



Maritime Security in the Gulf of Guinea and Ship calls in Nigerian Ports

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Abstract

The study investigated the influence of condition of maritime security in the Gulf of Guinea (GoG) on ship calls in Nigeria ports. It employed secondary data on the ship call statistics in Nigeria ports and the frequency of pirate attacks against ships in the Nigerian waters of the GoG. The secondary data was obtained from the Nigeria ports authority (NPA) and the International Maritime Bureau (IMB). The data covers a 19 years period between year 2000 and 2018. Simple regression analysis was used to analyze the data using the ship calls as the independent variable and pirate attacks against ships as a proxy for maritime security conditions in the GoG as independent condition. It was found that a unit increase in attacks against ships in the region decreases ship calls to the port in by Nigeria 1.431 units. The model showing the relations between ship calls in Nigeria ports and maritime security condition in the GoG region is: $VES_{cal} = 4666.851 - 1.437MRT_{security} + e$. The policy implications of the findings for maritime security and governance were discussed.

[Nwokedi Theophilus Chinonyerem, Mbachu Justice Chihozie, Osondu-Okoro Chukwuebuka Godfrey, Okoroji Lazarus I. **Maritime Security in the Gulf of Guinea and Ship calls in Nigerian Ports**. *Nat Sci* 2022,20(11):43-48].IS SN1545-0740(print);ISSN2375-7167(online).<http://www.sciencepub.net/nature> 07.doi:[10.7537/marsnsj201122.07](https://doi.org/10.7537/marsnsj201122.07).

Keywords: maritime, security, ship-calls, ports, Gulf-of-Guinea, Nigeria

1.0 Introduction

Maritime security governance in the South Atlantic, particularly the Gulf of Guinea over the years has failed to sustainably fix the challenges of upsurge in maritime piracy and sea robbery against ships trading in the regions. Principally, Nigeria dominates maritime affairs and pirate attacks in the Gulf of Guinea region. As such, insecurity in the Nigerian maritime domain has been evaluated to have widespread impact on maritime operations, ship calls to Nigeria ports, offshore oil and gas operations, fishing activities, as well as disruption of container supply chain operations and port logistics (Ogwo *et al*, 2022; Nwalozie, 2020; Hasan and Hasan, 2017). The plethora of transnational crimes such as illicit drug trafficking, oil theft, illegal fishing operations, human trafficking, etc, which are correlated to maritime piracy and insecurity in the Gulf of Guinea (GOG) and the wider South Atlantic in general, have been proven to impede legitimate maritime activities (Essien and Adongion, 2013; Mbekeani and Ncube, 2011). The growing range to security in the GoG region in particular and Nigerian maritime domain in general provide support to the assertion that Legitimate Government actors and efforts have not shown capacity to provide sustainable security

governance. Though the state has over the years and currently deployed anti piracy measures including militarization with the Navy, collaboration among the GoG nations and critical stakeholders and development of legal framework cum anti piracy legislations. These approaches aimed at providing maritime security governance have not been able to address the challenges of maritime insecurity in Nigeria holistically. Though studies by Nnadi *et al* (2016) and Ogwo *et al* (2022) are in agreement that the current level of insecurity in the maritime sector in Nigeria follows a declining trend, the rate of decline is insignificant. The implication of this is that the safety and security of ships and seafarers navigating in the GoG into Nigeria in particular cannot be guaranteed, following the jeopardized security situation in the region. Ship owners and operators as a result face the challenges of increased cost of navigation to Nigeria associated with the extra cost of employing and deploying extra security and anti piracy measures. Many operators have as well developed a 'no go' attitude when contracted for carriage to the ports in Nigeria particularly the port in the Niger Delta regions, the GoG and South Atlantic maritime zone; in which they cite the possibility of pirate attacks as the

motivation for refusal of carriage contract emanating from the region. Some stakeholders in the Nigeria shipping sector also blame the higher freight charges for shipping cargo to the Eastern and Delta Ports in Nigeria on the much higher level of insecurity in the Delta and Eastern ports with higher probability of attacks against ships when compared with the ports in Lagos.

From the foregoing, it is understood that maritime insecurity affects the level of ship calls, port and maritime operations in the affected regions. However, the extent and significance of the effects need to be empirically evaluated. Since the Nigeria Ports Authority (NPA, 2019) provides evidence of ship calls to the ports in Nigeria each year while the International Maritime Bureau provides empirical evidence of the frequency distribution of pirate attacks against ships in all the global sea regions and Countries; an estimation of the relations between the ship call statistics in Nigerian ports and pirate attacks against ships in the Nigerian maritime domain will provide empirical information and evidence on the influence of maritime insecurity on ship calls in Nigerian ports. This holds information and implications for maritime security governance from the perspectives of Nigeria as a coastal state. For example, The Country depend on tariff from trades paid as customs duties as the second highest revenue source after crude oil export. The maritime agencies such as the Nigeria Maritime Administration and Safety Agency (NIMASA), the Nigeria Ports Authority, etc, are major revenue generating agencies of the Government of Nigeria. These agencies are dependent on the revenue generated from ship calls (ship dues) and the associated cargo dues and rents for cargo storage to satisfy government revenue objectives from the maritime agencies. Therefore, decline in ship calls to the ports of Nigeria will have negative effects on the revenue of Government and thus affect government spending on infrastructure and development. The multiplier effects on decline in ship calls to the ports associated with maritime insecurity is enormous. As such, an empirical information and evidence of the relationship between maritime security and ship calls in Nigeria is necessary for decisions and justifications for serious implementation of anti piracy measures. It will also provide justification for improvement in strategies for maritime security governance in the Nigeria maritime domain in particular and the GoG in general. This is because the adoption of effective maritime security measures by individual countries is directly related to the establishment of maritime governance and this adoption can only happen when Government have a better understanding of the impacts of maritime security on the objectives of Government in the maritime sector.

2.0 Brief Review of Literature

Several empirical studies have been carried out in attempts to x-ray the challenges of maritime insecurity occasioned by pirate attacks against ships involved in seaborne trade across global waters. However, most of the available empirical studies have not considered determining the probability coefficients and risk of pirate attacks faced by various ship types involved in seaborne trade in major global sea routes. For example, studies by Ogwo et al (2022) carried out a study on the influence of economic growth on trend of sea piracy and armed robbery attacks against ships in Nigeria established that in Nigerian waters, with a unit annual increase in GDP, pirate attacks against ships decreases by 3.81units. Similarly, with a unit annual increase in revenue generated by the maritime transport sub-sector, sea piracy and armed robbery attacks against ships in the waters of Nigeria decreases by 0.007 units while a unit increase in youth unemployment rate increases pirate attacks against ships in the Nigeria waters by 0.158units. The study used time series secondary data on pirate attacks against ships trading in the waters of the gulf of Guinea over 20 years duration from 2000 to 2018 as well as the Gross Domestic Product (GDP), revenue generated by the maritime transport sub-sector, and youth unemployment rate which were used as proxies for economic growth. The findings of the study corroborates the propositions of the routine activity theory and frustration aggression theory that economic deprivation suffered by the population in the coastal states in Nigeria in the face of growing output in the maritime transport subsector, is responsible for maritime insecurity in Nigeria(Ogwo et al , 2022).It recommended that economic growth in maritime nations should be translated into opportunities for economic empowerment of unemployed youth in the coastal zones in order to bring about a significant decrease in sea piracy against ships and insecurity cum criminality in global sea routes and maritime domains in general (Ogwo et al , 2022; Ece, 2012).

The work of Nnadi, Nwokedi, Nwokoro, Ndikom, Onyemechi, Emeghara (2016) on the Analysis of Maritime Piracy and Armed Robbery in the Gulf of Guinea Maritime Domain also established that there exist decreasing trend in pirate attacks against ships trading in the Gulf of Guinea region between 2002 and 2015. Similar to the work of Ogwo et al (2022); Nnadi et al (2016) employed secondary data sourced from the International Maritime Bureau (IMB) which was analyzed by the use of ANOVA and OLS estimation of trend with the aim of comparing attacks against ships trading in the Gulf of Guinea region and the trend of attacks in the region. The study found that there was significant variation in piracy and armed robbery attacks among the Gulf of Guinea countries, the

greatest of attacks occurring in Nigeria during the period. There was also a significant variation in piracy attacks among the coastal zones of Nigeria with attacks in Lagos ports and anchorages being highest within the period. It recommended that the focal point of anti piracy measures and policies of Government should be on the coastal zones within the region where the attacks are highest and most frequent (Nnadi et al, 2016; Ahmad, 2020).

The work of Nwokedi, Odumodu, Anyanwu and Dike (2021) estimated the economic cost of output losses as a result of death and injury occasioned by maritime piracy and armed robbery in the ocean trawler fishery sub-sector of Nigeria and the global maritime industry; as economic justification for investment in remedial measures and policies against attacks in the sub-sector. The study used ex-post facto design approach where secondary data was employed. The Gross Output Model and the empirical probability model were used to analyze the data obtained. The result of the study was the determination of the empirical probabilities coefficients of risks of death, injury, kidnap for ransom, assault, missing of crew, hostage taking of crew and threats of death following attacks against ships involved in sea voyage. The study also developed a model for the estimation of output losses due to death, injury, etc; based on the relationship between the empirical probability coefficients of each risk type, the per capital output of the economy and the number of maritime workers exposed to pirate attacks in any given economy (Nwokedi, Odumodu, Anyanwu and Dike, 20221). The findings of Nwokedi et al (20221) corroborates the findings of findings of Ece et al (2021), Natalya and Alexander (2015) and Dedi (2021).

3.0 Data and Methods

The study used secondary data sourced from the Nigerian Ports Authority (NPA, 2019) and the International Maritime Bureau (IMB, 2019). Time series data on the vessel call statistics (VES_{cal}) of Nigeria ports covering a period of 19 years from 2000 to 2018 was obtained from the NPA while data on the frequency of pirate attacks in Nigeria waters covering the 19 years period was obtained from the IMB. The pirate attacks ($Pirate_{attacks}$) or $MRT_{security}$ against ships trading in the waters of Nigeria in the Gog was used as the proxy for level of maritime security prevalent in Nigeria waters in the GoG. Ordinary least square (OLS) simple linear regression method was used to analyze the data obtained using maritime security level (frequency of pirate attacks against ships) in Nigeria as the dependent variable and ship calls as the independent variable. This is based on the basic assumption that the level of maritime security will influence the desire or otherwise, for ship operators to call to Nigeria ports. Thus, ship calls to the ports in the region and Country is dependent on the level of prevailing maritime security. The model specification is as shown below:

$$VES_{cal} = a + \beta MRT_{security} + e.$$

Where a = regression constant

β = coefficient of regression

e – error term.

Using analysis was implemented by the use of IBM SPSS software version 20

4.0 Result and Discussion

Table1: Relationship between Maritime Security and Ship Calls in Nigeria Ports
Descriptive Statistics

	Mean	Std. Deviation	N
VEScal	4634.7895	400.29344	19
MRTsecurity	22.3158	10.11079	19

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.036 ^a	.01	-.057	411.62725	.556

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3798.339	1	3798.339	.022	.883 ^b
	Residual	2880428.818	17	169436.989		
	Total	2884227.158	18			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4666.851	234.037		19.941	.000
	MRTsecurity	-1.437	9.596	-.036	-.150	.883

a. Dependent Variable: VEScal

Source: Authors Calculation.

The result of the study in table-1 above shows that the average ship calls to the Nigeria ports over the period covered in the study is 4634.79 vessels per annum with a standard deviation of 400.24. Similarly, the average frequency of pirate attacks against ships as an indicator of the condition of maritime security in the waters of Nigeria is 22.32 attacks per annum with a standard deviation of 10.11. The Model showing the relationship between ship calls to Nigerian ports and the condition of maritime security in the GoG is expressed as:

$VEScal = 4666.851 - 1.437MRTsecurity + e$. This implies that a unit increase in maritime insecurity or pirate attacks against ships in the GOG decreases ship calls to Nigerian ports by 1.437units.

It shows that as maritime pirate attacks in the GOG increases, the maritime security situation in the regions worsens and ship calls to the ports in the region decreases. By implication, a decrease in ship attacks will lead to an increase in ship calls to the seaports in the region. It is also important to consider the coefficient of determination r-square of the model which is 0.01. This implies that only 10% variation in ship calls at the ports is explained by the maritime security situation in the region, leaving about 90% unexplained variation. The t-score of -0.150, t-tabulated value of , and p-value of 0.883 indicates that there is no significant relationship between maritime security situation in the GoG and ship calls in Nigeria

ports. By implication, pirate attacks against ships in the Gulf of Guinea do not significantly influence the trend of ship calls in Nigeria ports. Other factors other than the maritime security situation in the regions interact to influence ship calls in Nigeria ports as maritime security situation alone has no significant effects on ship calls to Nigeria ports.

5.0 Conclusion

The evident from the findings of the study that pirate attacks against ships in the GoG and worsening maritime security condition in Nigerian waters leads to decrease ship calls in Nigerian ports and subsequently, port revenue. However, the declining impact of worsening maritime security condition in the GoG on ship calls in Nigerian ports is not significant. To improve ship calls in the ports therefore, maritime security should be strengthened together with other factors influencing demand for sea transport in the region.

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Appendix-1: Shall calls in Ports and pirate attacks in Nigerian waters between 2000 and 2018

	Vessel calls	Pirate attacks
2000	4,087	9
2001	4,473	19
2002	4,143	14
2003	4,315	39
2004	4,553	28
2005	4,586	16
2006	4,800	12
2007	4,644	42
2008	4,477	40
2009	4,620	29
2010	4,962	19
2011	5,327	10
2012	4,868	27
2013	5,185	31
2014	5,333	18
2015	5,014	15
2016	4,373	21
2017	4,292	17
2018	4,009	18

11/22/2022