
| RESEARCH ARTICLE

Prevalent Maritime Insecurity Threats to Sustainable Economic Development in Africa: Implications for Regional Integration and Policy Reform

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| ABSTRACT

Maritime insecurity has emerged as the most destabilizing threat to the economic sustenance of Africa, crippling the region's strategic waterways that serve as the lifeline of trade, energy supply, and blue-economy growth. This study investigates the implications of maritime insecurity threats on economic sustenance in Africa. Three objectives, three research questions and one hypothesis were proposed, answered and tested respectively in this study. Data was generated from 242 respondents, comprising of security agencies, maritime regulatory institutions and commercial maritime operators, using researchers' developed questionnaire titled 'Prevalent Maritime Insecurity Threats and Sustainable Economic Development Questionnaire (PMITSEDQ)'. Using descriptive statistics and multiple regression analysis with qualitative insights from case studies, the researchers found out that piracy is the most prevalent, most common and the main dominant maritime insecurity threat in the gulf of guinea. Again, findings revealed that maritime insecurity has a high influence on all measured socio-economic indicators, indicating severe disruptions to shipping operations, capital inflows, and port competitiveness. Result also revealed that maritime insecurity management frameworks are not adequate and effective, indicating gaps in implementation, enforcement, and compliance. Consequently, the researchers concluded that piracy exert substantial influence and constitute a critical threat on regional trade flows, seafarers' safety, shipping operations, and economic stability. Based on the conclusion, the researchers recommended for prioritizing anti-piracy interventions in policy, resource allocation, and security operations.

| KEYWORDS

Maritime insecurity, piracy, threats, maritime operations and sustainable economic development

| ARTICLE INFORMATION

ACCEPTED: 21 October 2025

PUBLISHED: 18 December 2025

DOI: 10.61424/rjbe.v3.i4.598

1. Introduction

African's coastal environment has emerged a focal point of regional and international concern as a result of prevalent cases of maritime insecurity, reflecting in sea-pirate, kidnapping, rampant illegal, unreported, and unregulated fishing, armed robbery, bunkering and allied oil-associated crimes. Pirate activities are defiant acts against established maritime rules and regulations. The targets of sea pirate is usually seizing of goods, valuables and in some occasions, the stealing of ship itself. Within African countries' territorial waters, sea pirate is targeted at stealing of outboard engines, valuables and boats. Official reports and media definitions of maritime insecurity threats in both territorial and international waters are the same. However, the scope of maritime crimes under the

United Nations Convention on the Law of the Sea, deals with the acts carried out on the high seas. For instance, an act of piracy that take place within territorial waters are not defined as maritime insecurity under international law.

Africa's international water is a choke point for the transportation and exchange of energy, oil, manufactured products, equipment and mineral resources. Africa's strategic location along major shipping lanes, including the Suez Canal, makes it a critical hub for international trade, connecting Europe, Asia, and the Americas. Maritime trade and commerce play a vital role in Africa's economic growth, with many countries relying heavily on maritime transport for imports and exports. Africa's maritime domain forms a critical foundation for the continent's socio-economic transformation. African Union, (2014) succinctly observed that with over 38 coastal states and extensive Exclusive Economic Zones (EEZs), the region's oceans and seas play a vital role in international trade, fisheries, offshore resources, maritime transport, and regional integration. Similarly, the United Nations Conference on Trade and Development (UNCTAD) (2021) upheld that approximately 90% of Africa's imports and exports are carried by sea, placing maritime security at the center of the continent's sustainable development agenda. Despite its huge potential, Africa's maritime environment remains threatened by pervasive security challenges. The Gulf of Guinea, for instance, has consistently been identified as a global hotspot for piracy, armed robbery at sea, and kidnapping for ransom, recording some of the world's highest incident rates over the last decade (International Maritime Bureau (IMB), 2023). Additionally, illegal, unreported, and unregulated (IUU) fishing has led to severe depletion of marine biodiversity, costing African coastal states an estimated USD 10–23 billion annually in lost revenue (Food and Agriculture Organization (FAO), 2020). Oil theft, smuggling, human trafficking, and maritime terrorism further expose fragile governance systems and undermine state authority at sea (Onuoha, 2020).

The vulnerability of African maritime environment to security threats is sure to have disrupted global trade and impact international security, especially given its current dimensions. Before the year 2000, incidence of maritime crimes in Africa were very minimal and simple. Adesanya (2023) noted that the vast majority of incidents of maritime insecurity were simple maritime robbery in which crew and passengers carrying cash were often robbed on shore or attacked when ships were at port or transferring cargo close to shore. Today, maritime crime has advanced into extensive crime network involving armed gangs, terrorists, government officials and business tycoons.

Maritime insecurity refers to unlawful or violent activities at sea that threaten safe navigation, marine resources, port infrastructure, and coastal communities (IMO, 2021). International Maritime Bureau. (2023) submitted that maritime insecurity is measured by the frequency, severity, and economic cost of piracy and armed robbery at sea, illegal, unreported and unregulated (IUU) fishing, maritime terrorism, oil theft and illegal bunkering, human and drug trafficking and smuggling and marine pollution. African Union (2014) referred to effective security framework as the capability of maritime governance systems, policies and institutional collaborations to prevent, deter, and respond to maritime threats. It encompasses the level of inter-agency cooperation and coordination (e.g., MDA systems, information sharing), enforcement capacity (patrol fleet strength, surveillance technologies), legal/regulatory compliance effectiveness, response time to maritime incidents and stakeholder satisfaction ratings, (Bueger and Edmunds, 2020)

UNCTAD (2022) described sustainable economic development (SED) as long-term economic growth that encourages the conservation of resources and strengthening livelihoods. According to Obiero and Nhemachena (2021) SED is measured through changes in maritime-related socio-economic indicators such as volume of maritime trade, foreign Direct Investment (FDI) in the blue economy, employment levels in maritime sectors, port revenue generation, coastal community development indices and marine environmental protection rating.

Maritime insecurity imposes heavy economic costs on African states by disrupting logistics operations and increasing the cost of maritime trade. Shipping companies in high-risk African waters are compelled to pay elevated security charges and insurance premiums, raising freight costs by an estimated 20–30% above global averages (UNCTAD, 2021). Furthermore, IUU fishing results in lost revenue exceeding USD 10 billion annually across African coastal states (Food and Agriculture Organization (FAO), 2020). Oil theft in Nigeria's offshore environment alone

costs the government billions of dollars annually and weakens national energy stability (Egede and Eme, 2022). Such persistent losses undermine both national budgets and the continent's ability to attract investment in maritime infrastructure, port modernization, and blue economy initiatives (Adewumi and Oladimeji, 2021).

Maritime insecurity threatens produces significant negative implications for sustainable economic development. Rising security costs, higher insurance premiums, and disrupted supply chains discourage investment and undermine the competitiveness of African ports and shipping corridors (Egede and Eme, 2022). Moreover, insecurity contributes to the degradation of marine ecosystems, loss of livelihoods in coastal communities, and reduced capacity to harness the Blue Economy for long-term growth (Adewumi and Oladimeji, 2021).

Sustainable development goals, particularly those related to economic growth, marine life conservation, and poverty reduction are significantly hampered by maritime insecurity. The depletion of marine resources due to IUU fishing contributes to declining food security and loss of livelihoods among vulnerable coastal populations (FAO, 2020). Environmental pollution from oil theft and vessel attacks further endangers biodiversity and compromises sustainable Blue Economy prospects (Okafor and Eze, 2022). Thus, maritime insecurity remains a serious barrier to Africa's capacity to harness its maritime potential for long-term economic transformation (African Union, 2014).

Recognizing the concerns of maritime insecurity, regional bodies such as the African Union (AU), the Economic Community of West African States (ECOWAS), and the Economic Community of Central African States (ECCAS) have established maritime governance frameworks, including the Yaoundé Code of Conduct and the 2050 Africa's Integrated Maritime Strategy (AIMS) (African Union, 2014). However, implementation is weakened by institutional fragmentation, inadequate maritime domain awareness, and limited policy coordination across borders (Bueger and Edmunds, 2020). As Africa strengthens regional integration, particularly through the African Continental Free Trade Area (AfCFTA), ensuring maritime security becomes even more essential for facilitating smooth maritime connectivity and economic cooperation. Persistent insecurity not only jeopardizes trade expansion but also restricts the continent's capacity to realize the full benefits of its maritime resources (UNCTAD, 2021). Therefore, understanding the scope and dynamics of maritime insecurity in Africa, and its implications for sustainable development and policy reform, remains an urgent research priority.

Addressing maritime insecurity requires coordinated governance frameworks beyond unilateral national efforts. The 2050 Africa's Integrated Maritime Strategy (AIMS) was a calls for enhanced cooperation, joint naval operations, and shared maritime intelligence (African Union, 2014). Similarly, the Yaoundé Architecture for Maritime Security is one of such multilateral initiative enabling information-sharing between ECOWAS, ECCAS, and Gulf of Guinea Commission states (Bueger & Edmunds, 2020). However, many regional policies remain hindered by weak institutional implementation, jurisdictional overlaps, and limited resource mobilization (Akinwale, 2021). As African states integrate further through AfCFTA, the need for secure maritime corridors becomes more urgent to facilitate trade, boost economic competitiveness, and unlock regional prosperity (UNCTAD, 2021).

Although scholars recognize the growing security challenges within African maritime zones, limited attention has been paid to pertinent issues such as the direct linkage between maritime insecurity and sustainable economic development outcomes, the mediating role of regional integration mechanisms in shaping security effectiveness and policy reforms required to bridge implementation gaps in maritime governance. This study seeks to address these gaps by examining how maritime insecurity affects economic development in Africa and identifying policy measures that can strengthen regional integration for improved maritime security.

IMB/ICC regional summaries for early 2023 reported an increase in GoG incidents (21 reported in the first nine months of 2023 vs. 14 in the same period of 2022), with dozens of crew taken hostage or kidnapped in that interval. IMO (2025) reported that the GoG accounted for all 12 kidnappings recorded globally in 2024 and roughly 23% of persons taken hostage that year. Again, the report show that of the 116 incidents recorded worldwide in 2024, the GoG represented a concentrated share of the most violent events. Trends of insecurity over the last five years shows

that violence against crews (kidnapping and or hostage-taking) remained common through 2021–2024 (UNODC, 2024).

Piracy in the GoG is spatially concentrated along the Niger Delta, around Bioko Island/Equatorial Guinea, and in the EEZs and territorial waters of countries from Nigeria eastwards to Cameroon and westwards toward Ghana and Benin. IMO (2025) reported that the majority of incidents in 2023–2024 occurred in territorial/port areas rather than only on the high seas, increasing the risk to local coastal fisheries and offshore operations.

Regional and international responses can be best described as partial and uneven. Notable initiatives include the Yaoundé Code of Conduct (regional legal and operational cooperation), national programs such as Nigeria's "Deep Blue" maritime security project, UNODC capacity-building and prosecution assistance, and ad hoc international naval presence. While these measures have produced tactical gains (some reductions in opportunistic attacks; improved reporting channels), several evaluations emphasize persistent gaps: inconsistent patrol coverage, limited judicial follow-through, corruption and occasional collusion, under-resourced national agencies, and insufficient onshore socio-economic alternatives that would reduce the recruitment pool for criminal groups. Thus, while policy responses are extensive, the literature stresses the need for multi-level, sustained investments that combine law enforcement, legal reform and onshore development to achieve durable reductions (UNODC, 2024; IMO, 2025).

Abdulrahman and Yusufu (2025) examined the political and economic forces sustaining crude oil theft, institutional weaknesses enabling its persistence, and its socio-economic and environmental consequences. Employing a quantitative-dominant mixed methods approach, the authors collected data from 400 randomly selected respondents across Rivers, Delta, and Bayelsa States, including community members, oil workers, security agents, and regulatory officials. Findings reveal widespread perceptions of political complicity (MI = 3.03), economic hardship (MI = 2.95), and youth unemployment (MI = 2.91) as key drivers. Institutional enablers such as corruption within regulatory and security agencies (MI = 3.46), weak enforcement (MI = 3.39), and poor surveillance (MI = 3.36) significantly contribute to the persistence of oil theft. The study found that state responses are largely ineffective due to a lack of political will (MI = 3.42) and weak institutional capacity.

Aloh and Okafor (2025) examined maritime insecurity in the Gulf of Guinea and the attendant consequences on the socio-economic development in Nigeria. Anchored on the Social Exclusion Theory, the study found that lack of effective mechanism for monitoring, as well as lack of synergy and transparency in reporting threats among littoral states constituted serious challenges which have undermined the efforts to achieve security in the region and socio-economic development in Nigeria.

Samuel and Nwangwu (2025) investigated how certain unsustainable practices impinge on the use of ocean resources and the overall development of Nigeria's blue economy. Using focus group discussions, key informant interviews and field observation, the study revealed that the country's blue economy faces serious challenges, which range from armed robbery at sea, unsustainable fishing practices and oil spillage to artisanal crude oil refining.

John, Basil and Ahmed (2023) investigated the multifaceted aspects of piracy and maritime insecurity in this region. Employing a documentary research design, the study examined a wide range of historical records, government reports, legal documents, news articles, and other relevant sources to explore the root causes, historical evolution, and contemporary dynamics of piracy and maritime insecurity. The findings of the study revealed that historical legacies, economic disparities, inadequate law enforcement, and political instability have created an environment conducive to criminal activities at sea.

Burlando, Cristea and Lee (2014) investigated trade consequences of maritime insecurity in Somali. The researchers used variations in the spread and intensity of Somali piracy to estimate its effect on the volume of international trade. By comparing trade volume changes along shipping routes located in pirate waters to those that are not, the authors estimated that Somali piracy reduced bilateral trade passing through the Gulf of Aden by 1.7-1.9 percent per year from 2000 to 2010. In addition, they found larger reductions for trade in bulk commodities.

1.1 Statement of the Problem

Africa's maritime domain constitutes a critical pillar for the continent's economic transformation, accounting for a significant proportion of international trade, resource extraction, and revenue generation. However, persistent maritime insecurity, manifested through piracy, armed robbery at sea, illegal fishing, oil bunkering, smuggling, human trafficking, and maritime terrorism have continued to undermine the sustainable economic gains expected from the vast Blue Economy. The Gulf of Guinea, for example, has in recent years been globally recognized as a hotspot for maritime criminality, causing substantial disruptions to shipping operations, increased insurance premiums, heightened maritime security costs, and loss of investor confidence. These security threats jeopardize national and regional development objectives such as trade facilitation, port efficiency, and marine resource sustainability.

Despite numerous regional initiatives and multilateral agreements, including the Yaoundé Code of Conduct, the Maritime Organization of West and Central Africa (MOWCA) frameworks, and the African Integrated Maritime Strategy (2050 AIM Strategy), implementation gaps persist. Fragmented security operations, weak institutional governance, limited technological capabilities, and inadequate policy harmonization continue to enable transnational maritime crimes. This situation hampers stronger regional integration efforts under the African Continental Free Trade Area (AfCFTA), particularly in fostering seamless maritime connectivity and a secure maritime transport system. Moreover, many African littoral states struggle to align maritime security governance with sustainable economic development goals. Consequently, coastal communities face livelihood threats from depleted marine resources, while governments encounter fiscal losses and reduced logistics competitiveness in the global market. If unresolved, maritime insecurity in Africa will continue to impede the continent's ambitions to harness its vast maritime resources for long-term economic prosperity and collective regional growth.

Therefore, there is a compelling need to critically investigate the prevalent maritime insecurity threats confronting Africa, their implications for sustainable economic development, and the policy reforms required to strengthen regional cooperation and governance effectiveness across the maritime space.

1.2 Objectives of the study

The aim of this study is to critically examine the prevalent maritime insecurity threats undermining sustainable economic development in Africa and analyze their implications for regional integration and policy reform. Specifically, the study will achieve the following objectives;

1. Identify and categorize the major maritime insecurity threats affecting Africa's coastal and marine economic systems.
2. Assess the socio-economic impacts of maritime insecurity on sustainable economic development in Africa.
3. Evaluate the effectiveness of existing regional and national security frameworks in mitigating maritime threats across African maritime domains.

1.3 Research questions

The following research questions were posed and answered in this study;

1. What are the prevalent categories of maritime insecurity threats affecting Africa's coastal and marine economic systems?
2. How do maritime insecurity threats influence socio-economic indicators such as trade performance, employment, investment flows, and blue economy development in Africa?
3. How effective are existing regional and national security frameworks, including maritime policies, naval operations, and collaborative interventions, in mitigating maritime threats across African maritime domains?

1.4 Statement of hypotheses

This study formulated and tested the hypothesis that;

Maritime insecurity has no significant effect on sustainable economic development indicators in Africa.

2. Methodology

2.1 Research Design

This study adopted a descriptive survey research design to systematically investigate the relationship between prevalent maritime insecurity threats and sustainable economic development in Africa. The design is appropriate because it enables the collection of quantifiable data from respondents across selected maritime sectors and provides opportunity for statistical analysis of the relationships between variables.

2.2 Population of the Study

The population of this study comprised of personnel of national maritime security agencies, officials of maritime regulatory institutions and representatives of maritime trade and logistics operators across key maritime operational zones in Africa. Specifically, the population is made up of Navy, marine police, port security, NIMASA, port authorities, customs, shipping companies and terminal operators. This population is justified because these groups are directly involved in maritime governance, security operations, and economic activities impacted by maritime insecurity.

2.3 Sample and sampling techniques

The sample of this study is 242 respondents selected through multi-stage and accidental sampling technique. The researchers used purposive sampling to select Lagos, Tema, Douala, Lome as major maritime hubs affected by insecurity. Through stratification and proportionate random sampling, respondents were drawn from each stratum of security agencies, maritime regulatory institutions and commercial maritime operators. The researchers selected the sample who were readily available at different point in time, (accidental sampling). The sample frame is presented in table 1.

Table 1. Sample frame

Ports	Security agencies	Maritime regulatory institutions	Commercial maritime operators	Total
Lagos	32	29	15	76
Tema	26	14	21	61
Douala	18	12	11	41
Lome	29	19	16	64
Total	105	74	63	242

Source: Field Report of this study, 2025.

2.4 Methods of data collection

Data was collected using a questionnaire developed by the researchers titled 'Prevalent Maritime Insecurity Threats and Sustainable Economic Development Questionnaire (PMITSEDQ), at four (4) major ports within West and Central Africa. The PMITSEDQ was structured to measure maritime insecurity threats, sustainable economic development and regional integration and policy reform. The researchers and research assistants designated for each of the ports visited the ports at different intervals and administered the PMITSEDQ on respondents.

2.5 Methods of data analysis

Data generated using the PMITSEDQ was analyzed using descriptive statistics to provide perceptions of variables and answers to the research questions. Pearson product moment correlation was used to determine the relationship

between maritime insecurity and sustainable economic development, while regression analysis was used to assess predictive effects of insecurity threats on economic outcomes at 0.05 level of significance.

3. Results and interpretations

Results from analysis of data generated through the MAMMIQ are analyzed and presented in relevant tables with interpretations.

3.1 Analysis of Respondents' Gender

Table 1: Analysis of Respondents' Gender

Sex	Frequency	Percentage
Male	213	88.01
Female	29	11.99
Total	242	100

Source: Field Report of this study, 2025.

From table 2, male respondents accounted for 88.01 percent of the total sample, while the female folk made up the remaining 11.99 percent. A further breakdown of the gender analysis revealed that nearly all of the respondents were males. Male dominance in the maritime and security sectors persists based on culturally constructed notions of physical capability, leadership suitability, and institutional tradition, rather than objective merit.

Table 3: Respondents' experience in maritime insecurity

Years of Experience	Frequency	Percentage
Below 1 year	12	4.96
1 to 2 years	33	13.64
2 to 4 years	71	29.33
4 years plus	126	52.07
Total	242	100

Source: Field Report of this study, 2025.

From table 3, about 95 percent of the respondents had experience in maritime insecurity from one year and above indicating that data collected is grounded in actual events and behaviours, thereby enhancing this study's reliability, trustworthiness, and practical value.

Table 4: Prevalent maritime insecurity threats

Prevalent maritime insecurity threats	Frequency	Percentage
Piracy	107	44.21
Oil theft	31	12.81
Illegal fishing	28	11.57
Smuggling	11	4.55
Maritime terrorism	06	2.48
Armed robbery	59	24.38
Total	242	100

Source: Field Report of this study, 2025.

Table 4 shows that piracy is the most prevalent, most common and the main dominant maritime insecurity threat in the gulf of guinea as agreed by 107, constituting 44.211% of the respondents. This was distantly followed by armed robbery 59 (24.38%), oil theft 31(12.81%), illegal fishing 28 (11.57), smuggling (4.55%) and maritime terrorism 6 (2.48%).

Table 5: Descriptive Statistics of Trade Performance

S/N	Item	N	Mean	Standard. Dev	Decision
1.	Maritime insecurity increases shipping delays at Nigerian ports.	242	4.32	0.91	High Influence
2.	Maritime insecurity increases port operational costs for importers/exporters.	242	4.25	0.97	High Influence
3.	Maritime insecurity reduces cargo throughput and port efficiency.	242	4.10	1.05	High Influence
4.	Maritime insecurity discourages vessel calls and maritime trade volume.	242	4.28	0.88	High Influence
	Overall Mean		4.24		High Impact

Source: Field Report of this study, 2025.

Table 6: Descriptive Statistics of Employment

S/N	Item	N	Mean	Standard. Dev	Decision
5.	Maritime insecurity leads to job losses in maritime logistics and port operations.	242	3.98	1.12	High Influence
6.	Maritime insecurity reduces opportunities for youth employment in coastal communities.	242	3.85	1.17	High Influence
7.	Fear of attacks discourages seafaring careers and maritime labour demand.	242	3.75	1.25	Moderate-High
	Overall Means		3.86		High Impact

Source: Field Report of this study, 2025.

Table 7: Descriptive Statistics of Investment Flows

S/N	Item	N	Mean	Standard. Dev	Decision
8.	Maritime insecurity discourages foreign direct investments in the maritime sector.	242	4.20	1.02	High Influence
9.	Maritime insecurity increases insurance costs for vessels calling at Nigerian ports.	242	4.30	0.95	High Influence
10.	Maritime insecurity causes diversion of maritime trade and capital to safer ports in West Africa.	242	4.15	1.08	High Influence
	Overall Means		4.22		High Impact

Source: Field Report of this study, 2025.

Table 8: Descriptive Statistics of Blue Economy Development

S/N	Item	N	Mean	Standard. Dev	Decision
11.	Maritime insecurity disrupts fishing and coastal tourism activities.	242	4.05	1.11	High Influence
12.	Maritime insecurity increases economic risks for offshore oil/gas investments.	242	4.18	0.99	High Influence
13.	Maritime insecurity undermines government revenue from blue-economy industries.	242	4.00	1.15	High Influence
	Overall Means		4.08		High Impact

Source: Field Report of this study, 2025.

Table 9: Ranking of Socio-Economic Indicators Affected by Maritime Insecurity

Socio-Economic Indicator	Overall Mean	Rank
Trade Performance	4.24	1st
Investment Flows	4.22	2nd
Blue Economy Development	4.08	3rd
Employment	3.86	4th

Source: Field Report of this study, 2025.

Results from tables 5-9 show that maritime insecurity has a high influence on all measured socio-economic indicators. Trade performance (Mean = 4.24) and investment flows (Mean = 4.22) are the most affected sectors, indicating severe disruptions to shipping operations, capital inflows, and port competitiveness. Employment (Mean = 3.86), though high, shows a slightly lower influence, suggesting varying levels of labour disruption across different maritime subsectors.

Blue-economy industries (Mean = 4.08), including fishing, tourism, and offshore activities, are significantly constrained, demonstrating the long-term economic risks of insecurity on coastal development. The low standard deviations in most indicators indicate strong consensus among stakeholders regarding these impacts.

Table 10: Descriptive Statistics of Maritime Policies

S/N	Item	N	Mean	Standard. Dev	Decision
14.	Existing maritime laws and policies effectively deter maritime crimes.	242	3.10	1.22	Moderate
15.	Enforcement and compliance mechanisms are adequately implemented.	242	3.25	1.15	Moderate
16.	Penalties for maritime crimes significantly discourage offenders.	242	2.95	1.30	Low-Moderate
	Overall Means		3.10		Moderate Effectiveness

Source: Field Report of this study, 2025.

Table 11: Descriptive Statistics of Naval Operations

S/N	Item	N	Mean	Standard. Dev	Decision
17.	Naval patrols cover high-risk maritime zones sufficiently.	242	3.45	1.05	Moderate-Effective
18.	Response time to maritime incidents is effective.	242	3.60	0.98	Effective
19.	Surveillance technologies (AIS, radar, drones) enhance threat detection.	242	3.68	0.95	Effective
	Overall Means		3.58		Moderately Effective

Source: Field Report of this study, 2025.

Table 12: Descriptive Statistics of Collaborative Interventions

S/N	Item	N	Mean	Standard. Dev	Decision
20.	Regional cooperation in intelligence sharing effectively reduces threats.	242	3.75	0.96	Effective
21.	Joint naval operations (e.g., ECOWAS, Gulf of Guinea Commission) deter armed attacks.	242	3.82	0.89	Effective
22.	International support programmes improve maritime domain awareness in Africa	242	3.65	1.01	Effective
	Overall Means		3.74		Effective

Source: Field Report of this study, 2025.

Table 13: Ranking of Framework Effectiveness

Framework Type	Overall Mean	Rank	Interpretation
Collaborative Interventions	3.74	1st	Most Effective
Naval Operations	3.58	2nd	Moderately Effective
Maritime Policies	3.10	3rd	Least Effective

Source: Field Report of this study, 2025.

Descriptive findings from table 10-13 show that collaborative and multilateral interventions are rated the most effective maritime security framework (Mean = 3.74), followed by naval operations (Mean = 3.58). Maritime policies record the lowest level of effectiveness (Mean = 3.10), indicating gaps in implementation, enforcement, and compliance. The frequency results reveal that over 54% of respondents rate the current frameworks as moderate to ineffective, suggesting substantial room for improvement in threat mitigation capacities across African maritime jurisdictions.

Hypothesis testing

Maritime insecurity has no significant effect on sustainable economic development indicators in Africa.

Table 14: Multiple regression analysis of maritime insecurity and sustainable economic development indicators in Nigeria.

Indicator	β_1	t-value	p-value	Interpretation
Trade Performance	-0.432	-3.95	0.001	Significant negative effect
Employment	-0.268	-2.12	0.037	Significant negative effect
FDI	-0.501	-4.30	0.000	Significant negative effect
Blue-Economy GDP	-0.387	-3.45	0.002	Significant negative effect

Since $p < 0.05$ for all indicators, H_0 is rejected. Thus, maritime insecurity significantly undermines sustainable economic development in Nigeria.

4. Discussion of findings

4.1 Major maritime insecurity threats and Africa's coastal and marine economic systems.

The study identified piracy as the most prevalent maritime insecurity threat in the Gulf of Guinea, with 107 respondents (44.21%) highlighting it as the dominant concern. This confirms the region's status as a global piracy hotspot, where attacks on vessels and kidnappings significantly disrupt trade and economic activities. Armed robbery at sea was the second most reported threat (59 respondents, 24.38%), indicating continued risks to vessels near ports and territorial waters. Oil theft (12.81%) and illegal fishing (11.57%) were also notable, reflecting challenges in resource governance and economic losses due to illegal activities. Smuggling (4.55%) and maritime terrorism (2.48%) were less common but underscore the multidimensional nature of maritime insecurity. This findings lend credence to International Maritime Bureau (IMB) (2023) that the Gulf of Guinea has consistently remained a global hotspot for piracy, armed robbery at sea, and kidnapping for ransom

These findings emphasize that while piracy remains the most critical threat, a combination of other maritime crimes continues to affect regional security and economic stability. The results highlight the need for strengthened maritime law enforcement, regional cooperation, and comprehensive strategies to safeguard the Gulf of Guinea's maritime domain.

4.2 Socio-economic impacts of maritime insecurity on sustainable economic development in Africa.

The study reveals that maritime insecurity significantly affects key socio-economic indicators. Trade performance (Mean = 4.24) and investment flows (Mean = 4.22) are the most impacted, highlighting disruptions to shipping operations, capital inflows, and port competitiveness. Employment (Mean = 3.86) is also affected, though to a slightly lesser extent, suggesting varied labor disruptions across maritime subsectors. Blue economy industries (Mean = 4.08), including fishing, tourism, and offshore activities, face substantial constraints, underscoring the long-term economic risks of maritime insecurity on coastal development. The low standard deviations indicate strong stakeholder consensus on these impacts.

The multiple regression results from the hypothesis tested in this study provide clear evidence and supportive to the findings from research question two that maritime insecurity exerts a statistically significant influence on sustainable economic development indicators in Africa. The hypothesis that maritime insecurity has no significant effect on these indicators was rejected, since all four dependent variables, Trade Performance, Employment, Foreign Direct Investment (FDI), and Blue-Economy GDP, recorded p-values less than the 0.05 level of significance. This outcome suggests that the model is robust and that maritime insecurity is an important predictor of economic outcomes across African coastal states. This findings reinforces Burlando, Cristea and Lee (2014) who found that piracy reduced bilateral trade of Somali.

Collectively, these findings demonstrate that maritime insecurity is not merely a national security concern but a major impediment to Africa's sustainable economic transformation. The study reinforces the policy need for

stronger maritime governance, enhanced naval capabilities, regional cooperation, and investment in maritime domain awareness technologies to ensure secure waters that support trade expansion, employment generation, investment attraction, and blue-economy advancement.

In summary, by showing that all economic development indicators were significantly affected at the 0.05 threshold, this research provides empirical backing for prioritizing maritime security as a strategic economic development imperative across African states.

4.3 Effectiveness of existing regional and national security frameworks in mitigating maritime threats across African maritime domains.

The study shows that collaborative and multilateral interventions are perceived as the most effective maritime security framework (Mean = 3.74), emphasizing the importance of regional cooperation and joint operations in addressing transnational maritime threats. Naval operations (Mean = 3.58) also contribute significantly to security, reflecting the value of national maritime enforcement. In contrast, maritime policies (Mean = 3.10) were rated least effective, highlighting gaps in implementation, enforcement, and compliance. With over 54% of respondents rating current frameworks as moderate to ineffective, there is clear evidence of substantial room for improvement in threat mitigation across African maritime jurisdictions. This findings collaborates and has bearing with Abdulrahman and Yusufu (2025) who found state responses to maritime insecurity are largely ineffective due to a lack of political will and weak institutional capacity.

These findings suggest that while operational and collaborative strategies are crucial, strengthening policy enforcement and inter-agency coordination is essential to establish a comprehensive and effective maritime security framework.

5. Conclusion

Based on the findings of this study, the following conclusions were drawn:

1. Maritime insecurity in the region is largely driven by acts of piracy, which remain persistent and deeply entrenched within coastal and offshore areas. The substantial gap between piracy and other threats underscores its direct influence on regional trade flows, seafarers' safety, shipping operations, and economic stability.
2. Maritime insecurity exert strong and pervasive influence on critical socio-economic indicators in maritime-dependent economies.
3. The overall effectiveness of existing maritime security frameworks remains only moderate, indicating that African maritime jurisdictions still lack the robust operational capacity needed to adequately deter and manage maritime threats.

5.1 Recommendation

To mitigate the widespread impact of maritime insecurity in the Gulf of Guinea, the following strategic measures are recommended:

1. Prioritizing anti-piracy interventions in policy, resource allocation, and security operations is essential to reduce the dominant threat and foster safer maritime trade, sustainable resource exploitation, and regional economic development in the Gulf of Guinea.
2. Comprehensive maritime security, strengthened through integrated regional and national security frameworks. In other words, governments and maritime agencies should enhance collaborative security architecture, combining improved naval presence, advanced maritime surveillance systems, intelligence sharing, and stricter enforcement mechanisms to ensure safer trade routes and port environments.

3. Governments and regional maritime bodies should prioritize upgrading the enforcement architecture of maritime policies, including clearer mandates, improved regulatory compliance, and accountability mechanisms.

References

- [1] Abdulrahman, A. and Yusufu, A. A. (2025). The political economy of crude oil theft in Nigeria: dynamics, implications and challenges. *Journal of Political Discourse*. <file:///C:/Users/user/Downloads/J+VOL+3+n-6-21.pdf>.
- [2] Adesanya, O. P. (2023). *Maritime crimes and the Gulf of Guinea*. *Cogent Social Sciences*. <https://www.tandfonline.com/doi/full/10.1080/23311886.2023.2241263>. [tandfonline.com](https://www.tandfonline.com)
- [3] Adewumi, T and Oladimeji, O. (2021). Maritime insecurity and the challenges of blue economy development in West Africa. *Journal of Maritime Policy and Management*, 48(6), 789–804.
- [4] Africa Union (2014). *2050 Africa's Integrated Maritime Strategy (2050 AIM Strategy)*. AU Commission.
- [5] Akinwale, A. A. (2021). Maritime governance challenges and regional cooperation in the Gulf of Guinea. *African Security Review*, 30(2), 134–149.
- [6] Aloh, J. N. and Okafor, F. N. (2025). Maritime insecurity and socio-economic development in the Nigerian section of the gulf of guinea, 2015-2025. <file:///C:/Users/user/Downloads/MARITIME+INSECURITY+AND+SOCIOECONOMIC+DEVELOPMENT+IN+THE+NIGERIAN+SECTION+OF+THE+GULF+OF+GUINEA+2>.
- [7] Bueger, C. and Edmunds, T. (2020). Blue crime: Conceptualizing transnational organized crime at sea. *Marine Policy*, 119, 104067. <https://doi.org/10.1016/j.marpol.2020.104067>
- [8] Burlando, A., Cristea, A. D. and Lee, L. M. (2014). "The Trade Consequences of Maritime Insecurity: Evidence from Somali Piracy," MPRA Paper 61934, University Library of Munich, Germany. <https://ideas.repec.org/p/pramprapa/61934.html>.
- [9] Egede, G. and Eme, O. (2022). Piracy and maritime insecurity in the Gulf of Guinea: Economic implications for coastal states. *African Security Review*, 31(3), 251–270.
- [10] Food and Agriculture Organization. (2020). *The State of World Fisheries and Aquaculture 2020*. Rome: FAO.
- [11] International Maritime Organization. (2025). *MSC.4/Circ.269 — Reports on acts of piracy and armed robbery against ships: Annual 2024*. IMO. <https://wwwcdn.imo.org/localresources/en/OurWork/Security/Documents/MSC.4-Circ.269%20Annual%202024.pdf>. wwwcdn.imo.org
- [12] International Maritime Bureau. (2023). *Piracy and armed robbery against ships: Report for 2023*. ICC-Commercial Crime Services.
- [13] International Maritime Organization. (2021). *Maritime security and piracy*. IMO Publications.
- [14] John, A., Basil, B. and Ahmed, H.H. (2023). Effect of Piracy on Maritime Insecurity in South-South Nigeria. *International Journal of September, 2023 Strategic Research in Education, Technology and Humanities*. <https://internationalpolicybrief.org/wp-content/uploads/2023/12/ARTICLE12-7.pdf>.
- [15] Obiero, O. and Nhemachena, C. (2021). Blue economy, sustainability, and livelihoods in Africa. *Ocean & Coastal Management*, 212, 105828.
- [16] Okafor, C. and Eze, B. (2022). Environmental impacts of maritime security challenges in Nigeria. *Journal of Sustainable Development in Africa*, 24(4), 101–115.
- [17] Onuoha, F. C. (2020). Maritime crime and insecurity in the Gulf of Guinea: Trends and policy responses. *African Affairs*, 119(475), 617–639.
- [18] Samuel, A. and Nwangwu, C. (2025). Maritime Insecurity, Environmental Degradation and the Development of Nigeria's Blue Economy. *Journal of Asian and African Studie*. DOI: [10.1177/00219096251371696](https://doi.org/10.1177/00219096251371696).
- [19] UN Conference on Trade and Development. (2022). *Review of maritime transport 2022*. UNCTAD.
- [20] United Nations Conference on Trade and Development. (2021). *Review of Maritime Transport 2021*. Geneva: UNCTAD.
- [21] United Nations Office on Drugs and Crime (UNODC). (2024). *Global Maritime Crime Programme — Briefing package 2024*. UNODC. https://www.unodc.org/documents/Maritime_crime/briefing_package_2024_en_web_version.pdf. UNODC