EFFECTS OF MARITIME GOVERNANCE IN HARNESSING THE BLUE ECONOMY ALONG THE KENYAN COASTLINE

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Full Length Research

ABSTRACT

Kenya's blue economy potential has not yet been fully exploited. It is estimated that the blue economy, if used properly, has the potential to inject up to 4.8 billion US dollars to Kenya's economy and create over 52,000 jobs in the next ten years, this combined with a sustainable approach should make a difference in the protection of the maritime ecosystem domain. The activities commonly understood to represent the blue economy includes maritime shipping, fishing and aquaculture, coastal tourism, renewable energy, water desalination, undersea cabling, deep sea mining and biotechnology among others. The aim of the study was to determine the effect of maritime governance in harnessing the blue economy along the Kenyan coastline. The objectives were: to determine the effects of maritime defense and security along the Kenyan coastline; The study was guided by environmental governance and precautionary theories. The study adopted a descriptive research design focusing on the coastal county of Mombasa. The study targeted the adult population in Mombasa County. A total of 324 respondents who were involved in the maritime sector form the sample size. However, the target population being small and manageable, purposive and census sampling was utilized to select the participants. Questionnaires were used in data collection. Data were cleaned before coding and entering into the Statistical Package Social Sciences (version 26) for data analysis. The frequency and percentages tables, mean and standard deviation were used to transform quantitative information into meaningful information. The findings revealed that maritime security, maritime defense, maritime safety and maritime ecosystem protection significantly affect the harnessing of the blue economy. The findings established that robust governance frameworks are essential in mitigating threats such as piracy, smuggling, and illegal fishing, which have historically plagued the Kenyan coastline. The study concludes that maritime security and maritime defense significantly affect the harnessing of the blue economy. Effective maritime governance plays a crucial role in harnessing the blue economy potential along the Kenyan coastline. The study recommends that Government of Kenya should continue investing in maritime security measures by strengthening cooperation with international partners, enhancing surveillance capabilities, and implementing effective strategies to combat piracy and illegal fishing activities. This will safeguard maritime resources and create a secure environment for economic development.

Keywords: Maritime Security, Defense and Blue Economy.

INTRODUCTION

A country's improved livelihoods is extremely important. According to the International Maritime Organization (2009), the industry contributes to 90% of global trade and employs more than a million seafarers from all over the world. Over 140 million square miles, or more than 70% of the earth, is covered by the oceans. Over 10,000 oceangoing ships and over 10,000,000 fishing boats can currently navigate the world's oceans, seas, and waterways. More than six billion tonnes of cargo are transported by sea every year, with 46,000 vessels supplying more than 4000 ports with this cargo. Energy supplies now make up a larger portion of that commerce, and it is anticipated that global oil demand will increase by more than 100 million barrels per day by 2025 ((Andrikopoulos, Merika & Sigalas, 2022). The important bit of our trade and success that entails connections and cautious policies ensuring sustainability contains difficulty in estimating its total worth. Implementation of national and international laws and regulations including other instruments help address some problems which were not solved and also ones that may arise in future.

In the United States, the blue economy contributes significantly to the country's GDP, with the maritime sector playing a vital role in driving economic growth. According to the Organization for Economic Co-operation and Development (OECD, 2016), the maritime industry in the U.S. generated over $33 billion in revenue in 2016 alone. This highlights the importance of effective maritime governance in fostering economic prosperity and sustainable development in coastal regions. Johnson (2019) emphasized the need for robust regulatory frameworks and enforcement mechanisms to ensure the sustainability of maritime activities and the protection of marine ecosystems.

In South Africa, the blue economy has been identified as a strategic priority for sustainable development and social equity. The Department of Environment, Forestry, and Fisheries (2019) highlighted the government's commitment to promoting the blue economy through initiatives that empower local communities and ensure equitable access to marine resources. Bennett (2018) pointed out the importance of community-based fisheries management in South Africa as part of broader efforts to address historical inequalities and enhance the livelihoods of coastal communities.

Countries have invested heavily in maritime governance to reap the benefits that the blue economy portends. The world Ocean Council (WOC) published a report titled "Maritime Governance in the Blue Economy; Overview and Opportunities" in 2020 that provides an explanation of the current state of maritime governance and identifies key opportunities for improving governance frameworks. The Blue Economy needs maritime governance to function (Voyer, Schofield, Azmi, Warner, McIlgorm & Quirk, 2018). For example, Norway has a strong maritime tradition and it's a leader in the blue economy and through its effective maritime governance, Norway has been able to sustainably harness the potential of its oceans, creating economic opportunities while protecting the environment.

African governments have had a recognition regarding the challenges addressed and regional organizations have strengthened maritime governance. A key priority has been the development of national and regional policy frameworks, including maritime strategies, maritime domain awareness and human capacity development. African nations have adopted the ambitious agenda 2063, which aims to bring about lasting change in Africa through stronger cooperation, in order to harness the continent's potential (Rudiawan & Saleh, 2019). They can achieve this by capitalizing on development opportunities and harmonious collaboration among countries and stake holders, strong institutional capacity and effective policy frame works to ensure the productive enforcement of sustainable ocean governance practices. Initiatives to develop sustainable and integrated ocean management have been developed by Economic Community of West African states (ECOWAS) and also the India Ocean Rim Association (IORA). Locally, The Kenyan coastline is approximately 623 km on the Indian Ocean presenting a great potential for a rise of a thriving improved livelihoods. A wide range of marine life like fish, corals and sea turtles in the Kenyan waters is a great habitat and has benefited many financially. The total fishing potential of Kshs. 90 billion but only Kshs. 2.3billion was realized and this shows untapped potential that remains unrealized (Rasowo, Orina, Nyonje, Awuor & Olendi, 2020).

Kenya is a country that has made significant strides in harnessing its blue economy through effective maritime governance. In 2018, Kenya launched its first ever Blue Economy Conference that generated over 16,000 members from various regions to discuss ways to harnessing tackle the country's maritime resources sustainably. The conference highlighted the importance of maritime governance in promoting economic growth and also job creation (Lewis & Ernstson, 2019). The country also launched its Blue Economy Implementation Strategy, which outlines a comprehensive approach to managing maritime activities and resources. Kenya Maritime Authority (KMA) is a body responsible for regulating and promoting shipping, trade and the use of Kenyan waters and is mandated to develop policies and strategies for effective management of maritime resources, protecting the marine environment, and enhancing maritime safety and security. The authority has also been instrumental in promoting the development of maritime infrastructure, such as ports and harbors, which are crucial for countries economic growth (Perwita & Sukma, 2018).

The inauguration of the Kenya Coast Guard Service compromising the 11 multi-agency maritime stakeholders depicts the government's commitment to maintaining maritime defense, security, safety and maritime ecosystem protection as well as pollution control and sanitation (Ruggunan & Kanengoni, 2017). Kenya has developed a range of policies and strategies to promote sustainable maritime development, including the Kenya National Shipping and Maritime Transport policy, The Kenya Maritime Transport and Logistic Master Plan and The Blue Economy Strategy. These policies aim to promote sustainable shipping, improve port infrastructure and logistics and support growth of Kenya's economy. Kenya being part of the Western Indian Ocean Marine Science

Association (WIOMSA) encourages marine science and sustainable management of the Western Indian Oceans by bringing together researchers, policy makers, practitioners to discuss the latest trends and challenges in marine science and governance in the region (Markopoulos & Luimula 2020).

Maritime governance refers to the administration of human actions by governments and other stakeholders (Rasowo, Orina, Nyonje, Awuor & Olendi, 2020). These are set of rules, regulations and institutions that govern the use of world's oceans and seas. There has been a significant effort to establish effective maritime governance frame works at the national, regional and international level, which encompasses big security issues, safety, environmental protection, fisheries management, shipping and marine spatial planning. Effective maritime governance is essential for the development of tackled economic growth with environmental protection including social equity too. A key principle of effective maritime governance includes the following approaches: Which involves coordination of policies and actions across different sectors and levels of governance with an aim to improve environmental performance and ensure sustainable use of maritime resources (Saeed & Saeed, 2020).

Maritime governance is essential for achieving a sustainable blue economy. However, there are several challenges that must be addressed to ensure effective governance. These challenges include the lack of effective enforcement mechanism, the lack of coordination and cooperation between stakeholders, and the need for increased investment in research and development, streamlines issues on jurisdictional boundaries, lack of technical and institutional capacity to implement maritime governance frameworks, lack of modern technology advancement capabilities (Perwita & Sukma 2018). By addressing these gaps in maritime governance will require a concerted effort by all maritime stakeholders that govern the use of the world oceans and seas.

The blue economy, according to Sheena (2018), is a variant of the "green economy" tailored for our seas and oceans aiming to bring about development. According to Rosa, Juan, and Pablo (2021), blue growth supports the marine and maritime industries' sustainable expansion because the water bodies are a major support system of the global economy and have a big chance to be productive. Gunter Pauli presented the idea of blue economy where all countries must rely on maritime trade in order to purchase and sell products because none is a hundred percent sufficient. Maritime transit is the foundation of the international trade and world's economy and with its much-hyped benefits such as ecosystem and maritime space it does not operate in isolation. Job creation and economic expansion is well recognized by the blue economy as well as roles played by oceans in the global and climate ecosystem seeking to leverage oceans resources enabling balanced economic, social and environmental objectives promoting resilience and sustainability for a long time (Okemwa, 2019).

The United Nation has recognized the blue economy as a key component to encourage 2030 agenda for continuous growth and many countries are developing policies and

initiatives to promote the blue economy as the path way to sustainable development (Kiswaa, 2020). Kenya had the honor of hosting the first high-level conference on the subject. Innovations and brand-new systems for the water bodies as well as maritime governance practice have been placed to ensure continuous exploitation of the oceans for economic development for present and coming generations. The potential of the blue economy to the country has not been fully exploited. The major problem that affects the realization of the full potential of the exploitation emanates from lack of good governance frameworks. Thus, maritime governance must keep working in advancing the blue economy. Previous studies have not been conclusive on the role of maritime governance in harnessing the livelihoods along the Kenyan coastline.

Statement of the Problem

The coastal region of Kenya holds immense potential for the development of the blue economy, encompassing activities such as fisheries, tourism, shipping, and the sustainable use of marine resources (Guerreiro, 2021). However, the successful harnessing of these opportunities is intricately tied to the effectiveness of maritime governance in addressing key issues. A sustainable blue economy will allow society to obtain value from the oceans and coastal regions, while respecting their long term capacity for regeneration and restoration of ecosystem health. The sustainable blue economy contributes to climate change mitigation by promoting renewables sources like off shore wind and wave energy, reducing greenhouse gas emission, and protecting vital carbon sinks, such as mangroves and sea grasses. The major problem that affects realization emanates from limited resources, lack of effective ocean management framework for regulation and sustainable management of maritime activities. The eastern Africa region faces challenges of illegal and unregulated fishing, piracy and armed robbery, maritime terrorism, illicit trade in crude oil, arms proliferation, drugs and human trafficking, smuggling of contraband goods; degradation of marine ecosystem through discharge of oil, the dumping of toxic waste, illegal sand harvesting and the destruction of coral reefs and coastal forest (Charo, 2021).

Kenya also suffers from fragmented management of coastal zone, lack of capital, minimal participation by citizens, incoherent benefits sharing regime and bio diversity loss amongst others (Bennett, Blythe, White & Campero, 2021). There have been several studies on maritime governance for a sustainable blue economy, highlighting the importance of a holistic approach to managing maritime activities. These studies continue to provide valuable insights into the multifaceted challenges of managing maritime activities and offer solutions for improving governance frameworks and promoting sustainable development. Achievable maritime governance practices require a concerted effort by governments, industry and civil society to build the necessary infrastructure, policy frameworks and capacity to effectively manage and sustainably use ocean resources. However, the effective harnessing of the blue economy is significantly influenced by the prevailing maritime governance framework. This study sought to explore the effects of maritime governance on the successful utilization of the blue economy along the Kenyan coastline.

Objectives of the Study

The study was guided by the following research objectives;

i.   To identify the effect of maritime security in harnessing the blue economy along the Kenyan coastline

ii. To establish the effects of maritime defense in harnessing the blue economy along the Kenyan coastline.

LITERATURE REVIEW

The study was guided by theories providing anchorage, empirical literature and a conceptual framework as outlined below:

Theoretical Framework

Environmental Governance Theory

The Environmental Governance Theory presents the process of managing human activities to protect the environment and ensure its sustainability (Taherdoost, 2018). This theory supports the idea of maritime governance, where governments and other stakeholders work together to develop policies, laws, regulations, and institutions that guide the continuous use of water bodies. Environmental sector is the sector that theory's proponents have majorly focused on.

This theory relates a number of actions that, in the context of this study, would be considered to be routine non-security items and portrays them as important security issues that need to be addressed in order to protect the maritime environment and the economic activities that take place there. For instance, the contamination of the maritime environment, which for a long time remained a non-serious issue, has recently been securitized by many stakeholders including politicians, security professionals, and environmentalists, and has become a major security concern. The environmental governance theory is at the core of maritime governance for harnessing the blue economy along the Kenyan coastline. Environmental governance recognizes the importance of involving all stakeholders in alternative resolutions and implementation to make sure all interests be considered and also integrated into governance frameworks (Venkatesh, Thong, & Xu, 2016).

The Precautionary Theory

According to Colman (2016), this theory states that if an action of policy can lead to potential harm to the public or the environment when scientific consensus is missing, those supporting the action will carry the burden of proof. Considering the ocean, the preventive thesis proposes that if there is uncertainty about the impacts of a particular human activity, then precautions should be taken to prevent harm to the marine environment. According to Evans & Tourish (2017), the primary premise of this theory, is that much of certain behaviors cases may be considered normal become severe security challenges and are precaution in the context of this study. For instance, the precautionary measures by various stakeholders, including politicians, security experts, and environmentalists, has turned contamination of the aquatic ecosystem that have been non-concerns for a period of time turning into serious security worries in recent

years. This theory supports the need for effective maritime governance to manage human activities in the ocean and ensure their sustainability.

Empirical Review

Upon the study of objectives, this section of the study focuses on findings from prior research. It explores, reviews, and summarizes earlier works on maritime defense, and security, as they are operationalized in this study.

Maritime Security in Harnessing the Blue Economy

Protection of vessels is paramount globally for the improvement of livelihoods. According to the United Nation Conference on Trade and Development (UNCTAD), improved livelihoods have a potential to come up with up to $3 trillion worldwide by 2030. However, this potential can only be realized if there is a secure maritime environment that enables the continuous use of water bodies. Hostile attacks such as piracy, armed robbery, and terrorism can deter investment in the improved livelihoods and disrupt maritime trade, investments and resource exploitation. Several studies have been conducted to explore similar relations between vessel protection and expansion of improved livelihoods.

Protection of vessels is crucial for sustaining the Blue Economy, according to Voyer, Schofield, Azmi, Warner, McIlgorm, and Quirk (2018). The Blue Economy idea has received a lot of support, specifically in the water body region, from numerous malware groups. The study looked specifically at the ocean and examined how the improved livelihoods and maritime security agendas have co-evolved and depended on one another. Interests in vessel protection and improved livelihoods were shown to interact primarily in two ways. First and foremost, vessel protection aids in the development of the improved livelihoods such as upgrading specific oceanographic data for the aquatic industry and defending ownership rights of aquatic ecosystem zones.

Waterborne security is essential for the harnessed blue economy as it secures the diverse economic activities in the coastal regions. Chan et al. (2018) examined the challenges and risks faced by the global shipping industry and propose a risk management framework to reduce these risks. The authors discuss the need for an integrated approach that addresses the economic, security and environmental challenges faced by the shipping industries. Similarly, Bjarnadottir and Cao (2019) explore the potential security risks to marine renewable energy in the European Union. The authors suggest a vulnerability assessment frame work for marine renewable energy infrastructure, addressing the threats of cyber and physical attacks, accidents and environmental risks.

The aim of maritime security is to protect economic assets related to the improved livelihoods. Bueger and Timothy Edmunds (2017) in their article "Aquatic protection of vessels security and the improved livelihoods: A Critical Nexus", the authors suggest that a comprehensive and integrated approach to maritime security is required. They proposed that the coastal states should adopt a holistic strategy that combines law enforcement, maritime governance and international cooperation. Such an approach would involve strengthening maritime institutions,

enhancing surveillance capabilities, promoting information sharing mechanisms and facilitating collaboration between states and other stake holders.

Mello et al (2019) investigated the security challenges and response strategies related to the petrol industry. The author argues that collaboration among stakeholders is crucial especially in assessing vulnerabilities, identifying threats and developing solutions. Barros (2022) acknowledges that, despite Brazil's changed diplomatic goals since 2019, the Blue Amazon paradigm has kept the maritime security and safety issue relatively steady. The author looked at the domestic, regional, and international systems that Brazil's marine security and safety were a part of. Brazil doesn't have any rivals in the region, but the 2019 Black August oil catastrophe, which poisoned a significant portion of the Kenya's coastal side, may be seen as a turning point because it compelled Brazilian officials to re think on how to put the issue in public. The author offers Brasilia three entrance points to consider employing the strategic diplomacy strategy framework in the near future. These relate to international and regional cooperation programmers, Antarctica governance, and the relationships between maritime security and safety.

Maritime Defense in Harnessing the Blue Economy

Effective maritime governance is effective in enhancing maritime security and defense by shaping the security environment in which maritime defense operates in, which significantly impacts the effectiveness of a country's maritime defense strategy. Maritime defense globally involves the measures taken by nations to protect their maritime interests, including the waters in their territories, exclusive economic zones (EEZs) and waters abroad by patrolling, surveillance, interdiction and response capabilities to deter and address security threats at sea. Maritime crimes have negatively influenced the improved livelihoods activities both on open water and exotic areas and are one of the key barriers to the full exploitation and improved livelihoods worldwide.

Maritime defense supports the improvement of livelihoods by ensuring the safety and security of maritime environment, trade and transportation. This approach is crucial as maritime security is vital for international trade, energy resources, and protection against piracy, illegal fishing, smuggling, and terrorism encourages the maritime stakeholders to investments in the marine industries like shipping, tourism, and clean energy contributing to employment opportunities and development.

Maritime defense and the harnessed blue economy are closely related as they both involve the sustainable use and protection of aquatic ecosystems from maritime threats. A harnessed blue economy can contribute to maritime defense by providing economic opportunities that can deter illegal activities in the ocean. For example, sustainable fishing practices can provide livelihoods for local communities and reduce the need for illegal fishing. This can also promote the conservation of marine resources, which can be crucial for national security. Several global initiatives and frameworks have been established to enhance maritime defense for example, European Union Naval Force Operation Atlanta is a European Union led piracy mission around the Gulf of Aden and off Somalia coastline. It role reduces piracy and armed robbery at sea,
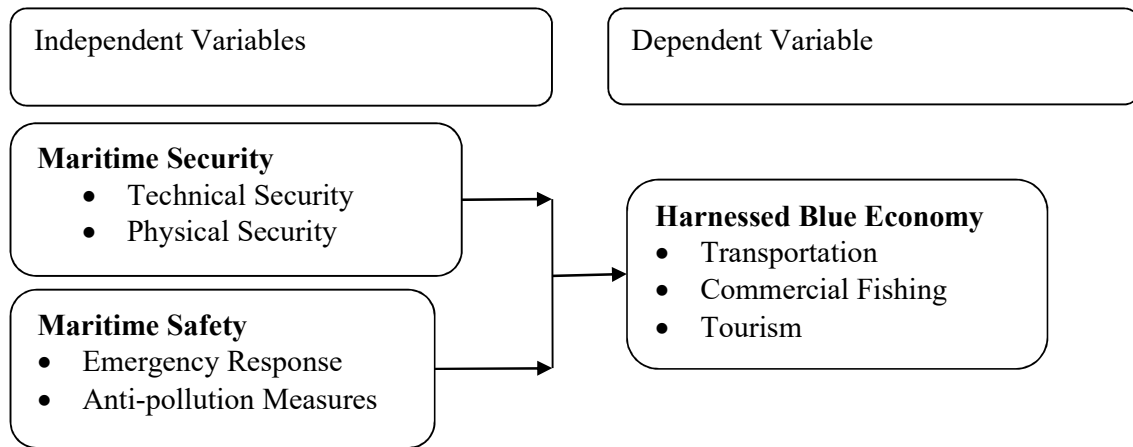
and has been successful in cubing piracy incidents in the region such initiatives have demonstrated the importance of a global approach to maritime defense, emphasizing cooperation, coordination and information sharing among nations. By working together, countries can effectively address maritime security challenges and ensure the safety and stability of the world's oceans.

Globally, several countries have invested heavily in maritime defense. According to Perwita and Sukma (2018), a nation's sphere of national interests develops automatically as its economy grows. In order to better secure its national interests, China has been modernizing its military in tandem with its swift economic expansion. China has also been rapidly expanding its maritime defense capabilities in recent years. It has built a significant naval presence in South China Sea containing territorial rivalries with several countries close to them. China has also invested in advanced naval technologies, including air craft carriers, sub marines and missile systems.

Kenya being a coastal nation in East Africa has recognized the importance of maintaining a strong military defense capability in order to harness its blue economy. Improving livelihoods requires Kenya to secure exclusive space creating safe, secure and favorable aquatic ecosystems. Kenya's maritime defense preparedness involves various aspects such as the protection of aquatic vessels with strategies which in the process intends to create a shared vision for securing the country's security domain, as well as the enhancement of the naval capabilities. The Kenya Navy is responsible for defending and protecting the rights of the republic of Kenya against sea borne external aggression with a primary role of protecting Kenya's Exclusive Economic Zones by conducting maritime patrols, participating in regional and international cooperation, supporting the national development agenda and enhancing her naval capabilities by acquiring new vessels, equipment, infrastructure and training to create a lean, adaptive and mission ready force. Considering the unique geographical location along the Kenya Somali boarder there has been need to improve the security measures since the coastal regions have already accepted the blue economy agenda. Maritime domain has been secured due to the Navy base along the coast.

Conceptual Framework

The Independent variables are maritime security and maritime defense. Maritime security indicators are technical security and physical security. The indicators for maritime defense are anti-piracy measures and anti-maritime terrorism measures. Response variable is improving livelihoods. Commercial fishing, transportation and tourism are the indicators of changeable response.

Independent Variables		Dependent Variable

Maritime Security
- Technical Security
- Physical Security

Maritime Safety
- Emergency Response
- Anti-pollution Measures

Harnessed Blue Economy
- Transportation
- Commercial Fishing
- Tourism

RESEARCH METHODOLOGY

The study adopted descriptive correlational research design. This design aimed to identify and analyze the relationships between maritime governance practices and the outcomes in the blue economy. Kenya is blessed with a wide variety of water features, from small streams and water pans to large lakes and lengthy, winding rivers. The nation shares a boundary with the Indian Ocean on its southeast side. The particular maritime ecosystems and their near environs will be the main subject of this investigation. Therefore, the focus of this study was the coastal county of Mombasa in Kenya. This county was chosen because it heavily depends on the marine environment, specifically the ocean, for economic operations. Additionally, due of its size and position, it must deal with a variety of problems that were of relevance to this study, including pollution brought on by humans and security threats from both internal and external aggressors. These elements subsequently have an impact on the maritime commercial activity in this area and, indirectly, Kenya's blue economy.

Target populations were 1688 persons working at sea fearers, Kenya ports authority, marine police, ministry of tourism, Kenya maritime authority, dock workers' union, ministry of devolution and planning, ministry of foreign appears fisheries department. Since the study target population (N) was 1688, with precision level of 0.05; the sample size was determined

$n = 1688 / [1 + 1688(0.05)^2] = 324$

Therefore, 324 respondents formed the sample size and were drawn proportionately from the target population

The study utilized questionnaire to collect data. The questionnaires were administered to the selected respondents. Questionnaires collected both quantitative and qualitative data. The questionnaire had five sections; A, B, C, D and E. Section A collected demographic information of respondents while B collected data on maritime security in harnessing the blue economy, Section C collected data on maritime defense harnessing the blue economy. All 30 wards, in the study area were visited to guarantee that respondents from the county are evenly distributed among the respondents. From each of the wards approximately 12 individuals from the public were requested to participate in the study. On average, two wards were covered each day for a period of 15 days.

Data verification and cleaning were the first steps in the analysis process. The data were then coded and summarized to facilitate analysis. Qualitative and quantitative data were gathered. The qualitative data were grouped based on the study's objectives. Themes were generated based on the analysis. The quantitative data were analyzed descriptively and inferentially using the Statistical Package for Social Science (SPSS v. 26).

RESULTS AND FINDINGS

The researcher distributed 324 questionnaires to maritime multi-agency stakeholder. A total of 280 questionnaires were dully filled and returned to the researcher. This gave a response rate of 86.4% which is deemed sufficient for the study. Demographics data showed that 153 (54.6%) of respondents were male, while 127 (45.4%) were female. Age distribution showed that 35.0% of the respondents were aged between 36-45 years, 26.4% between age of 26-35 years, 17.5% between age of 46-55 years, 12.9% were above 55 and above years and only 8.2% were aged between 18 and 25 years. Highest level of education attained indicated that majority of the participants had attained tertiary education as their highest educational level as presented by 126(45.0%) and followed by those with university degree as presented by 90(32.1%). Further, 64(22.9%) had attained secondary education.

Descriptive Statistics

This study utilized mean and standard deviation to present the summary measures of the sample that was observed. Analysis of descriptive statistics was conducted on the basis of the data collected on the variables that were at the core of this study. The basic feature of the observed sample formed the basis for quantitative data analysis for this study.

Maritime Security and Harnessing of Blue Economy

Several statements on the how maritime security affect the harnessing the blue economy were identified by the researcher. Respondents were asked to indicate the extent of their agreement with each statement and how it has affected the harnessing the blue economy. A scale of 1-5 where 1= strongly disagree, 2= disagree, 3= moderately agree, 4 = Agree and 5 = Strongly agree was used. The findings are as shown in Table 1

Table 1 Descriptive Statistics for Maritime Security in Harnessing the Blue Economy

Statements	Mean	Std. Dev
There is presence of police officers who provide security along the coastline.	3.59	0.637
There are adequate police stations along the coastline.	3.67	0.654
Response to security along the coastline is fast	3.65	0.662
The security agencies collaborate with the public to get crucial security information.	3.62	0.658
There is a police hotline to report security concerns along the coastline.	4.12	0.657
Average scores	**3.73**	**0.654**

Source: Field Data (2024)

The findings presented in Table 1 revealed that majority of the respondents agreed that there is presence of police officers who provide security along the coastline (mean = 3.59; Std. Dev = 0.637). The respondents also agreed that there are adequate police stations along the coastline (mean = 3.67; Std. Dev = 0.654). Further, most participants agreed that response to security along the coastline is fast (mean = 3.65; Std. Dev = 0.662). By ensuring safety and stability at sea, maritime security measures contribute to creating a conducive environment for economic activities such as fishing, tourism, shipping, and offshore mining. This is supported by Mwangi and Mbaria (2019) who established that properly enforced maritime security measures safeguard against piracy, illegal fishing, and other criminal activities that can deter investment and economic growth within the marine sector.

Furthermore, the findings revealed that most respondents agreed that security agencies collaborate with the public to get crucial security information (mean = 3.62; Std. Dev = 0.658). Also, most respondents agreed that there is a police hotline to report security concerns along the coastline (mean = 4.12; Std. Dev = 0.657). The country may realize the full economic potential of its marine resources by giving maritime security measures top priority and making the necessary investments, opening the door for long-term growth and development in the blue economy. This agrees with Kiereini and Njiru (2017) who revealed that secure maritime environment encourages foreign and domestic investments in the blue economy by instilling confidence in potential investors regarding the safety of their assets and operations in Kenyan waters. This, in turn, leads to increased job opportunities, revenue generation, and overall socio-economic development along the coastal regions of Kenya. Through international collaborations and partnerships, Kenya can enhance its maritime security capabilities, benefiting not only its own economy but also contributing to regional stability and cooperation in the East African region (Tonui, 2016).

From the qualitative data, it was noted that;

> *The country has made significant strides in enhancing its maritime security infrastructure through initiatives such as the establishment of the Kenya Coast Guard Service and collaborations with international partners to combat piracy, illegal fishing, and other maritime crimes. These efforts have helped to improve the safety and security of the waters off the Kenyan coastline, reducing incidents of piracy and increasing surveillance capabilities to respond to security threats promptly.*

The presence of robust maritime security measures was found to be a crucial factor in promoting economic activities such as fishing, shipping, and tourism. Employees highlighted that improved security not only instills confidence in investors but also ensures the safety of maritime trade routes, thus facilitating smoother transport of goods and services. The findings suggest that a secure maritime environment is essential for the sustainable development of the blue economy in Kenya, attracting both local and international investments.

Maritime Defense and Harnessing of Blue Economy

Several statements on the effect of maritime defense in harnessing the blue economy along the Kenyan coastline were identified by the researcher. Respondents were asked to indicate the

extent of their agreement with each statement regarding the maritime defense and how it has affected the harnessing of the blue economy. The findings are as shown in Table 2.

Table 2: Descriptive Statistics for Maritime Defense in Harnessing the Blue Economy

Statements	Mean	Std. Dev
Anti-piracy measures have assisted to enhance the blue economy.	3.64	0.661
The anti-maritime terrorism measures have been effective in enhancing maritime defence.	3.67	0.658
Commercial fishing along the coastline has been enhanced through adequate antipiracy measures	3.51	0.663
Maritime transportation has been enhanced through elaborate security measures by the security agencies	3.63	0.657
The anti-terrorism laws have enhanced maritime tourism along the Kenyan coastline.	3.69	0.655
Average scores	**3.63**	**0.659**

Source: Field Data (2024)

The findings presented in Table 2 uncovered that most respondents agreed that anti-piracy measures have assisted to enhance the blue economy (mean = 3.64; Std. Dev = 0.661). The respondents agreed that anti-maritime terrorism measures have been effective in enhancing maritime defence (mean = 3.67; Std. dev = 0.658). Also, most respondents agreed that commercial fishing along the coastline has been enhanced through adequate antipiracy measures (mean = 3.51; Std. Dev = 0.663). Effective maritime defense mechanisms are essential for safeguarding the country's marine resources and infrastructure from external threats such as piracy, illegal fishing, and maritime terrorism. This agrees with Mwangi and Mbaria (2019) who established that maritime defense operations help to provide a safe environment that is favorable to economic activity within the blue economy sector by preventing and responding to security threats at sea. A strong maritime defense plan will help deter possible conflicts over marine resources, foster collaboration with neighboring nations, and strengthen Kenya's position as an important player in the development of the blue economy in East Africa. The government, navy, coast guard, and other stakeholders must work together to ensure the effective implementation of marine defense measures that support Kenya's blue economy's long-term growth **(**(Kenya Maritime Authority, 2021).

Also, the findings presented in Table 4.4 revealed that most participants agreed that maritime transportation has been enhanced through elaborate security measures by the security agencies (mean =3.63; Std. Dev = 0.657). Further, most respondents agreed that anti-terrorism laws have enhanced maritime tourism along the Kenyan coastline (mean = 3.69; Std. dev = 0.655). Kenya secures its maritime assets, promotes economic growth in the blue economy sector, and contributes to the region's overall stability and prosperity by investing in strong marine defense capabilities and developing domestic and international cooperation. The findings are supported by the findings of a study by Perwita and Sukma (2018) who established investments in maritime defense capabilities not only protect Kenya's maritime interests but also enhance the country's regional influence and standing in international maritime governance initiatives. From the qualitative data, it was noted that;

> *Effective maritime defense policies provide stability and security, thereby creating a conducive environment for economic activities such as fisheries, shipping, tourism, and offshore energy production to thrive. Additionally, robust maritime defense measures create a sense of trust and reliability among nations, leading to enhanced local and international collaborations in areas such as joint naval exercises, information sharing, and coordinated responses to maritime threats. Such partnerships not only strengthen security but also boost economic cooperation and facilitate the sustainable management of marine resources on a global scale.*

Through the lens of maritime defense and its impact on the blue economy along the Kenyan coastline, key insights emerged. Employees emphasized the pivotal role of a well-equipped and trained naval force in safeguarding maritime resources and deterring threats such as piracy and illegal fishing activities. The findings underscored that a strong maritime defense strategy not only protects coastal communities and ecosystems but also promotes a conducive environment for economic growth.

Harnessing of the Blue Economy

Several statements on the harnessing of the blue economy were identified by the researcher. Respondents were asked to indicate the extent of their agreement with each statement in regard to harnessing of the blue economy. The findings are as shown in Table 3

Table 3 Descriptive Statistics for Harnessing of the Blue Economy

Statements	Mean	Std. Dev
Transportation of goods and people along the coastline is smooth.	3.42	0.637
There is responsible commercial fishing along the Kenyan coastline.	3.46	0.647
Tourism is thriving along the Kenyan coastline.	3.49	0.664
There is legal mining activities along the Kenyan coastline.	3.55	0.631
There is adequate security along the Kenyan coastline.	3.61	0.653
Average scores	**3.51**	**0.646**

Source: Field Data (2024)

The results in Table 3 established that respondents agreed that transportation of goods and people along the coastline is smooth (mean = 3.42; Std. Dev = 0.637). Also, the respondents agreed that there is responsible commercial fishing along the Kenyan coastline (mean = 3.46; Std. Dev = 0.647). Further, the respondents agreed that tourism is thriving along the Kenyan coastline (mean = 3.49; Std. Dev = 0.664). Effective maritime governance in Kenya contributes to enhancing maritime security and safety, which are essential for unlocking the full economic potential of the blue economy. The presence of clear regulations, enforcement mechanisms, and cooperation frameworks among relevant stakeholders can help combat illegal fishing, piracy, and other maritime crimes that threaten economic activities in coastal and offshore waters. The findings concur with the findings of a study by Mbaru (2020) who established that promoting maritime security through governance mechanisms not only protects marine resources but also creates a conducive environment for investments and trade, fostering economic growth and stability in the blue economy sector.

Furthermore, the results presented in Table 4.7 revealed that most participants agreed that there is legal mining activities along the Kenyan coastline (mean = 3.55; Std. Dev = 0.631). Also, the respondents agreed that there is adequate security along the Kenyan coastline (mean = 3.61; Std. Dev = 0.653). This implies that emphasizing good governance principles in policy creation and implementation is critical to reaping the full advantages of the blue economy and guaranteeing long-term prosperity for Kenya's maritime resources and communities. The findings are supported by Manyara and Wanyonyi (2018) who established that robust governance frameworks are essential for promoting responsible stewardship of marine resources and balancing economic growth with environmental conservation. In the context of the blue economy, strong maritime governance in Kenya is necessary to create a conducive environment for investments, innovation, and sustainable practices in various sectors such as fisheries, tourism, and renewable energy.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The study concludes that maritime security, maritime defense, maritime safety and maritime ecosystem protection significantly affect the harnessing of the blue economy. Effective maritime governance plays a crucial role in harnessing the blue economy potential along the Kenyan coastline. Robust maritime defense strategies enable the protection of maritime borders and sovereignty, ensuring a secure environment for economic activities to thrive. Kenya protect its maritime resources from dangers like piracy and illegal fishing by boosting maritime security in collaboration with international partners. Furthermore, prioritizing maritime safety through regulations, training programs, and advanced technology enhances the overall operational efficiency of maritime activities. This not only reduces the risks of accidents and environmental disasters but also instills confidence in investors and stakeholders in the blue economy sector. Moreover, sustainable maritime ecosystem protection measures are essential for preserving the rich biodiversity and maintaining the ecological balance of the marine environment.

Recommendation

From the findings, the study recommends that;

i. Government of Kenya should continue investing in maritime security measures by strengthening cooperation with international partners, enhancing surveillance capabilities, and implementing effective strategies to combat piracy and illegal fishing activities. This will safeguard maritime resources and create a secure environment for economic development.

ii. The ministry of internal security should put concerted effort to bolster maritime defense capabilities through investments in naval assets, training programs for personnel, and the establishment of a robust maritime defense strategy. This will not only protect Kenya's maritime borders and sovereignty but also contribute to regional stability and security in the waters surrounding the country.

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