Research Data (2022)

In accordance to Mugenda and Mugenda (2003) a response rate of 50% is adequate, 60% is good and 80% is very good. Therefore, the respondents met a threshold for conducting

a research study whose response rate was 92% which was excellent hence, sufficient for drawing conclusions from the study findings.

4.3 Reliability of Research Instrument

The coefficient of internal consistency was used to measure the reliability of the questionnaire

used in this study. It was tested using Cronbach's alpha reliability coefficient. Pursuant to Wang and Su (2009), a Cronbach's alpha value equal or greater than 0.7 is observed to be a good internal consistency.

4.4 Biographic information

The research was interested in interrogating the general information of all the respondents in regard to age, gender and level of academic attained.

4.4.1 Demographic Profile of the Respondents

This section presented the demographic characteristics of respondents, based on age. The study categorized the age of respondents as 18-25 years, 25-30 years, 30-35 years and over 35 years. The respondents were politely asked to indicate their age category. The results are as shown in the table below:

Table 4.2: Respondents' age

Age	Frequency	Percentage
18 -25 years	16	23.2%
25 -30 years	21	30.4
30 – 35 years	10	14.5%
Over 35 years	22	31.8%

Source: Research Data (2022)

From the table 4.2 above, the bigger population of the respondents was between 18 years and 30 years. Followed by respondents over 35 years and the least number was the respondents aged between 30 to 35 years with only 14.5%.

4.4.2 Respondents' gender

The respondents were also requested to indicate their gender. The result is as shown in table 4.2

Table 4.3 Gender of the respondents

Gender	Frequency	Percent
Male	52	75.4
Female	17	24.6
Total	69	100.0

The result in table 4.3 shows that a majority of respondents (75.4%) were male and 24.6% (women). The huge disparity in gender calls for gender inclusivity in maritime sector in terms of employment. Additionally, the lesser numbers in female staff portrays an implication that the maritime sector is male dominated or its environs are unfriendly/insecure for working by female gender. Hence, calls for further sensitization and awareness for a third gender rule to work in this sector in spearheading gender parity.

4.4.3 Academic level of respondents

The results in table 4.4 below shows that 20.3% of the respondents completed studies at the secondary level while only 37.7% made it to the university. About 1.45% had primary education and 30.5% had tertiary education. This shows that the respondents have the capacity to understand and participate in maritime matters and also had the capacity to understand the questionnaires and give valid responses. The respondents were also requested to indicate their academic level. The result is as shown in table 4.3 above.

Table 4.4: Level of Academic

Academic level	Frequency	Percent
KCPE	1	1.45
KCSE	14	20.3
Certificate	9	13.0
Diploma	19	27.5
Degree	14	20.3
Postgraduate	12	17.4
Total	69	100.0

Source: Research Data (2022)

The above results showed that the majority of respondents were graduates with a total of 26 (Degree and post graduates) which represented 37.7%. Therefore, respondents had attained high levels of education meeting necessary threshold qualifications to participate in the study. Tertiary certificates and Diploma holders constituted 9 and 19 respectively, which portrayed personnel who perform technical work in the maritime arena. Only 1 staff had KCPE level which shows staff who perform manual jobs in the organization.

4.5 Descriptive Statistics

Table 4.5: Respondents response on Organization structure

	1	2	3	4	5	MEAN	SD
Organization structure affect speed of decision making within the maritime agencies in Mombasa coast Kenya	2	2	8	32	25	4.10	0.926
Organization structure adopted, fosters creation of lean team at maritime agencies	1	5	15	30	18	3.86	0.944
Organization structure adopted, fosters efficient tasks Completion within maritime agencies in Mombasa	2	6	10	37	14	3.80	0.964
Efficiency solution delivery to maritime stakeholders is positively increased by organization structure.	4	3	13	21	27	3.94	1.145
Personnel are empowered by organization structure to make decisions relating to the routine tasks they are working on	4	6	7	26	26	3.93	1.167

Source: Research Data (2022)

As per table 4.5 above, the distribution were as result of views of respondents of different statements in view of organization structure. There were score 1= strongly disagree, 2 =disagree, 3= neutral, 4= agree and 5 = strongly agree.

This study sought how the speed of decision making in maritime agencies in Mombasa is affected by organization structure, 4 respondents (5.6%) in totality disagreed, 8 (11.6%)

remained neutral whereas 32 (46.4%) and 25 (36.2%) agreed and strongly agreed respectively. The effect of organization structure stimulates the growth or failure of many organizations. The question was to gauge the perception of the respondents on the effects of organization structure on decision making in an organization. The relevance is outlined in effectiveness of organization structure to speed up decision making process hence steady task completion.

The study sought to establish how the respondents rated efficient tasks completion within maritime agencies, 2 (2.9%) and 6 (8.7%) in totality disagreed, 10 respondents (14.5%) were neutral and 51 (73.9%) respondents agreed that indeed creation of lean teams will be triggered by organization structure at maritime agencies, 18 respondents represent (26.1%) strongly agreed and 30 (43.5%) agreed. 15 respondents (21.7%) remained neutral and 1 respondent (1.4%) strongly disagreed. The lean team enhances faster dissemination information among the players in the same game. Therefore, whether the organization structure adopted fosters creation of lean teams was intended to bring out the importance of lean team, this team improves performance in maritime sector as tasks are assigned according to staff job specification therefore reducing over assignment of duties also duplication of tasks is addressed.

The study sought to determine if the organization structure positively increases efficiency solutions delivery to maritime stake holders, 13 respondents (18.8%) tended to be neutral, 4 (5.8%) and 3 (4.3%) respondents conclusively disagreed and 21 (30.4%) and 27 (39.1%) agreed respectively. Respondents were asked if the organization structure empowers individual personnel to make decisions relating to the routine tasks they are working on, 52 respondents (74.2%) in totality agreed, 7 (10.1%) remained neutral and 10 (14.5%) respondents disagreed. The results showed that organization structure had

positive impact on the performance of every organization. Organizations' structure in groups to enable tasks that seem difficult to be achieved as individuals are made possible. In relation to maritime, surface area to be covered is relatively large to be monitored hence organization structure of groups, regional bodies, international, states etcetera. The positivity in organization structure enhances efficiency in delivery of tasks intended for. From the respondents stand point; it is evident that indeed strengthened and goal oriented organization structure brings in more efficiency towards achievement of set goals. The mean score of various responses generated showed the average perception around the mean.

The standard deviation were examined showing the level of consensus on different statement with regard to organization structure. Strong tendency to agree was indicated by mean scores above 3.5 whereas, above 3.0 were interpreted as tendency to agree. There was no agreement for standard deviation above 1; consensus for standard deviation below 1. Mean of 4.10 meant; the results from the table above show that the respondents strongly agreed that the organization structure affect the speed of decision making within the maritime agencies along Mombasa coast. Results (mean = 3.86), showed that definitely organization structure adopted fosters creation of lean teams at maritime agencies. Organization structure adopted fosters efficient tasks in completion within maritime agencies in Mombasa (mean = 3.80), A mean of 3.94 affirmed that efficient solutions delivery to maritime stakeholders is positively initiated by organization structure and the individual personnel are empowered to make decisions on routine tasks they are working on through organization structure (mean=3.93).

The respondents had consensus that the organization structure affect the speed of decision making within the maritime agencies in Mombasa, the organization structure adopted

fosters creation of lean teams at maritime agencies and Organization structure adopted fosters efficient tasks in completion within maritime agencies in Mombasa with the standard deviation of 0.926, 0.944 and 0.964 respectively. On the other hand, respondents had no consensus on whether the organization structure positively increases efficiency solutions delivery to maritime stakeholders (s.d = 1.145) or the organization structure empowers individual personnel to make decisions relating to the routine tasks they are working on (s.d=1.167).

4.6 Descriptive of Staff Competence

Table 4.6: Respondents response on Staff competence

	1	2	3	4	5	MEAN	SD
Organization depends on alterations in performance , perception and conduct of workers commitment to justify competency competencies and certify retention	0	0	24	40	26	4.35	2.033
The organization implements initiatives to boost workers competencies and certify retention	2	2	11	33	21	4.72	6.209
In determining the personnel to be trained effective development and assessment plan is conducted in the organization	0	5	9	33	22	4.04	0.865
On - job training opportunities is capitalized greatly by the organization	2	4	8	32	23	4.03	1.000
Follow up after a learning activity of new skills and knowledge is integrated by organization into workers tasks	3	1	10	32	23	4.59	4.909

Source: Research Data (2022)

The distribution from the table 4.6 above, were as result of views of respondents of different statements in view of staff competence. There were score 1= strongly disagree, 2 =disagree, 3= neutral, 4= agree and 5 = strongly agree.

On alterations in performance, perception etc. Regarding if organization depends on alterations; performance, perception and conduct of workers' commitment to justify competency competencies and certify retention, 24 respondents remained neutral, 40 and 26 respondents conclusively agreed and strongly agreed respectively. The conduct and perception of workers carries the image and reputation of the organization. Therefore, it is clearly evident in purview of the respondents' perception that organizational performance depends on the workers conduct and image.

The study sought to examine whether follow up after a learning activity of new skills and knowledge is integrated by organization into workers' tasks, 3 (4.3%) respondents in totality disagreed, 1 (1.4%) respondent disagreed, 10 (14.5%) remained neutral whereas 32 (46.4%) and 22 (31.9%) agreed and strongly agreed respectively. The positive view of respondents towards learning of new skills and knowledge integration, it's a key pillar in workers capability or ability towards task accomplishment. It's the rule of the thumb that indeed knowledge integration, acquisitions are always and very important bloc of tasks and goals attainment.

The results further showed in determining the personnel to be trained effective development and assessment plan is conducted in the organization, 5 respondents (7.2%) disagreed, 9 respondents (13%) were neutral and 55 respondents (78.3%) agreed that indeed in determining the personnel to be trained effective development and assessment plan is conducted in the organization.

Regarding On - Job Training (OJT) respondents were asked to indicate whether On - Job Training (OJT) opportunities is capitalized greatly by the organization, 23 respondents

(33.3%) strongly agreed and 32 (46.4%) agreed. 8 (11.6%) respondents remained neutral and 2 (2.9%) and 4 (5.8%) respondents disagreed in totality. Training frequently adds value to the work force, steady assessment brings about improvement on methods and modes of skill and knowledge acquisition within the working environment. Therefore, it was imperative to note that in view of the 'respondents' perception, assessment plans and different training modes and methods inculcate more skills and abilities to the worker force which brings about organization growth therefore, it must be greatly capitalized and invested in by organization.

The study also sought to identify whether follow up after a learning activity of new skills and knowledge is integrated by organization into workers' tasks, 3 respondents (4.3%) strongly disagreed, 1 respondent (1.4%) disagreed, 32 respondents (46.4%) remained neutral and 23 respondents (33.3%) strongly agreed. According to the current situation, most maritime organisations enhance nurturing of skills to newly joined staff to enhance continuity of organization culture and norms enrooted to a certain conduct attuned to mission readiness of the same organization.

The mean score of different statements of staff competence matrix were generated showing the average perception and responses around the mean. . The mean scores above 3.5 were interpreted as strong tendency to agree and mean scores above 3.0 were interpreted as tendency to agree on average. The standard deviation were examined showing the level of consensus on different statement with regard to staff competency. There was no consensus for standard deviation above 1 and consensus for standard deviation below 1. The results from the table above show that the respondents strongly agreed that the Organization depends on alterations in performance, perception and conduct of workers commitment to justify competency competencies and certify

retention by mean of 4.35 or Follow up after a learning activity of new skills and knowledge is integrated by organization into workers tasks (mean 4.59) or The organization implements initiatives to boost workers competencies and certify retention (mean=4.72). The respondents also strongly agreed that On - Job Training (OJT) opportunities is capitalized greatly by the organization (mean = 4.03), In determining the personnel to be trained effective development and assessment plan is conducted in the organization (mean = 4.04). The respondents had no consensus that organization depends on alterations in performance, perception and conduct of workers commitment to justify competency competencies and certify retention or Follow up after a learning activity of new skills and knowledge is integrated by organization into workers tasks or the organization implements initiatives to boost workers competencies and certify retention or On - Job Training (OJT) opportunities is capitalized greatly by the organization, with the standard deviation of 2.033, 4.909, 6.209 and 1.000 respectively. On the other hand, the respondents had consensus in determining the personnel to be trained effective development and assessment plan is conducted in the organization (s.d=0.865). Finally, whether the staff competence has some effects on organizational wellbeing in maritime arena, it is imperative to outline that staff competence contributes immensely to the growth and tasks and mission accomplishment and readiness among the players in oceanography. How this is achieved through core competencies which help staff to enhance team work, be well motivated, cope up easily with any unbecoming/ hardship environment at sea (sea sickness, stress, sea rough etc.), developing of strategies, helping adapt easily in any sea disastrous environment, making decisions, coping up with emotions etc. As such organizational wellbeing leverages maritime organisations to work as one team and meet set objectives. In addition, it staff are motivated, dedicated and feel to be part of the organization.

4.7 Descriptive of Information Technology

Table 4.7: Respondents response on Information Technology

	1	2	3	4	5	MEAN	SD
Data collection process by field officers at the maritime agencies has significantly improved services by using IT tools	25	0	0	40	2	3.93	0.667
Paper based process in data collection is easier as compared to IT tools	4	9	14	29	13	3.55	1.119
Better management of department data needs at the maritime agency is facilitated by use of IT	1	1	11	35	21	4.07	0.810
Decision making process hastened by use of IT data management system in the organization	4	0	13	28	24	3.99	1.036
Target monitoring and reporting has significantly improved at maritime agencies as a result of IT use	2	3	10	25	29	4.10	1.002

Source: Research Data (2022)

From table 4.7 above: The distribution were as result of views of respondents of different statements in view of staff competence. There were score 1= strongly disagree, 2 =disagree, 3= neutral, 4= agree and 5 = strongly agree.

The study sought to determine whether data collection process by field officers at the maritime agencies has significantly improved services by using IT tools, 25 respondents strongly disagreed, 40 respondents agreed and 2 respondents strongly agreed. Information technology is driver of all economic aspects geared towards goal attainment and development, in maritime space it's not opposite in the sense that the maritime family sees IT as an indicator of performance improvement.

The study sought to establish whether paper based process in data collection is easier as compared to IT tools, 42 respondents (60%) in totality agreed, 14 respondents (20.3%)

remained neutral whereas 9 respondent (13%) disagreed and 4 strongly disagreed (5.8%). In comparison between manual paper work and information technology. The maritime players presume that paper work is better than IT workings. This is an indication of avoiding change. As a basic economic driver, IT revolutionizes and steadily improves working environment by making it easier to achieve set goals. In this study, the comparison was important since cleared the doubt whether a IT tools and modes should be incorporated in daily workings of the organizations or not.

Respondents were asked on better department management, if data needs at the maritime agency is facilitated by use of IT, 2 respondents represent (2.8%) disagreed in totality, 56 respondents (81.1%) conclusively agreed and 11 respondents (15.9%) remained neutral. Therefore, better management of department data needs at the maritime agencies is facilitated by use of IT. In data transformation and storage, it is one of the basic functions of IT, in maritime family it is not different. The maritime sector in wholesome depends on information technology on data management. IT plays very vital role in data management hence relevant to this study that partakes information at the center of its heart beat.

Decision making process is hastened by use of I.T data management system in the organization, 4 respondents (5.8%) strongly disagreed and 13 respondents (18.8%) remained neutral. 28 respondents (40.6%) agreed and 24 respondents (34.8%) strongly agreed. Due to speedy information processing and dissemination by IT platforms, the decisions are reached very fast. IT creates very important pillar and platform through which maritime teams share, process, store and transfer information faster giving birth to pregnant decisions within the maritime space.

The study sought to determine whether target monitoring and reporting has significantly improved at maritime agencies as a result of IT use, 2 respondents represent 2.9%

strongly disagreed whereas, 3 respondents (4.3%) disagreed, 10 respondent (14.5%) tended to be neutral, 25 (36.2%) and 29 (42%) respondents agreed and strongly agreed respectively. Not only IT enhance decision making process but also improves monitoring and reporting capabilities. Based on above respondents thinking and perception, IT is as critical as it is in monitoring and reporting of results between the maritime teams that necessitates fertile decisions resulting in productive outcomes.

The mean score of different statements of organization structure matrix were generated showing the average perception and responses around the mean. The standard deviation were examined showing the level of consensus on different statement with regard to organization structure. The mean scores above 3.5 were interpreted as strong tendency to agree and mean scores above 3.0 were interpreted as tendency to agree on average. There was no consensus for standard deviation above 1 and consensus for standard deviation below 1.

The results from the table above show that the respondents strongly agreed that better management of department data needs at the maritime agency is facilitated by use of IT, Target monitoring and reporting has significantly improved at maritime agencies as a result of IT use, or decision making process hastened by use of IT data management system in the organization, paper based process in data collection is easier as compared to IT tools and data collection process by field officers at the maritime agencies has significantly improved services by using IT tools with respective mean of 4.07, 4.10, 3.99, 3.55 and 3.93.

There was consensus that data collection process by field officers at the maritime agencies has significantly improved services by using IT tools (s.d 0.667) and better management of department data needs at the maritime agency is facilitated by use of IT (s.d 0.810).

On the other hand, respondents had no consensus on Paper based process in data collection is easier as compared to IT tools, Decision making process hastened by use of IT data management system in the organization and Target monitoring and reporting has significantly improved at maritime agencies as a result of IT use standard deviation was 1.119, 1.036 and 1.002 respectively. The study sought to establish how the respondents rated whether information technology is a vital pillar for coordination of players and surveillance in maritime environment. It is obligatory to note that information technology is super and enhances and improves the workings in terms of data management, decision making, information sharing and monitoring at large hence proper coordination resulting in desired collaboration amongst the players in maritime space.

IT is key in coordinating tracing/tracking/detecting, deterring and denying criminal activities at sea like piracy activities, in ashore IT gives best option of container scanning thereby enhancing security in maritime sector. IT enhances tracking of vessels approaching EEZ through such visibility tools like Sea vision, radars, satellites etcetera. IT tools help to know shipment conveyed whether is illegal goods, contrabands, illegal small arms or explosives and facilitate earlier intersection and confiscation of such illegal activities. Port facility are placed with highly electronic surveillance equipment by virtue of IT.

4.8 Descriptive of Information sharing

Table 4.8: Respondents response on Information sharing

	1	2	3	4	5	MEAN	SD
Personnel hold brainstorming sessions to come up with suggestions for solving problems concerning maritime surveillance	6	3	11	32	17	3.74	1.146
New personnel are assigned mentors to help them .on personal work and accelerate their learning	4	6	13	22	24	3.81	1.179
Personnel contribute ideas and thoughts to the organization through online discussion	7	3		12	27	19	3.71
Information sharing infrastructure and equipment (internet and intranet) is easily available to all employees at the agencies	4	9		22	21	13	3.43
New staff/Recruits share their experiences and knowledge about work with other organizations in meetings		9	5	15	25	15	3.46

Source: Research Data (2022)

Distribution in table 4.8 was based from views of respondents of different statements in view of organization structure. There were score 1= strongly disagree, 2 =disagree, 3= neutral, 4= agree and 5 = strongly agree.

The findings showed that, if personnel hold brainstorming sessions to come up with suggestions for solving problems concerning maritime surveillance, 11 respondents

tended to be neutral which represented 15.9%, 32 and 17 respondents conclusively agreed (46.4% and 24.6% respectively). 6 and 3 respondents agreed respectively (8.7% and 4.3% respectively). New positive suggestions and thinking rejuvenates the players always. Therefore, its vital to highlight that maritime family encourages new thinking and suggestion thereby giving opportunities to individual player to express his/her feeling and thinking towards improvement the maritime sector at large.

Regarding mentorship, respondents were asked to indicate if new personnel are assigned mentors to help them on personal work and accelerate their learning 10 respondents in totality disagreed (14.5%), 13 remained neutral (18.8%) and 46 respondents fully agreed (66%). Mentoring is process of coaching and apprenticeship that is aimed towards improving the working techniques and motivation of the labour force. 70% of respondents agreeing is an indication that indeed maritime fraternity encourages mentorship which in turn promulgates desired results and raises team spirit among the ocean players.

The study sought to examine on whether personnel contribute ideas and thoughts to the organization through online discussion, 10 respondents in totality disagreed (14.4%), 12 remained neutral (17.4%) whereas 27 (39.1%) and 19 (27.5%) agreed and strongly agreed respectively. Encouraging discussion and free flow of ideas among the workers in an organization is a source of morale to workers. This leads to work improvement motivation between the teams. Based on the results above, shows that the maritime players take it positive to contribute their thoughts and ideas to the organizational functionability. This makes them part and parcel of the organization.

The study determined whether Information sharing infrastructure and equipment (internet and intranet) is easily available to all employees at the agencies, 4 and 9 in totality disagreed represent 5.8% and 13% respectively, 22 respondents were neutral (31.9%) and

34 respondents representing (49.2%) agreed in totality that indeed Information sharing infrastructure and equipment (internet and intranet) is easily available to all employees at the agencies.

Internet and intranet are IT variants that enables communication in today's technological space. Therefore, it is imperative that maritime arena must invest in the same to enhance improved communication to its members. Leaders must make it a policy to have internet within the maritime organizations. In addition, there is need for energy back up to supplement power resupply to prevent flow of network incase of power cut or inflactuation of energy supply such back ups include standby generators, solar power etc. Half of the respondents dissenting is a clear view that no major investment has been put forth, hence poor coordination that is necessitated by poor communications between the players thereby giving birth to undesired collaborations.

In regard to New staff/Recruits share their experiences and knowledge about work with other organizations in meetings, 15 respondents (21.5%) tended to strongly agree while 25 respondents (36.2%) agreed. 15 respondents (21.7%) remained neutral. 9 (13%) and 5 (7.2%) respondents strongly disagreed and disagreed respectively.

Exchange of skills and knowledge is very important since it leads to identification of gaps and solutions to those gaps. Therefore, it's encouraging to see that maritime fraternity allows knowledge exchange program between the recruits and staffs of other organization. This is vital because it promotes team playing and problem solving skills among the players.

The mean score of different statements of information sharing matrix were generated showing the average perception and responses around the mean. The standard deviation were examined showing the level of consensus on different statement with regard to information sharing. The mean scores above 3.5 were interpreted as strong tendency to

agree and mean scores above 3.0 were interpreted as tendency to agree on average. There was no consensus for standard deviation above 1 and consensus for standard deviation below 1. The results from the table above show that the respondents strongly agreed that new personnel are assigned mentors to help them on personal work and accelerate their learning by mean of 3.81).

The respondents also agreed that personnel brainstorming sessions to come up with suggestions for solving problems concerning maritime surveillance (mean = 3.74), Personnel contribute ideas and thoughts to the organization through online discussions (mean = 3.71), new staff/recruits share their experiences and knowledge about work with other organizations in meetings (mean= 3.46) and information sharing and equipment (internet and intranet) is easily available to all employees at agencies (mean=3.43). The respondents had no consensus on whether personnel hold brainstorming sessions to come up with suggestions for solving problems concerning maritime surveillance (s.d = 1.146) or new staff/recruits share their experiences and knowledge about work with other organizations in meeting (s.d = 1.222) or information sharing and equipment (internet and intranet) is easily available to all employees at agencies (s.d = 1.279) or personnel contribute ideas and thoughts to the organization through online discussions (s.d = 1.118) or New personnel are assigned mentors to help them on personal work and accelerate their learning (s.d = 1.179). Information sharing is a corner stone that holds organization focused to its goals and vision. Improved coordination, collaboration and good decisions are as a results of enhanced information sharing. When asked whether information sharing is key pillar to the success of an organization? The response must be in totality positive that indeed information is key pillar that must not be looked down upon.

Regional maritime coordination centers act as the link between maritime multi-agency and ships underway in the sense that exchange of information in regard to safety, sea route, in times of distress, monitoring and surveillance of vessels etc. this justifies information sharing.

4.9 Descriptive of Maritime Surveillance

Table 4.9: Respondents response on Maritime surveillance

	1	2	3	4	5	MEAN	SD
Accountability mechanisms ensure that all of the required maritime agencies contribute to the success of maritime surveillance	2	3	9	36	19	3.97	0.923
Multi-agency team includes state actors with an interest in the security of Kenya's Coast maritime industry i.e. KMA, KPA, Kenya Navy, KSL,KPA,KCGS etc.	3	1	9	25	31	4.16	1.009
Maritime surveillance is used for the protection of vessels both internally and externally	2	1		5	27	34	4.30 0.896
There is a link between multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya	2	3		12	30	22	3.97 0.970
There is a clear protocol on communication and information sharing modalities within the multi-agency collaboration	1	5		13	30	20	3.91 0.951
Maritime diplomacy is a tool in enhancing activities of multi-agency collaboration and	0	4		13	31	21	4.00 0.857

maritime surveillance

Source: Research Data (2022)

The findings in table 4.9: The distribution were as result of views of respondents of different statements in view of staff competence. There were score 1= strongly disagree, 2 =disagree, 3= neutral, 4= agree and 5 = strongly agree.

When asked whether accountability mechanisms ensure that all of the required maritime agencies contribute to the success of maritime surveillance, 2 respondents strongly disagreed represent 2.9%, another 3 disagreed represent 4.3%, 55 respondents conclusively agreed representing 79.7% and 9 respondents remained neutral which represent 13%. Therefore, accountability mechanisms ensure that all of the required maritime agencies contribute to the success of maritime surveillance. Accountability is the state of acceptance of any inability and openness. The accountability mechanism employed by maritime sector is acceptable to all members based on the respondents' views above. The mechanisms train the individual to be responsible, own the fault when fall due and be accountable to any situation that might be in place. Therefore one can control what he/she an account for. The success of every organization is based on responsibility that every member carries.

The study sought to examine whether Multi-agency team includes state actors with an interest in the security of Mombasa Coast maritime industry i.e. KMA, KPA, Kenya

Navy, KSL, KPA, KCGS etc., 56 respondents in totality agreed (81.1%), 9 respondents remained neutral (13%) whereas 1 respondent disagreed (1.4%) and 3 strongly disagreed (4.3%). For the success to occur and goals be achieved, players of the game must subject matter experts. Therefore, it was prudent enough to employ those entities or individuals responsible for maritime environment and sustainability. The respondents' views above firmly conquer with the principle. It's important to note that the work force must be deployed according to their capabilities and abilities. A football player must only play football not hockey.

Regarding protection of vessels, respondents were asked to indicate whether Maritime surveillance is used for the protection of vessels both internally and externally, 2 respondents strongly disagreed which represent 2.9%, 1 respondent disagreed (1.4%), 29 respondents agreed which represent 39.1% whereas 5 respondents remained neutral (7.2%) and 34 respondents strongly agreed (49.3%). The goal behind maritime surveillance is protection of maritime ecosystem. It is based on this background that the larger number of respondents in totality agreed that indeed maritime surveillance was integral part in protection of vessels both internally and externally. The chemistry behind this statement was to capture the players' views on roles of maritime surveillance.

In line to whether there is a link between multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya, 2 respondents strongly disagreed (2.9%) and 3 respondents disagreed (4.3%). 12 respondents remained neutral (17.4%). 30 respondents agreed (43.5%) and 22 respondents strongly agreed (31.9%). The linkage between two or more proactive teams aimed at hitting the bulls eye is an important factor to consider in every situation as far as there's proper coordination in the play. The practicability of this scenario is clearly evident when almost 75% of respondents in totality are in consensus as

displayed above. The linkage between players strengthens and promotes team spirit that is the foundation of success in every organization.

The study sought to find out if there is a clear protocol on communication and information sharing modalities within the multi-agency collaboration, 6 respondents conclusively disagreed which represent 8.6%, 13 respondent were neutral (8.8%), 30 (43.5%) and 20 (29%) respondents agreed and strongly agreed respectively.

On whether Maritime diplomacy is a tool in enhancing activities of multi-agency collaboration and maritime surveillance, The results further showed that; 4 respondents disagreed (5.8%), 52 respondents conclusively agreed (75.3%) and 13 respondents remained neutral (18.8%). Therefore, maritime diplomacy is a tool in enhancing activities of multi-agency collaboration and maritime surveillance.

The mean score of various maritime surveillance responses created showed average perception about the mean. The standard deviation were examined showing the level of consensus on different statement with regard to organization structure. The mean scores above 3.5 were interpreted as strong tendency to agree and mean scores above 3.0 were interpreted as tendency to agree on average. There was no consensus for standard deviation above 1 and consensus for standard deviation below 1. The results from the table above show that the respondents on average strongly agreed Accountability mechanisms ensure that all of the required maritime agencies contribute to the success of maritime surveillance by mean of 3.97. Multi-agency team includes state actors with an interest in the security of Kenya's Coast maritime industry i.e. KMA, KPA, Kenya Navy, KSL, KPA, KCGS etc. (mean = 4.16), Maritime surveillance is used for the protection of vessels both internally and externally (mean = 4.30), There is a link between multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya (mean= 3.97), Maritime diplomacy is a tool in enhancing activities of multi-agency collaboration and

maritime surveillance by mean of 4.00 and There is a clear protocol on communication and information sharing modalities within the multi-agency collaboration (mean=3.91). The respondents on average had consensus that accountability mechanisms ensure that all of the required maritime agencies contribute to the success of maritime surveillance, Maritime surveillance is used for the protection of vessels both internally and externally, there is a link between multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya, maritime diplomacy is a tool in enhancing activities of multi-agency collaboration and maritime surveillance, and there is a clear protocol on communication and information sharing modalities within the multi-agency collaboration standard deviation of 0.923, 0.896, 0.970, 0.951 and 0.851 respectively. However, respondents had no consensus on multi-agency team includes state actors with an interest in the security of Kenya's Coast maritime industry i.e. KMA, KPA, Kenya Navy, KSL, KPA, KCGS etc., (s.d = 1.009) whether the linkage between the teams in the play bares positive results? It is a norm that must be encouraged in all organizations that team playing necessitates success. Proper coordination and collaboration in every organization is as a result of good working environment and team playing spirit. In addition, Maritime surveillance faces challenges mainly due to ever changing nature of International Maritime Organization instruments and the expansion in terms of improved regulations in the maritime industry, which if not domesticated, as such Kenya is expected from time to time put into law any upcoming maritime policy to leverage maritime knowhow and enhance legal activities and safety at sea at all times.

4.10 Inferential statistics

The regression model was used draw the relationship between Maritime surveillance and the four variables namely: organization structure, staff competencies, information technology, and information sharing.

4.10.1 Multiple Linear regression

Table 4.10: Multiple regression

Model Summary				
Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.513 ^a	.263	.217	.55020

Source: Researcher 2022

The results from table 4.10 above: There was positive correlation between the maritime surveillance and independent variables as the correlation coefficient, expressed as R, was 0.513. The coefficient of determination gave the amount of explained variance in the dependent variable (expressed as R²) as a result of the independent variable. The independent variable that were studied, explained 26.3% of the dependent variable as represented by the adjusted R square. This implies that other factors not studied in this research 73.7% should be conducted to assess effects of Multi-agency collaboration and maritime surveillance along Mombasa Coast, Kenya.

4.11 Analysis of Variance (ANOVA)

The study sought to know the relationship between the organization structure, staff competence, information technology and information sharing (independent variable) and Maritime surveillance (dependent variable). In this context, Maritime surveillance was regressed against the independent variables and the correlation results are presented in Table 4.11 below.

Table 4.11: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.931	4	1.733	5.724	.001 ^b
	Residual	19.374	64	.303		
	Total	26.305	68			

Source: Researcher 2022

The findings in table 4.11 above: Significance value P value = 0.001 which is less than 0.05 representing the model to be reliable and statistically significant in predicting how independent variables (organization structure, staff competence, information technology and information sharing) affect maritime surveillance.

The F Critical at 5.724% level of significance was 2.033. Since F Calculated (Value 5.724) is greater than the F Critical (value 2.033), this shows that the overall model was significant.

4.12 Significance of Co-efficient Analysis

Table 4.12: Co-efficients Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	2t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.898	.445		6.512	.000
	OS	-.064	.113	-.073	-.569	.572
	SC	-.023	.035	-.076	-.672	.504
	IT	.041	.132	.044	.314	.755
	IS	.371	.093	.524	3.983	.000

Source: Researcher 2022

The findings from the table 4.12 above shows: Co-efficient of determination explains the extent to which changes in the dependent variable (Maritime Surveillance) can be explained by the change in independent variable i.e. Organization structure, Staff competence, Information technology and Information sharing.

As per the SPSS generated table above, the equation:

$$(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon)$$

$$Y = 2.898 + - 0.064 + - 0.023 + 0.041 + 0.371 + \varepsilon$$

Whereby:

Y= Maritime surveillance

β_0 = Current maritime surveillance position

X_1 = Organizational Structure

X_2 = Staff competency

X_3 = Information Technology

X_4 = Information sharing

$\beta_1, \beta_2, \beta_3$ and β_4 = determination of coefficients

ε = precision or error term

According to the regression equation established, taking all the independent into constant at zero, Maritime surveillance along Mombasa coast, Kenya.

The data findings show that a unit increase in information technology would lead to 0.041 increase in the maritime surveillance along Mombasa coast, Kenya. Automatic notifications are sent out through photos generated by electronic surveillance systems at sea regardless of the time or weather, enabling the detection of dark targets vessels that have their transponders unlawfully turned off. As suspicious ships are found and monitored, analysts calculate the position of the danger ships if left unattended. When a vessel enters a prohibited area or behaves in a way that may be interpreted as criminal conduct, such as trans-shipping illegally obtained fish between two vessels at night or on the open seas, (Reva, 2021). Hence, information technology has grossly led to effective service delivery and efficiency in the maritime industry at large.

Increase in a unit information sharing led to 0.371 growth on maritime surveillance along Mombasa coast. (Barshefsky, 2016) stresses the significance of maritime awareness in boosting maritime security through the collecting, processing, and distribution of facts that serves as the foundation for both military and law application operations involving maritime security agencies within the lawful parameters of maritime legal guidelines and in light of the all-inclusive interest in bettering our understanding of who is involved in what marine operations.

In the context of this study findings, a unit increase in staff competence resulted to negative (-) 0.041 in the maritime surveillance along Mombasa coast. (Rustomiee, 2017), shows that operationalizing maritime surveillance necessitates the development of hands on skills by workers for incumbent maritime industries future maritime needs like marine bio prospecting. Under developed states face a range of new educational, skill-development, and training challenges related to the maritime industry and experts in

promoting interest; creating industries and creating business ties. Therefore, an increase in staff competence will not cause any difference in effecting maritime surveillance.

Table 4.12 above illustrated regression equation by establishing that one unit increase in organization structure would led to negative (-) 0.064 which had a decrease in the maritime surveillance. It is worth noting that this sector (maritime) influences dominance at sea in terms of the strongest naval forces and spatial relationships. This framework offers means like resources to complete its mission (maritime surveillance). These surveillance roles, entail enlisting, deployment of naval forces at sea, sea patrol, air surveillance of the ocean etc. In this context, organizational structure has no effect in multi-agency collaboration and maritime surveillance.

CHAPTER FIVE

SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This research sought to examine determinants effecting multi-agency collaboration and maritime surveillance along Mombasa coast. It contains the conclusion from the study and gives recommendations as well as suggestions for further studies.

5.2 Summary of Findings

The study was guided by four questions: Examine the effect of multi-agency collaboration and maritime surveillance in Mombasa Coast? Establish the effect of organization structure on maritime surveillance in Mombasa Coast, Kenya? Examine the effect of staff competency on maritime surveillance in Mombasa Coast, Kenya? Examine information technology effect on maritime surveillance in Mombasa Coast, Kenya? Determine the effect of information sharing on maritime surveillance in Mombasa Coast? Descriptive statistical analysis was carried out to determine measures of central tendencies. Multiple regression analysis (ANOVA and Co-efficient) was utilized to draw link between the four independent variables and maritime surveillance. From the findings, the following was reached at:

5.2.1 Organization structure

Organization structure mean scores were between 3.8 and 4.10 which reflected that respondents tended to agree with the statements. The standard deviations between 0.926 and 0.964 for organization structure meant moderate consensus on statements which were moderately distributed around the mean.

Mean score of different reports of created organization structure matrix showed average perception and replies about mean. The standard deviation were examined showing the

level of consensus on different statement with regard to organization structure. The mean scores above 3.5 were interpreted as strong tendency to agree and mean scores above 3.0 were interpreted as tendency to agree on average. There was no consensus for standard deviation above 1; for standard deviation below 0.99 characterized agreement. The results of mean = 4.10 from the table above portrayed the speed of decision making within the maritime agencies in Mombasa strongly affected by the organization structure. Also respondents agreed (mean = 3.86) that the organization structure adopted fosters creation of lean teams at maritime agencies. Another mean of 3.80; respondents agreed that efficient tasks are accomplished within maritime agencies along Mombasa coast through organization structure. Positive maritime stake holders increment in efficiency solutions delivery with mean of 3.94 shows respondents are in agreement of the organization structure and that the organization structure empowers individual personnel to make decisions relating to the routine tasks they are working on(mean=3.93). The respondents had consensus that the organization structure affect the speed of decision making within the maritime agencies in Mombasa, the organization structure adopted fosters creation of lean teams at maritime agencies and subject structure adopted fosters efficient tasks in completion within maritime agencies in Mombasa with the standard deviation of 0.926, 0.944 and 0.964 respectively. On the other hand, respondents had no consensus on whether the organization structure positively increases efficiency solutions delivery to maritime stakeholders (s.d = 1.145) or personnel are empowered to make decisions in relation to routine tasks they are working on (s.d=1.167).

5.2.2 Staff competence

Several responses on staff competence matrix on average, respondents tended to strongly agree as characterized by mean between 4.03 and 4.72 implying that the respondents on

average tended to strongly agree with each of the statements. The standard deviations for all staff competence statements in the matrix except for one statement was 0.865 which meant that responses were moderately distributed around the mean implying there was moderate consensus on the statement.

Mean score of varied staff competence matrix statements were produced showing the average perception and responses around the mean. The mean scores above 3.5 was construed as a strong tendency to agree. Mean scores above 3.0 were interpreted as tendency to agree on average. The standard deviation were examined showing the level of consensus on different statement with regard to staff competency. There was no consensus for standard deviation above 1 and consensus for standard deviation below 1. The results from the table above show that the respondents strongly agreed that the Organization depends on alterations in performance, perception and conduct of workers commitment to justify competency competencies and certify retention by mean of 4.35 or Follow up after a learning activity of new skills and knowledge is integrated by organization into workers tasks (mean 4.59) or The organization implements initiatives to boost workers competencies and certify retention (mean=4.72). The respondents also strongly agreed that On - Job Training (OJT) opportunities is capitalized greatly by the organization (mean = 4.03), In determining the personnel to be trained effective development and assessment plan is conducted in the organization (mean = 4.04). The respondents had no consensus that organization depends on alterations in performance, perception and conduct of workers commitment to justify competency competencies and certify retention or Follow up after a learning activity of new skills and knowledge is integrated by organization into workers tasks or the organization implements initiatives to boost workers competencies and certify retention or On - Job Training (OJT) opportunities is capitalized greatly by the organization, with

the standard deviation of 2.033, 4.909, 6.209 and 1.000 respectively. On the other hand, the respondents had consensus in determining the personnel to be trained effective development and assessment plan is conducted in the organization (s.d=0.865).

5.2.3 Information technology

Overall mean scores for the different statements of the information technology matrix were between 3.55 and 4.10 implying that the respondents on average tended to agree with each of the statements. The standard deviations for the different statements of the organization structure matrix except the standard deviation for two statements were between 0.667 and 0.810 which means that responses were moderately distributed around the mean implying there was moderate consensus on the various statements.

The mean score of different statements of information technology matrix were generated showing the average perception and responses around the mean. The standard deviation were examined showing the level of consensus on different statement with regard to organization structure. The mean scores above 3.5 were interpreted as strong tendency to agree and mean scores above 3.0 were interpreted as tendency to agree on average. There was no consensus for standard deviation above 1 and consensus for standard deviation below 0.99. The results from the table above show that the respondents strongly agreed that better management of department data needs at the maritime agency is facilitated by use of IT, Target monitoring and reporting has significantly improved at maritime agencies as a result of IT use, or Decision making process hastened by use of IT data management system in the organization, Paper based process in data collection is easier as compared to IT tools and Data collection process by field officers at the maritime agencies has significantly improved services by using IT tools by mean of 4.07, 4.10, 3.99, 3.55 and 3.93 respectively. The respondents had consensus that data collection

process by field officers at the maritime agencies has significantly improved services by using IT tools (s.d 0.667) and better management of department data needs at the maritime agency is facilitated by use of IT (s.d 0.810). On the other hand, respondents had no consensus on Paper based process in data collection is easier as compared to IT tools, Decision making process hastened by use of IT data management system in the organization and Target monitoring and reporting has significantly improved at maritime agencies as a result of IT use standard deviation was 1.119, 1.036 and 1.002 respectively.

5.2.4 Information sharing

Mean scores entirely for the different statements of the information sharing matrix were between 3.43 and 3.81 implying that the respondents on average tended to agree with each of the statements. The standard deviations for the different statements of the information sharing matrix except the standard deviation for three statements were between 1.118 and 1.279 which means that responses were not moderately distributed around the mean implying there was no consensus on the various statements.

The mean scores above 3.5 were interpreted as strong tendency to agree and mean scores above 3.0 were interpreted as tendency to agree on average. There was no consensus for standard deviation above 1 and consensus for standard deviation below 0.99. The results from the table above show that the respondents strongly agreed that new personnel are assigned mentors to help them on personal work and accelerate their learning by mean of 3.81. The respondents also agreed that personnel brainstorming sessions to come up with suggestions for solving problems concerning maritime surveillance (mean = 3.74), Personnel contribute ideas and thoughts to the organization through online discussions (mean = 3.71), new staff/recruits share their experiences and knowledge about work with other organizations in meetings (mean= 3.46) and information sharing and equipment

(internet and intranet) is easily available to all employees at agencies (mean=3.43). The respondents had no consensus on whether personnel hold brainstorming sessions to come up with suggestions for solving problems concerning maritime surveillance (s.d = 1.146) or new staff/recruits share their experiences and knowledge about work with other organizations in meeting (s.d = 1.222) or information sharing and equipment (internet and intranet) is easily available to all employees at agencies (s.d = 1.279) or personnel contribute ideas and thoughts to the organization through online discussions (s.d = 1.118) or New personnel are assigned mentors to help them on personal work and accelerate their learning (s.d = 1.179).

5.3 Conclusions

Based on the study findings, it is concluded that a significant and a positive relationship exists between information technology practices and Maritime surveillance along Mombasa Coastline in Kenya. The study also concluded that information sharing affect the Multi-agency collaboration and Maritime surveillance along Mombasa Coast, Kenya. In order to effectively automate maritime surveillance, several systems have been developed so as to ensure that maritime domain or territorial waters and Exclusive Economic Zone (EEZ) is sufficiently secured to enhance maritime trade and to strike a balance between the costs involved in reacting to criminal activities like piracy, human trafficking/ smuggling of goods/small arms etc. and customer satisfaction (investors and maritime employees and coastal communities).

Regional Security Complex theory (RSCT) support the recommendation of the best way forward for a combined East African countries strategy to develop maritime policies to guide operations in the maritime domain. Integration contests will revolve around how best to reconcile top down maritime integration contained visions in the RECS and AU,

through approaches incorporating the bottom-up realities of working among member states on issues touching on joint resource extraction, border delineation, facts distribution specifically sensitive statistics on naval capability. Additionally, according to the primary premise of securitization theory, many behaviours in certain cases may be considered normal, become severe security challenges and are securitized in the framework of this research. For instance, (Illegal, Unreported and Unregulated) IUU and marine environment pollution, which for a long time were non-concern issues, have recently become major security concerns as a result of the securitization of the issues by various players like politicians, security experts, and environmentalists (Stritzel, 2014). Staff competence is paramount in organizations; visionary leaders in tackling the issues of maritime surveillance. Their academic qualification, skills (soft, hard and technical) and their experience levels always influence their ability to make correct decisions/judgments regarding maritime and its ability to sustain long-lasting effective Multi-agency collaboration and efficient maritime surveillance.

The study also concluded that coordination among agencies, locals along the coastline, other states, regional bodies and international entities had a greater influence on the country's maritime ability to secure its marine borders and enhance sustainable peace and stability and a favorable working environment for the locals, workers and investors. It was also concluded that regional and international organizations played a crucial role in influencing Kenya's ability to secure its maritime borders. The influence was majorly through the facilitation of the negotiation process and collaboration.

5.4 Recommendations

In the context of staff competencies, the study recommends that emphasis be placed only on scientific employment of qualified persons with maritime education background to

ensure that employees in the maritime sector, competently perform their duties and save funds that would have been used to train untrained enlisted individuals. In addition, capacity building, policy makers need to adopt strategies that will see maritime staff, be trained on the necessary skills and competencies needed to match international maritime organizations (IMO) standards on need to need basis. This will enhance efficiency in maritime surveillance and collaboration.

In the context of use of information technology, the study recommends that more emphasis be put on collection of information and monitoring electronic surveillance equipment using computer literate staff who can effectively manage the electronic devices for ease of access to information through sharing to relevant agencies, for transparency purposes and enhancing surveillance of the large surface area of seas and oceans/ unidentified sea areas. Also, this study recommends that proper monitoring and evaluation mechanisms be implemented with sufficient resources to ensure that maritime surveillance is efficient and effective.

In the context of use of information sharing, the study recommends that personnel working in maritime sector be encouraged to contribute ideas and thoughts through a secured online discussion platform or sea power symposiums to share ideas, current methodologies, adopt to international maritime standards as enshrined in IMO. This will enhance proper ISPPS code standards adherence, monitoring and evaluation in facilitating maritime surveillance efficiency and effectiveness.

Finally, the research recommends the implementation of the maritime -multiagency policy framework to address Ad-hoc participation by maritime multi-agency to reduce inefficiency when responding to situations/disasters at sea and advocate for terms and references for multi-agencies with an aim of operationalizing a fully-fledged maritime multi-agency and efficient and effective administrative systems this will help in the

detection of criminal activities and devise lean existence of maritime business and blue economy. Existing maritime multi-agency action plan should be incorporated into the maritime laws of the land to address Ad-hoc participation with an aim to bolster safety, effectiveness and efficiency service delivery in maritime sector.

5.5 Suggestions for Further studies

In this study it has clearly emerged that maritime organization do not have a legal framework in responding to maritime issues as multi-agency thus not getting the fully needed support from the government for mission readiness. In view of this, it is recommended that a detailed study on the role the Kenyan government in operationalizing maritime multi-agency in Kenya to effectively develop and execute a competitive maritime -business strategy. The findings of Implementation of such studies will greatly benefit Kenyan economy through better revenue collection emanating from maritime industry (transport-shipping industries, tourism-cruise ships and blue economy). The study recommends further studies on contribution of information technology on Maritime surveillance in Kenya. Another study can be carried out to assess the role of Maritime Coordination & Communications secure platform enhances the interagency collaboration. Further a study should be conducted to determine on the best-practices in the management of integrated intelligence and information sharing among maritime multi-agency. Finally, it is also recommended that a similar study be conducted in other Coastline Sub-Counties such as Kwale or Lamu to ascertain whether similar findings may be construed.

REFERENCES

- IMO. (2015). Initial IMO GHG strategy. *In Focus*.
- National Geographic. (2013). Isthmus.
- Ugur Yetkin. (2013). "Revealing the change in the maritime security environment through Porter's Five Forces Analysis" *Defence studies* 13 no. 4. Military and Government collection.
- Abdulahi, M. F. (2020). challenges of securing maritime borders for sustainable peace in Somalia . *challenges of securing maritime borders for sustainable peace in Somalia* .
- Aggrapine et al. (2014). Review of Maritime transport. *UNCTAD*.
- Ahmed, M. (2020). Navy steps up sea patrol to curb illicit trade. *Business daily Africa*.
- Ammerdown Group. (2016). Rethinking security. *Rethinking security*.
- Barshefsky, C. (2016). Review of maritime transport 2016. *United nations conference on trade and development UNCTAD*.
- Bartam. (2005). *The great eight competencies: A criterion centric approach to validation*.
- Berthod, O. (2018). *Institutional theory of organizations; Global Encyclopaedia of Public Administration*.
- Brewster, D. (2016). The Indian Ocean dialogue: a new forum for Indian Ocean maritime security. *Journal of the Indian Ocean Region*.
- Bueger, C, and Timothy. E. (2017). Beyond sea blindness: A new agenda for Maritime security studies. *Beyond sea blindness: A new agenda for Maritime security studies*.
- Burger. (2015). Maritime Security. *Marine Policy*.
- Burger, C. (2015). Learning from piracy future challenge of maritime security governance. *Global affairs*.
- Busan, B. (1991). *New Patterns of Global Security in the Twenty-first Century*.
- Career Transition Partnership. (2021). The Maritime Sector. *The Maritime Sector Guide*.
- Cavani. (2017). African combined exclusive maritime zones. *Institute for security studies*.
- Charo, A. M. (2021). Role of maritime policies and strategies in shaping the maritime security threats in Kenya. *African journal of Empirical research*.
- Clara, E. (2020). An introduction: Securitization theory. In *An introduction: Securitization theory* (p. 3/4). London South: E-IR Foundations beginners.

- Constitution of Kenya, Article 260. (2010). *Article 260*.
- Creswell. (2012). *Research in organization*.
- Deisavagani, M. (2021). Vision of IoUT: advances and future trends in optical wireless communication. *Vision of IoUT: advances and future trends in optical wireless communication*.
- Dr. P. Roell, et al. (2013). Focus on Defense and International security Maritime security- Perspectives for a Comprehensive Approach. *Focus on Defense and International security Maritime security-Perspectives for a Comprehensive Approach*.
- Drucker, P. (2015). *Drucker and leadership*.
- Egede, E. (2018). 2050 Africa integrated Maritime strategy (AIM 2050). *Policies strategies and plans*.
- EMSA, E. m. (2018). European spacing images. *Corpenicus maritime surveillance*.
- Ewan. (2010). Maritime Boundaries. *International boundaries*.
- Florez et al. (2012). *The role of management control systems on inter-organisational efficiency: An analysis of export performance*, 195-222.
- Fowler, F. J. (2016). *Survey research method (Applied science research method)*.
- Galdorisi, G. (2014). Heterogeneous Autonomous Mobile Maritime Expeditionary Robots: Maritime Information Dominance. *Naval Engineers*.
- Gitau, R. W. (2016). *Inventory Management and organization productivity in parastatals in Kenya*.
- Gomez et al. (2021). *AI Watch; Defining Artificial intelligence*.
- Hameed, A. (2015). Palestine Journal of Humanitarian and social sciences,. *Palestine Journal of Humanitarian and social sciences, Vol 3 No. 1 University of management and technology, Lahore, Pakistan*.
- Helal, H. M. (2008). *Maritime surveillance: an integral part of maritime security*.
- Hill, B. (2014). Offshore platform provides venue to task new technologies. *OPSTAR Program overview*.
- Hill, B. (2014). The offshore platform security Threat Awareness . *OPSTAR, Institute for Naval Post graduate Center for Assymmetric Warfare*.
- Howell, A. (2020). *Securitization theory. SAGE*.
- IMO. (2012). *International Maritime Organization*.
- Jain, A. (2021). Information sharing and transparency in an organization. *Information sharing and transparency in an organization*.

- Jayan. (2006). *Employee Competence: Performance of an employee*.
- Kaleka. (2012). *Studying resource and capability effects on export venture performance*, 47,93-105.
- Kaleka, A. (2002). *A resource and capabilities driving competitive advantage: Guidelines for industrial exporters*, 275-280.
- Kaleka, A. (2002). Resources and capabilities driving competitive advantages : Guidelines for industrial exporters. 275-280.
- Karigithu, N. (2019). Capacity building (in terms of HR) is also the key of the governments agenda due to creation of jobs and giving the youth tools and skills to participate in international shipping . *Investing in critical infrastructure, port development key for blue economy*.
- Katana, E. L. (2017). Determinants of Strategy Execution in Shipping companies in Kenya. *Determinants of Strategy Execution in Shipping companies in Kenya*.
- Kawaka et al. (2015). Locally Managed marine areas (LMMAs) in Kenya: a detailed history of their development and establishment. *CORDIO East Africa*.
- Kenya Navy. (2020). Kenya Navy- Wikipedia. *Kenya Navy- Wikipedia*.
- Kenya Wildlife Service. (2017). Annual report. *Annual report*.
- Ki-Moon, B. (2016). *Role of maritime transport as backbone of global economy*.
- KMA, K. M. (2017). Report of the Auditor General on Kenya Maritime Authority for the year ended June 2017. *Report of the Auditor General on Kenya Maritime Authority for the year ended June 2017*.
- Kothari C. R. & Gaurav . (2014). *Research methodology: Methods and techniques, Third Edition*. Mumbai: new age publishers.
- Kothari, B. S. (2008). The role of Technology in Maritime security: A survey of its development, Application, and adequacy, World Maritime University Malimo, Sweden. *The role of Technology in Maritime security: A survey of its development, Application, and adequacy, World Maritime University Malimo, Sweden*.
- Kula, K. S. (2020). Automatic control of ship motion conducting search in open waters. *Polish Maritime research*.
- L Wenhai. (2019). *Successful Blue Economy*.

- L. Guoxiang & L. Maofeng. (2010). A GIS-Based Decision-making Support System for Maritime Search and Rescue," . *International Conference on E-Business and E-Government*.
- Laurea, M. S. (2017). Dissemination level. *Radar for long distance maritime surveillance and Search and Rescue*.
- Lim, I. F. (2007). Comprehensive Maritime Domain Awareness: an idea whose time has come. *RSIS working paper No. 141*.
- Lim, J. I. (2007). *Comprehensive maritime domain awareness: An idea whose time has come*. Singapore: Nanyang Technical university.
- Lockwood & Ward. (2015). *Measuring the dimensions of adaptive capacity: Psychometric approach*.
- Macharia, H. (2021). Kenya UNveils state of art facility to boost maritime security. *Kenya Broadcasting Corporation (KBC) correspondent*.
- Marcelo. (2021). A Constructivist Approach To Maritime Space. *E- international Relations*.
- Mark. (2001). Maritime regime Building. *Maritime regime Building*.
- Mary Linsky and Ronald Heifetz. (2019). *Leadership on the line*.
- Mbithi, G. (2018). Contribution of maritime security to the effective utilization of maritime resources in Kenya.
- McCann, A. M. (2007). Operationalizing the Proliferation Security Initiative. *NAVAL WAR COLL NEWPORT RI JOINT MILITARY OPERATIONS DEPT*.
- McDorman. (2002). Continental shelf. *The International Journal of Marine and Coastal Law*.
- McGlade et al. (2012). *Blue Economy and Marine Biorefinery*.
- MITAGS. (2021). Maritime Security.
- Moturi, S. K. (2018). *Procurement at the school of business at KCA University*.
- Mugenda & Mugenda. (2009). *Research Methods*.
- Muindi. (1987). Role of shipping in Kenya's national development. *The Maritime Commons*.
- Mwango, C. A. (2020). The Strategic aspects of Kenya's Maritime Security (2008-2020).
- Nachmias, C. F. (2009). *Research Methods in the Social Sciences*.
- Napoli, G. V. (2013). High level Taxonomy of Geovisual Analytics. *Tasks for Maritime Surveillance*.

- NEMA, N. E. (2013). NEMA Report. *NEMA Annual report*.
- Nguma, T. J. (2013). Structural Implications In Strategy Implementation At The Kenya Ports Authority. *Structural Implications In Strategy Implementation At The Kenya Ports Authority*.
- Njiru. (2020). Influence of maritime security on exploitation of blue economy resources.
- Northouse, P. G. (2007). *Leadership theory and practice Fifth Edition*.
- Omer, et al. (2015). A Maritime Research Concept through Establishing Ship Operational problem solution (SHIPOS). *Centre via information technologies with or Ms*.
- Omondi, J. C. (2017). *Improving maritime surveillance in Kenya*.
- Osinowo, A. A. (2015). Combating piracy in the gulf of Guinea. *Africa security brief*.
- Oxford Advance Dictionary. (2020). *8th Edition*.
- Penuin, A. D. (2007). *Authority and Communication in Organizations. Review of Economic Studies*.
- Reva. (2021). 2022 Guidance note PWG, ATWG, ADWG,GD PWG. *REVA 4 WFP 04/2021*.
- Rio. (2019). The maritime space and their Geography.
- Robbins, S.P. & Judge, T.A. . (2016). *Organizational Behavior. 17th Edition, Pearson Upper Saddle River*. Pearson Education Limited, .
- Rosa,Juan and Pablo. (2021). Challenges of Blue Economy. *Evidence and Research Trends*.
- Rothaermel. (2013). *Strategic Management*.
- Rustomiee, C. (2017). Operationalizing the Blue Economy in Small States. *Policy Brief No. 117*.
- Rusuli. (2017). *ICIE 207- Proceedings of the 5th International conference*.
- Schein, E. (2013). *Organizational Culture and Leadership*. Harvard.
- Scott, W. R. (2004). *Institution and Organization*.
- Scott, W. R. (2008). *Institution and Organization Second Edition*.
- Scott, W. R. (2014). *Institutions and Organizations Fourth Edition*.
- Sea surveillance. (2017). Sea Surveillance. *North Atlantic Treaty Organization*.
- Sharma et al. (2013). *Global Journal of Management and Business Studies*. , 309-318.
- Sheena. (2018). Policy challenges and opportunities. *Growing the Philippine Blue Economy*.

- Shibalukha. (2015). The indigenous knowledge and management systems of marine resources among the Giriama community of North Coastal Kenya.
- Smed, U. T. & Wivel. (2017). *"Vulnerability without capabilities? Small states strategy and the international counter piracy agenda,"European security.*
- Smetek. (2019). Competitive advantage.
- Snyder. (2019). Literature review as a research methodology. *Literature review.*
- Spotlight. (2019). Trends in African Maritime Security. *Africa Center for Strategic Studies.*
- Srivastava, Y. (2021). Adaptive Leadership. *Leadership and management.*
- Stritzel, H. (2014). *Securitization theory and the Copenhagen school. In security and translation, New security challenges series,.* London: Palgrave.
- Sydney Education Authority. (2018). What is policy. *Office, Publication.*
- Szpak, Z. L. (2011). *Expert system with application.*
- Teece et al. (1997). Dynamic capabilities and strategic management. *Dynamic capabilities and strategic management, 509-533.*
- Thiele, et al. (2013). Maritime Security- Perspectives for a Comprehensive Approach. *Maritime Security- Perspectives for a Comprehensive Approach.*
- Thompson. (2013). *Does student engagement in self assessment calibrate their judgment over time?*
- Thompson H. (2013). Characteristics of Organizational Environmental Uncertainty. *Administrative Science Quarterly. Vol 17.*
- Tomasz. (2019). The Concept of Maritime Governance in International Relations.
- UIS. (2009). *Guide to measuring information communication technology in education.*
- UNCLOS. (2017). Research and Innovation. *European Union Research and Innovation-maritime surveillance legal framework.*
- UNCTAD. (2018). Trade Development Report. *TDR.*
- UNCTAD. (2020). Review of Maritime transport. *Review of Maritime transport.*
- UNESCO. (2010). *The integration of Information and communication technology for learning and teaching in Ghanaian colleges and Education.*
- Vatin, G. & Napoli, A. (2013). High level Taxonomy of Geovisual Analytics: Tasks for Maritime surveillance. *International catastrophe journal, Germany.*
- Vonk, J. (2017). *Field research conducted in Elementary school.*

- Walker, T. (2020). ISS: Tech innovations key to South Africa Maritime security .
Maritime security.
- Walton Nahm. (2016). How Organizational Climate and Structure affect Knowledge Management. The Social Interaction Perspective. *International Journal of Information Management*. Vol 27.
- Wang Hong. (2012). *Sustainable Development*.
- Wang, S. &. (2020). Robust trajectory tracking control of under actuated surface vehicles with prescribed performance . *Polish Maritime Research*.
- Western Governance University. (2021). Adaptive Theory. *WGU*.
- White, D. (2021). Disadvantages and advantages of information technology. *Business Continuity management*.
- Wiersma & Jurs. (2016). *Research methods in Education: An introduction*.
- Wychorski, H. (2021). United States department of transport. *Volpe Center*.

APPENDICES

APPENDIX 1: Letter of Introduction

Bukhala Levictus Makwaka

P.O. Box 81599-80100,

Mombasa, Kenya.

Dear Respondent,

RE: LETTER OF TRANSMITTAL OF DATA COLLECTION

I am a Kenyatta University postgraduate student pursuing a Master's degree in Public Policy and Administration. For the award of master degree, it is a requirement to undertake a research, the research's title is Effects of Multi-Agency Collaboration and Maritime Surveillance in Mombasa Coast, Kenya.

Therefore, I request for your cooperation in responding to the attached questionnaire.

Your honest and precision response will be important in realizing the research objective.

All information received will be treated with high degree of confidentiality. Your valuable time and participation is highly appreciated.

Yours Sincerely,

Bukhala Levictus Makwaka

APPENDIX II: Research Questionnaire

Instructions: Kindly answer the questions below by ticking the appropriate answer or writing your answer in the space provided.

Section A: Background Information

1. Respondent of Age

18-25 years []

25-30 years []

30-35 years []

Over 35 years []

2. Respondent's Gender

Male []

Female []

3. Maritime agency of the respondent

KMA []

KPA []

Kenya Navy []

Kenya Shipyard Limited []

Kenya Revenue Authority []

Kenya Coast Guard []

Kenya Maritime Police []

4. Academic level of the Respondent

KCPE []

KCSE []

Certificate []

Diploma []

Degree []

Postgraduate Degree []

Section B: Organization Structure

This section seeks your opinion on the effect of organization structure on maritime surveillance in Mombasa Coast, Kenya. Please indicate level of agreement or disagreement on statements in accordance to 5-point Likert scale where; 1= Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree,

	Organization Structure	1	2	3	4	5
a.	Organization structure affects the speed of decision making within the maritime agencies in Mombasa Coast, Kenya.					
b.	The organization structure adopted fosters creation of lean teams at the maritime agencies.					
c.	The organization structure adopted fosters efficient					

	tasks' completion within the maritime agencies in Mombasa Coast, Kenya.					
d.	The organization structure positively increases efficiency solutions delivery to maritime stakeholders.					
e.	The organization structure empowers individual personnel to make decisions relating to the routine tasks they are working on.					

In what other ways is organization structure effecting multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya?

.....

.....

.....

.....

Section C: Staff Competence

This section seeks your opinion on the effect of staff competency on maritime surveillance in Mombasa Coast, Kenya. Kindly indicate your level of agreement or disagreement with the statements using the following 5-point Likert scale where; 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1= Strongly Disagree.

	Staff Competency	1	2	3	4	5
--	------------------	---	---	---	---	---

a.	Organization depends on alterations in performance, perception and conduct of workers commitment to justify Competency.					
b.	The organization implements initiative to boost workers competencies and certify retention.					
c.	In determining the personnel to be trained effective development and assessment plan is conducted in the organization.					
d.	On-the- job training opportunities is greatly capitalized by the organization.					
e.	Follow up after a learning activity of new skills and knowledge is integrated by organization into workers tasks.					

What is the other role of staff competency in effecting multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya?

.....

.....

.....

.....

Section D: Information Technology

This section seeks your opinion on the effect of information technology on maritime surveillance in Mombasa Coast, Kenya. Kindly indicate your level of agreement or

disagreement with the statements using the following 5-point Likert scale where; 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1= Strongly Disagree.

	Information Technology	1	2	3	4	5
a.	Data collection process by field officers at the maritime agencies has significantly improved services by using IT tools.					
b.	Paper based processes in data collection is easier as compared to IT tools.					
c.	Better management department data needs at the maritime agency is facilitated by use of IT tools.					
d.	Decision making process hastened by use of IT data management system in the organization.					
e.	Target monitoring and reporting has significantly improved at maritime agencies as a result of IT use.					

In what other ways is information technology effecting multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya?

.....

.....

.....

.....

Section D: Information Sharing

This section seeks your opinion on the effect of information sharing on maritime surveillance in Mombasa Coast, Kenya. Kindly indicate your level of agreement or disagreement with the statements using the following 5-point Likert scale where; 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1= Strongly Disagree.

	Information Sharing	1	2	3	4	5
a.	Personnel hold brainstorming sessions to come up with suggestions for solving problems concerning maritime surveillance.					
b.	New personnel are assigned mentors to help them on personal work and accelerate their learning.					
c.	Personnel contribute ideas and thoughts to the organization through online discussions.					
d.	Information sharing infrastructure and equipment (internet and intranet) is easily available to all employees at the agencies.					
e.	Recruits share their experiences and knowledge about work with other organizations in meetings.					

State any other information sharing aspect on the effect of multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya?

.....

.....

Section F: Maritime Surveillance

This section seeks your opinion on the effect of maritime surveillance in Mombasa Coast, Kenya. Kindly indicate your level of agreement or disagreement with the statements using the following 5-point Likert scale where; 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1= Strongly Disagree.

	Maritime Surveillance	1	2	3	4	5
a.	Accountability mechanisms ensure that all of the required maritime agencies contribute to the success of maritime surveillance.					
b.	The multi-agency team includes state actors with an interest in the security of Kenya's Coast maritime industry i.e. KMA, KPA, Kenya Navy, KSL, KRA and KCG.					
c.	Maritime surveillance is used for the protection of vessels both internally and externally.					
d.	There is a link between multi-agency collaboration and maritime surveillance in Mombasa Coast, Kenya.					
e.	There is a clear protocol on communication and information sharing modalities within the multi-agency collaboration.					
f.	Maritime diplomacy a tool in enhancing activities of multi-agency collaboration and maritime					

	surveillance.					
--	---------------	--	--	--	--	--

How can we enhance effective maritime surveillance through addressing the current voluntary/ad-hoc participation among maritime multi-agency in Mombasa Coast, Kenya?

.....

.....

.....

.....

Your Cooperation is highly appreciated

APPENDIX III: List of Maritime Multi-Agencies of Study Findings

Kenya Maritime Authority (KMA)

Kenya Ports Authority (KPA)

Kenya Coast Guard Services (KCGS)

Kenya Revenue Authority (KRA)

Kenya Navy (KN)

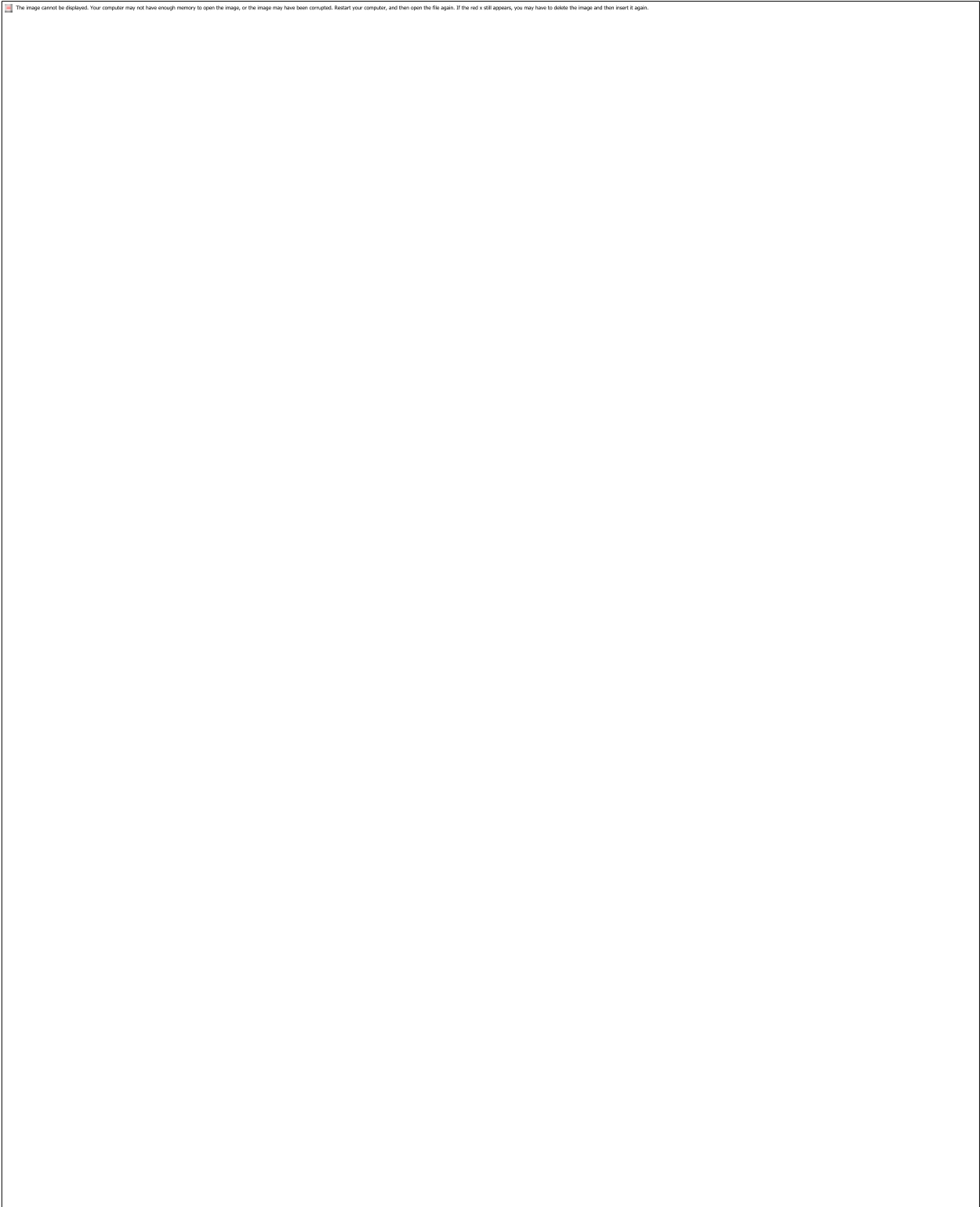
Kenya Maritime Police Unit (KMPU)

Kenya Shipyard Limited (KSL)

APPENDIX IV: NACOSTI Permit

 The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

APPENDIX V:Kenyatta University Approval of Project Research Letter



APPENDIX VI:Kenyatta University Research Authorization Letter

 The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

APPENDIX VII: Ministry Of Interior And Coordination Authorization Letter

 The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

APPENDIX VIII. County Government of Mombasa

APPENDIX IX: County Director of Education Authority Letter

The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

APPENDIX X: Correlation and Regression Analysis

Model Summary

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.931	4	1.733	5.724	.001 ^b
	Residual	19.374	64	.303		
	Total	26.305	68			

a. Dependent Variable: MS

b. Predictors: (Constant), IS, SC, OS, IT

Coefficients Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.898	.445		6.512	.000
	OS	-.064	.113	-.073	-.569	.572
	SC	-.023	.035	-.076	-.672	.504
	IT	.041	.132	.044	.314	.755
	IS	.371	.093	.524	3.983	.000

a. Dependent Variable: MS

APPENDIX XII: A Map of Mombasa County

The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

KEY



Indian Ocean

