



Analysis of Maritime Piracy and Armed Robbery in the Gulf of Guinea Maritime Domain

¹Kenneth U. NNADI, ¹Theophilus C. NWOKEDI, ¹Ignatius A. NWOKORO, ¹Obed C. NDIKOM, ¹Godfrey C. EMEGHARA, ¹Chinedum ONYEMECHI

¹Department of Maritime Management, Federal University of Technology, Nigeria; kennethnnadi@yahoo.com, kennethnnadi@yahoo.com, nwokeditc@gmail.com, ignatiusahumaraeze@hotmail.com, bonmiconigerialimited@yahoo.com, godfreyemeghara@yahoo.com, c_onyemechi@yahoo.com

Abstract

The Gulf of Guinea in the past 14 years witnessed serious challenges of maritime piracy and armed robbery attacks. The paper analyzed maritime piracy and armed robbery in the Gulf of Guinea region from 2002 to 2015. Time series data of 14 years on the reported piracy and armed robbery attacks in the 15 Gulf of Guinea countries and nine coastal zones of Nigeria were obtained from International Maritime Bureau annual reports. Trend analysis model and analysis of variance (ANOVA) were used to analyze the data. It was found that there was significant variation in piracy and armed robbery attacks among the Gulf of Guinea countries, the greatest of attacks occurred in Nigeria. 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. There exists decreasing trend of attacks within the period.

Keywords: Analysis, Maritime, Piracy, Gulf, Guinea.

Gine Körfezi Deniz Sahası'ndaki Deniz Haydutluğu ve Silahlı Soygunların Analizi

Öz

Gine Körfezi, geçtiğimiz 14 yılda ciddi sorunlar olan deniz haydutluğu ve silahlı soygun saldırılarına şahit olmuştur. Bu çalışmada Gine Körfezi'nde 2002 ile 2015 yılları arasında yaşanmış deniz haydutluğu ve silahlı soygunlar analiz edilmiştir. Gine Körfezi'ndeki 15 ülke ve Nijerya'daki 9 kıyı bölgesinde deniz haydutluğu ile silahlı soygun saldırılarına ait 14 yıllık veriler Uluslararası Denizcilik Bürosu'nun yıllık raporlarından elde edilmiştir. Verilerin analizinde eğilim analiz modeli ile değişken analizi (ANOVA) kullanılmıştır. Gine Körfezi ülkeleri arasında haydutluk ve silahlı soygun saldırıları arasında önemli oranda değişkenlik olduğu bulunmuş, saldırıların büyük çoğunluğunun Nijerya'da olduğu görülmüştür. Bu süreçte, Nijerya'nın kıyısız bölgeleri arasında haydutluk saldırılarının önemli oranda değişkenlik gösterdiği ve Lagos limanı ve demir yerinde saldırıların en yüksek seviyede olduğu görülmektedir. Bu süre zarfında saldırılar azalma eğilimi göstermektedir.

Anahtar Kelimeler: Analiz, Denizcilik, Deniz Haydutluğu, Körfez, Gine.

1. Introduction

It is recognized that maritime piracy and armed robbery against ships constitute major threats to maritime security in the Gulf of Guinea, particularly in the coastal states of Nigeria [1]. The International Maritime Bureau (IMB) notes Madsen [2], defines piracy and armed robbery against ship as “an act of boarding or attempting to board any ship with the apparent intent to commit theft or any other crime and with the apparent intent or capability to use force in the furtherance of that act”. The above definition involves actual or attempted attacks whether the ship is in port, at anchorage, or in the high sea. It was noted that the act of robbery at sea is the same in the process of the crime whether committed outside or inside the 12 nautical miles zone of a nation's territorial waters, the exclusive economic zone and the internal waters, there exists important legal distinctions [2]. Robbery at sea committed inside these waters is considered armed robbery against ship while only attacks committed outside of the territorial waters and outside the jurisdiction of a coastal state, i.e. in the high sea is considered piracy.

It further defines piracy as any act of inciting or of intentionally facilitating an act aimed at forcefully boarding a ship with apparent intent to commit illegal acts of violence or detention, or any act of depression, committed for purposes of private ends by the crew or passengers of a pirate boat or aircraft in the high seas. The above definitions hold distinction between piracy and armed robbery at sea, particularly when considering the legal structure governing the crime itself and the institutions implicated in response to such crime in varied geographical locations. In this study, we use the word piracy to mean both types of acts (armed robbery and piracy). This is because, the IMB reports on which the study is based does not distinguish between the duo [2, 3, 4].

In a study on Sea Piracy and Security Challenges of Maritime Business Operators in Bayelsa State Nigeria, the study notes that, the African seaways namely; the coast of the Horn of Africa (HOA) and the Gulf of Aden (GOA); in the East coast of Africa, and the Gulf of Guinea (GOG); in the West coast of Africa, from the year 2007 to date have become mine fields for sea pirates, witnessing intense attacks against ships [5]. This threatens maritime security in the zones affecting negatively global trade flows and economic growth in Africa. It is the opinion of Onuoha [4] that since 2007, African waters overtook waters off Southeast Asia of Indonesia, Malaysia, and Singapore; of global maritime piracy with much of the global attention in African waters being on Somali maritime piracy. The Somali pirate attacks, observes [6] accounts for more than half of the pirate attacks recorded annually in Africa. This is seconded by Gulf of Guinea (GOG) attacks. The Gulf of Guinea attacks are concentrated more on Nigeria and is rated globally the second most dangerous after Somali [4, 7]. They expressed concern that the GOG attacks might get more dangerous and may have far more negative effects on global economy and seaborne trade than the Somali attacks. This is because; the Gulf of Guinea (GOG) holds great economic potentials and importance in global energy supply from fossil fuel fields, they added. Onuoha [4], on his own part, views that it would account for 25 percent of global offshore oil production by 2020 as compared to 22 percent from the Persian Gulf.

The Gulf of Guinea (GOG) region is the part of the Southern part of the Atlantic Ocean, South West of Africa, formally, referred to as the Gulf of Biafra [4]. The region encompasses above a dozen countries from West and Central African, namely; Angola, Benin, Cameroun, Central African Republic, Cote Dvoire, Democratic

Republic of Congo, Sao Tome and Principe, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Republic of Congo, Senegal, and Togo [8]. Anene [8] observes that it is located more strictly by the intersection of latitudes 00 (equator) and longitude 00 (Greenwich Meridian). See Figure 1 below:

imports of manufactured goods, food items and heavy equipment. This huge economic potential of the region drives the fear that piracy in the area if not curtailed, may derail the growth of economy of the GOG countries, their global trade partners, and other parties with strategic interests in the potentials of the region [9, 4].

Recent researches on the issues of piracy in the region notes that the majority



Figure 1: Expanded MAP of the Gulf of Guinea Region

The GOG is strategic in global energy supply from crude oil and natural gas resources. In 2010, more discoveries of large deposits of fossil fuel in the GOG were in Ghana’s “Jubilee” field, situated some 60 km offshore and at Siera-leone’s “Venus oil field” with both stocking above 200 million barrels each. New discoveries were as well made, off the Coast of Liberia, thus the region holds potential to make significant output of energy from fossil fuel to the global economy in the 21st century [4]. With 50.4 billion barrels of proven reserves, 5.4 million barrels of oil production per day, the GOG is a key hub of commercial exports of hydrocarbon and

of Gulf of Guinea piracy and insecurity challenges occurs in the Nigerian Maritime domain [10]. Nigeria thus, dominates maritime security issues in the GOG. [5], supported by [7], identified about nine coastal zones in the six coastal states of Lagos, Rivers, Bayelsa, Ondo, Akwa-Ibom, and Cross River in Nigeria where piracy attacks are frequent.

Industry observers opine that recent pirate attacks in the Nigerian maritime domain take place mostly within Lagos ports (berths) and Lagos anchorage, Bony River, Forcados River, Rivers State Coastal area, Bayelsa Coastal area, Akwa Ibom Coastal area, Crosss River coastal area,

Delta State (Warri) Coastal area, and Ondo Coastal area with majority of the attacks concentrated in the coastal zones in the Niger Delta [3, 1]. The figure below gives the nature of the spread of sea piracy and armed robbery in the waters of Nigeria.

2. Review of Related Literature

2.1. Conceptual Framework

The United Nations (UN) in Article 101 of the 1982 UN Convention on the Law of the Sea (UNCLOS) defines piracy as:

(a) Any illegal acts of violence or



Figure 2: Nigerian Coastal Zones and Piracy Incidents

The United Nations Convention on Trade and Development [10] and the International Maritime Bureau [11] note that, 65 percent of pirate attacks in the Nigerian maritime domain of the Gulf of Guinea use guns and arms mainly to kidnap for ransom purposes and steal cargoes, cash and valuables. Piracy in the Nigerian maritime domain over the years was fuelled by illegal oil trading and oil theft activities which were much more organized crimes with links to foreign citizens and organizations than piracy itself. With the implementation of the IMO International Ship and Port Facility Security Code (ISPS Code) in Nigeria, a decline in attacks, particularly in the ports, is expected, particularly in Lagos ports and its attendant anchorages.

detention or any act of depredation committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:

- (1) On the high seas, against another ship, aircraft, or against persons or property on board such ship or aircraft.
- (2) Against a ship, aircraft, person or property in a place outside the jurisdiction of any state.

(b) Any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft.

(c) Any act of inciting or of intentionally facilitating an act described in subparagraphs (a) and (b) above.

The International Maritime Organization

(IMO) at its 74th Meeting of the Maritime Safety Committee (MSC), in the draft code of practice for investigation of crimes of piracy and armed robbery against ships (MSC/Circ 984), further defined armed robbery against ships as any unlawful act of violence or detention or any act of depredation, or threat thereof, other than an act of piracy directed against a ship or against persons or property on board such ship, within a state's jurisdiction over such offences. The foregoing indicate that, both piracy and armed robbery against ships constitute the same offences, the major difference being the geographic locations in which the acts are committed; at the high sea or within the jurisdiction of a state [8, 11].

The ICC International Maritime Bureau foresaw limitations in information gathering on maritime piracy, and for statistical purposes, gave a joint definition of piracy and armed robbery against ships. The IMB defined the concept of piracy and armed robbery against ship as an act of boarding or attempting to board any ship with the apparent intent to commit theft or any other crime and with the apparent or capability to use force in furtherance of the act [8]. Since the data collected for this research is based on IMB reports, this shall be the working definition of piracy in this discuss.

2.2. Theoretical Framework

2.2.1. The Routine Activity Theory

Essien and Adongio [5] note that the basic perspective for analyzing the substantive issues of piracy is anchored on the routine activity theory (RAT). The routine activity theory (RAT) is an offshoot of the socio-structural theory advanced by Colhen and Felson. Igbo [12], as reviewed in Essien and Adongio [5] note that the routine activity theory explains crime as a product of the combined result of three associated elements namely:

1) Potential offenders or persons who

are motivated to commit crimes,

2) Suitable targets; that is the presence of things that are of economic value and which can be easily transported,

3) Absence of capable guards or persons who can prevent a crime from taking place. [5] Note that the proposition put forward by RAT explains the factors that prompted the occurrence of pirate attack in Nigerian maritime domain and the attendant threat to maritime security in the Gulf of Guinea. Principally, the preponderance of suitable targets (fishing travellers, oil tankers, commercial non oil carriers, oil installations of multi-national oil companies, foreign expatriates for kidnap, etc.) according to routine activity theory is a motivator, that has sustained the occurrence of pirate attacks. Another problem is too weak maritime security apparatus and the near unavailability and inadequacy of competent security personnel/network to safeguard the maritime domain. There also exists a large army of unemployed and underemployed youth seeking for satisfactory means of economic fulfillment. These factors have over the years fully activated and sustained pirate attacks in Nigeria maritime domain and the gulf of Guinea [5].

The routine activity theory (RAT) concerns itself with explicating the individual motivational factor in crime causation which other traditional sociological theories of crime do not. Its main preoccupation is to emphasize on how ordinary or normal lawful conventional, routine activities of individuals increase the probability of criminal activity [12].

2.2.2. The Weakness of the Failed States Theory

Monteclos [1] notes that undoubtedly, linking politics to crime is important to understand the causes and purposes of maritime violence. The Failed State Theory (FST) advanced by Weber defines

a failed state as a political body that has disintegrated to a point where basic conditions and responsibilities of a sovereign government no longer function properly. Likewise, when a state weakens, and its standard of living declines, it introduces the possibility of government collapse which means that, the state has been rendered ineffective and is no longer able to enforce its laws uniformly or provide basic goods and services to its citizens because of high crime rates, extreme political corruption, an impenetrable and ineffective bureaucracy, judicial ineffectiveness and military interference in politics, among others. Thus, a failed state is characterised as having the following;

1) Loss of control of its territory or of the monopoly of legitimate use of physical force therein,

2) Erosion of legitimate authority to make collective decisions,

3) Inability to provide public services and,

4) Inability to interact with other states as a full member of the international community.

Monteclos [1] insists that weakened or failed states facilitate piracy which reduces the authority of the state. The relationship he adds, between piracy and state control is quite complex. In African setting, particularly in Nigeria, the failed state theory is obvious in explaining the preponderance of pirate attacks in the maritime domain. The weakness of the Nigerian state and the backlash is observed to be a structural colonial legacy and the State got weaker during the Biafran War period (1967-1970); and in the recent past when the Movement for the Emancipation of the Niger Delta (MEND), made demands for resource control of the Niger Delta resources, resulting in militant groups to springing up in the area to demand for rather their inheritable portion of the "national cake" without contesting the

authority of the State. Moreover, the role of the Nigerian Government towards piracy in Nigerian waters is quite ambiguous as opines [13], that some government officials collude with the pirates and militant groups to really undermine the authority of the State with impunity. Security forces (police, Navy, Army) do not only attack the militants; they also participate in illegal oil trading, piracy and kidnappings which is the core under-current factor ravaging the Nigerian economy as obvious corruption in our faces today. The corrupt governors of the oil-producing states as well use these gangsters to get rid of opponents, fund their illicit activities, yet, also fund the dominant political parties [1]. Monteclos [1] alleged that "the Nigerian State itself is involved in maritime piracy as analysis of government agencies says a lot in this regard, the army, to start with, often concludes shady deals with the militants to share the booty and negotiate a status quo". The Nigerian Navy too is corrupt and involved in illegal drug and oil trading activities. The weakness of state theory explains why today insiders in the Navy, Army, Customs, and Port Authorities still inform pirates and militants in the locations where boats are and the real values of their cargo, which over the years has been the bane of winning the war against maritime piracy in Nigeria and GOG at the end.

2.3. Empirical Review

2.3.1. Causal Factors of Maritime Piracy and Armed Robbery in Nigeria

2.3.1.1. Negligence by the Nigerian Authorities

Onuoha [14] in their study of the piracy trend in the GOG are of the opinion that the State was established to serve as an instrument for the domination and exploitation of resources by the colonial powers in Europe. As a result, the post-colonial African state has not been able to refit that warped design which has led to

the state's incapacity or unwillingness to accomplish even the most basic sovereign duties including establishing security, order and social cohesion.

It was believed that the Nigerian state was designed from purely utilitarian point to suit the economic and political interest of the colonial masters. Thus the country seems from independence any real ability to exercise sovereign rights over her maritime domain. As a result, the State is lacking the ability to maximize resources, provide clear vision for maritime governance and is almost holistically constrained in capacity to provide maritime security [14]. As a result, negligence by the Nigerian state account for above 50 percent for piracy in the GOG maritime domain [14].

2.3.1.2. Lack of Legal Framework for Maritime Security Management

Monteclos [1] is of the view that, the weak, inadequate and corrupt legal system in Nigeria is a component contributor to piracy and armed robbery incidence in Nigerian maritime domain. According to the Nigerian Maritime Administration and Safety Agency (NIMASA) reports as reviewed in Monteclos [1], very few or no pirates are prosecuted every year. Onuoha [14], observes that, ineffective implementation available laws on piracy and maritime security crimes have been a problem over the years. This has correlation to multiple other factors among which include capacity shortage and corruption in government, which gives criminals little or no official disruption to their activities [14].

Another challenge in maritime security legal framework in Nigeria and GOG States is the inability to properly implement treaties relating to international maritime security.

2.3.1.3. The Militancy Problem in the Niger Delta

Onuoha [4] supported by Akpobolekemi [15], in a study on security challenges in

the Nigerian maritime domain, [5] in a study on sea piracy and security challenges facing business operators in Bayelsa state, all affirmed that, a major causal factor of pirate attacks in Nigerian waters in the GOG is the perceived economic neglect and marginalisation of the Niger Delta States in Nigeria which led to rise of militant groups coordinated by MEND, championing the call for resource control. The militant groups operate by hostage-taking of oil workers, illegal destruction of oil storages and production facilities, attacks on oil vessels, illicit oil trade, kidnapping and ransom receipts among others. The Federal Government amnesty programme of 2009 caused over 15,000 militants to surrender about 2760 assorted guns, 287, 445 ammunitions of different calibres, 8 gunboats, 763 dynamites, 1090 dynamite caps, 3,155 magazines and several other military armorial equipment, such as dynamite cables, bullet-proof jackets and jack-knives, yet the programme could bring to stop, piracy and armed robbery incidences in the area [4, 5].

2.4. Cost of Piracy in Nigeria Maritime Domain

Stefan [16] opines that the cost of piracy in the Nigerian maritime domain comes in various forms; ranging from cost of military operations, cost of security equipment and guards, cost of labour and hazard pay accruing to seafarers in high risk areas (HRA), cost of piracy related insurance, cost of prosecution and imprisonment, cost/value of stolen cargo, to cost of counter piracy organization and maritime security capacity building efforts. The total yearly cost of piracy in the Nigerian maritime domain and GOG is estimated to be about 1 billion dollars [16].

3. Objectives

The aim of the study is to analyse the incidence of sea piracy and maritime

security challenges in the Gulf of Guinea focusing on the Nigerian maritime domain. The specific objectives include:

- To establish the level of significance in variation in the piracy and armed robbery attacks in the maritime domain of the GOG countries.
- To examine the nature of variation in piracy and armed robbery attacks in the entire GOG in the review period.
- To estimate the trend of piracy and armed robbery attacks on ships in the Gulf of Guinea from 2002 to 2014.
- To determine the level variation in ship attack incidents among the coastal zones of Nigeria.
- To ascertain the significance of variation in yearly reported piracy and armed robbery attacks in the entire Nigerian maritime domain.

3.1. Hypotheses

H_{01} : There is no significant variation in the piracy and armed robbery attacks in the maritime domain of the GOG countries.

H_{02} : There is no significant variation in yearly piracy and armed robbery attacks in the GOG in the review period.

H_3 : There exists an increasing trend in ship attack incidents in the GOG in the review period.

H_{04} : There is no significant variation in ship attack incidents among the coastal zones of Nigeria.

H_{05} : There is no significant variation in yearly reported pirate attacks in the entire Nigeria maritime domain.

4. Methodology

The research adopted an analytical approach in which the researcher obtained a time series data of 15 years running from 2002 to 2015 from ICC International Maritime Bureau on piracy and armed robbery attacks in 15 GOG countries including Nigeria. The symbols X_1, X_2, \dots, X_n , where $n = 15$, were used to represent each of the countries involved as

shown on Table 1 below.

Besides piracy and armed robbery attacks in the coastal zones of the Nigeria maritime domain, collected from IMB sources, were analyzed. The data also covered a 14-year period from 2002 to 2015. The coastal areas where the attacks occurred in Nigeria are denoted by $C_1, C_2, C_3, \dots, C_n$, where $n = 9$ were used to represent each piracy prone coastal zone in Nigeria.

Trend analysis was also carried out using the ordinary least square (OLS) method regression in which the time of attacks 'x' in years was used as the independent variable and the number of attacks 'Y' in the GOG each year within the period of study used as the dependent variable. Trend analysis determines the nature of the attacks over time, since the attacks are dependent on time to occur. It determines whether attacks increase or decrease overtime. Using the ordinary least square method of regression, the model can be represented as: $Y = a_1 - b_1x + e$

Where Y = piracy attacks, a_1 = intercept, b_1 = coefficient, e = error term. The analysis of variance (ANOVA) statistical model was used to measure the level of variation and the significance of variations in reported piracy and armed robbery attacks among the GOG countries and among the coastal zones of Nigeria. The ANOVA model uses the F-statistics to test the significance of the null hypotheses.

The sets of data collected were analyzed using analysis of variance (ANOVA). The hypotheses were tested using F- test.

4.1. Limitation of the Study

The data collected for the study is based on the international maritime bureau publication on reported sea piracy and armed robbery cases within the review period. As a result, the accuracy of the findings depends, to a large extent, on the accuracy of the data used for the research since not all sea piracy and armed robbery cases in the study area may have been reported within the review period.

4.2. Data Presentation

Table 1: Frequency of Piracy and Armed Robbery Attacks on Ships in the Gulf of Guinea Region From the Year 2002 to 2015

Year/GOG States	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
ANGOLA= x_1	-	3	-	-	4	1	2	-	-	1	-	-	1	-
Benin Republic = x_2	-	1	-	-	-	-	-	9	-	20	2	-	-	-
Cameroun= x_3	5	2	4	2	1	-	2	3	5	-	1	-	1	-
Congo DR = x_4	-	-	-	-	4	3	4	1	2	3	2	-	1	2
Equatorial Guinea = x_5	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Ghana = x_6	5	3	5	3	3	1	7	3	-	2	2	-	4	2
Guinea = x_7	2	4	5	1	4	2	-	5	6	5	2	1	-	3
Guinea Bissau = x_8	2	-	-	-	-	-	-	1	-	-	-	-	-	-
Ivory Coast = x_9	5	2	4	3	1	-	3	2	4	1	3	4	2	1
Liberia = x_{10}	-	1	2	-	-	1	1	-	1	-	-	-	1	1
Nigeria = x_{11}	14	39	28	16	12	42	40	29	19	10	21	29	13	12
Senegal = x_{12}	3	8	5	-	-	-	-	-	-	-	-	-	-	-
Sierra Leone = x_{13}	1	-	3	-	2	2	-	-	-	1	1	1	1	-
The Congo = x_{14}	-	-	-	-	-	-	1	-	1	3	4	2	6	2
Togo = x_{15}	1	1	-	-	1	-	1	2	-	6	11	7	2	-

Source: Adapted from IMB Piracy and Armed Robbery Against Ships Annual Reports 2003, 2004, 2008, 2012, 2015 editions

Table 2: Trend of Piracy and Armed Robbery Attacks in the Gulf of Guinea

Year	Time in years = X	Number of attacks = Y
2002	1	38
2003	2	64
2004	3	56
2005	4	25
2006	5	32

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Table 2: Trend of Piracy and Armed Robbery Attacks in the Gulf of Guinea (Cont')

Year	Time in years = X	Number of attacks = Y
2007	6	52
2008	7	62
2009	8	55
2010	9	38
2011	10	52
2012	11	49
2013	12	44
2014	13	32
2015	14	23
Total	15 years	622

Source: International Maritime Bureau Annual Piracy and Armed Robbery Reports

Table 3: Frequency of Piracy and Armed Robbery Attacks on Ships in Coastal Regions of Nigeria from 2002 to 2015

Year/ Coastal Region	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Lagos Port/ anchorage = C ₁	12	21	19	11	18	25	23	4	-	11	13	11	10	2
Ondo State coastal= C ₂	1	-	-	1	-	-	-	1	-	-	-	-	-	-
Delta coastal = C ₃	-	3	3	-	-	3	8	7	1	2	3	1	2	-
Bayelsa State coastal = C ₄	8	10	6	5	11	17	8	8	0	2	4	4	5	1
Rivers State coastal = C ₅	7	5	12	18	19	5	16	28	13	2	6	7	8	-
Bonny River = C ₆	10	14	18	15	17	23	23	-	3	4	1	5	1	2
Akwa-Ibom State coastal = C ₇	2	6	4	5	8	1	4	11	7	1	2	3	1	2
Cross River/ Calabar River = C ₈	2	-	-	1	3	-	3	2	3	1	1	1	-	-
Forcados River = C ₉	2	1	-	3	1	1	-	2	-	-	1	1	-	-

Sources: IMB Annual Piracy Reports 2002-2015 Editions. S&I Solutions Data, Available Online at; www.calabash.com.index

4.3. Data Analysis and Result

Table 4: Result Output

Summary	Count	Sum	Average	Variance
X ₁	14	12	0.857143	1.67033
X ₂	14	32	2.285714	31.75824
X ₃	14	26	1.857143	3.208791
X ₄	14	22	1.571429	2.263736
X ₅	14	1	0.071429	0.071429
X ₆	14	40	2.857143	3.824176
X ₇	14	40	2.857143	3.978022
X ₈	14	3	0.214286	0.335165
X ₉	14	35	2.5	2.115385
X ₁₀	14	8	0.571429	0.417582
X ₁₁	14	324	23.14286	127.978
X ₁₂	14	16	1.142857	6.131868
X ₁₃	14	12	0.857143	0.901099
X ₁₄	14	19	1.357143	3.478022
X ₁₅	14	32	2.285714	11.14286
2002	15	38	2.533333	13.8381
2003	15	64	4.266667	96.92381
2004	15	56	3.733333	49.6381
2005	15	25	1.666667	16.95238
2006	15	32	2.133333	9.980952
2007	15	52	3.466667	114.5524
2008	15	62	4.133333	102.1238
2009	15	55	3.666667	55.2381
2010	15	38	2.533333	24.8381
2011	15	52	3.466667	28.98095
2012	15	49	3.266667	31.78095
2013	15	44	2.933333	55.92381
2014	15	32	2.133333	11.8381
2015	15	23	1.533333	9.409524

Anova						
Source of Variation	SS	Df	MS	F	P-value	F crit
Rows	6271.124	14	447.9374	33.45089	6.65E-43	1.74646
Columns	153.4286	13	11.8022	0.88136	0.573732	1.774262
Error	2437.143	182	13.39089			
Total	8861.695	209				

Table 5: Anova: Two-factor without Replication

Summary	Count	Sum	Average	Variance
C ₁	13	204	15.69231	59.0641
C ₂	13	3	0.230769	0.192308
C ₃	13	31	2.384615	6.75641
C ₄	13	12	0.923077	0.910256
C ₅	13	86	6.615385	20.25641
C ₆	13	138	10.61538	63.42308
C ₇	13	128	9.846154	79.80769
C ₈	13	54	4.153846	10.14103
C ₉	13	17	1.307692	1.397436
2003	9	44	4.888889	19.36111
2004	9	60	6.666667	51
2005	9	44	4.888889	43.86111
2006	9	62	6.888889	50.36111
2007	9	69	7.666667	60
2008	9	63	7	78.75
2009	9	94	10.44444	88.77778
2010	9	105	11.66667	107.5
2011	9	55	6.111111	60.61111
2012	9	13	1.444444	2.027778
2013	9	30	3.333333	11.5
2014	9	31	3.444444	17.52778
2015	9	3	0.333333	0.5

Anova						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	2956.427	8	369.5534	19.95569	2.01E-17	2.036319
Columns	1125.59	12	93.79915	5.065105	1.77E-06	1.854409
Error	1777.795	96	18.5187			
Total	5859.812	116				

Table 6: Summary Output of Trend Analysis of Table 1 by Linear Regression

Regression Statistics	
Multiple R	0.301277739
R Square	0.090768276
Adjusted R Square	0.014998965
Standard Error	13.2052132
Observations	14

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Table 6: Summary Output of Trend Analysis of Table 1 by Linear Regression (Cont')

Anova								
	Df	SS	MS	F	Significance F			
Regression	1	208.8967033	208.8967	1.197956	0.295213544			
Residual	12	2092.531868	174.3777					
Total	13	2301.428571						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	51.61538462	7.454589275	6.923974	1.6E-05	35.37322986	67.85753937	35.37322986	67.85753937
X = Time	-0.958241758	0.87549711	-1.09451	0.295214	-2.865786094	0.949302578	-2.86578609	0.949302578

4.4. Results and Findings

The result on table 4 showed that the highest attacks in the GOG occurred in Nigeria waters, followed by Ghana and Guinea. A total of 324 attacks occurred in Nigeria in the last 14 years, with Ghana and Guinea having reported cases of 40 attacks each over the same period. This translates to averages of 21.6 attacks in Nigeria, 2.67 attacks in Ghana and Guinea per annum. Ivory Coast, Togo, Benin republic, and Angola had reported attacks of 35, 32, and 30 respectively in the last 14 years Equatorial had only one reported attack over the past 14 years giving her an average of 0.06 attacks per annum over the period. The sum of all GOG piracy and armed robbery attacks against ships over the last 14 years is 608, and about 53% of these attacks occurred in the waters of Nigeria. This is in agreement with the results of the study by Ukeje and Nmvomo [3] who found that the GOG attacks ranks second in Africa after the Somali pirates and is concentrated more in Nigerian waters. The findings of Onuoha [4] that Nigeria accounts for 55% of GOG attacks also supports the present research findings.

The rate of reported annual attacks in the GOG in the period under review showed neither consistent increment nor decline

from preceding year's values. The 2002 base year had 38 reported attacks against ships in the GOG which rose to 64 in 2003 before decreasing to 56 in 2004 after which a minimum of 25 pirate attacks over the 14 years covered were reported in 2005 (See Table 1).

Test of hypothesis H_1 by f-test showed an f-ratio of 33.45 and f-critical of 1.746. Since $33.45 > 1.746$, (f-ratio is greater than f-critical), we reject hypothesis H_1 and accept the alternate that there is a significant variation in the reported piracy and armed robbery attacks in the maritime domain of the GOG countries in the past 14 years.

Test of hypothesis H_2 showed an F-ratio of 0.88, and F-critical of 1.77. Since $0.88 < 1.77$ (F-ratio is less F-critical), we accept the null hypothesis H_2 that there is no significant variation in the yearly piracy and armed robbery attacks in the GOG in the review period.

The result of the trend analysis of table 1 using a linear regression showed that, the quantitative model showing the trend of piracy and armed robbery attacks in the GOG is $Y = 51.62 - 0.96x + e$. The multiple R is 0.301. This reflects the existence of about 30.1% degrees of association between time of attack in years and number of attacks

within the period. The R square is 0.091, indicating that; only about 9.1% of variation in number of attacks is explained by the independent variable. The gradient of the function is -0.96. This shows that there is a decreasing trend in maritime piracy and armed robbery attacks in the GOG maritime domain within the period. Thus, we reject null hypothesis H_3 to accept the alternate that there is a decreasing trend in maritime piracy and armed robbery attacks in the GOG within the period covered in the study. This decreasing trend is the result of the amnesty programme of the Nigerian government from the year 2009 which engaged the militants believed to be involved in piracy into meaningful skills and educational training opportunities and jobs which in the view of the RAT is a potent approach to curbing piracy and armed robbery at sea.

The result of the analysis on Table 5 shows that more piracy and armed robbery attacks took place in Lagos ports and anchorages than any other coastal region of Nigeria with a total of 204 attacks over the past 14 years. This translates to an average of 15.6 attacks in Lagos ports and anchorages per annum over the period. This is followed by attacks in Rivers state coastal zone and Bonny River each of 138 and 128 attacks which translate to 10.6 and 9.5 pirate attacks respectively in Rivers state coastal zone and Bonny River per annum. The other zones of Bayelsa coastal zone, Akwa Ibom coastal zone, and Delta coastal zones ranked third, fourth, and fifth with a total of 86, 54, and 31 attacks respectively. Cross River coastal/Calabar River, Forcados River and Ondo coastal had a total reported attacks of 17, 12, and 3 respectively. The result shows that Ondo coastal had the least number of reported attacks with an annual average of 0.23 attacks. Lagos ranks highest in the reported attacks on ships over the past 14 years. Emphasis on counter piracy measures

has been more in the Niger Delta coastal zones than in Lagos ports and anchorages. This is probably due to the fact that the reported attacks on ships in the Niger Delta coastal zones, when put together is higher than that of Lagos, and partly due to the prevalence of oil fields in the Niger Delta. This is contrary to the findings of Onuoha [4] and Ukeje and Mvomo [3] whose studies found that piracy in Nigeria centre most in the states of the South-South (Niger Delta). It however supports the work of Monteclos [1] who notes that a great number of under-reported attacks against ships occur in Lagos ports and anchorages. However, the studies of Monteclos [1], Ukeje and Mvomo [3] and Onuoha [4] did not use any scientific method or model to test the level of significance in the variation in pirate attacks among the coastal zones of Nigeria and GOG states as done in this work. The predominance of sea piracy and armed robbery in Lagos more than any other coastal state in Nigeria suggests that militancy may not in actual be the major causative agent of sea piracy is Nigerian waters. The present trend witnesses the focus of less combative strategies in Lagos waters than in other states and this portends danger, suggesting further the complicity of government officials in the Ports and waterways, which is an opinion alleged seriously by Monteclos [1]. Following the non existence of militancy problem and resource control agitation in Lagos, there is need for further inquiry into the casual factors of piracy in Lagos ports and anchorages.

The incidence of piracy and armed robbery attacks in the coastal zones of Nigeria showed neither consistent annual increases nor consistent decline, from preceding year values, in the last 14 years. Total attacks in all coastal zones in Nigeria amounted to 44 attacks in the year 2002 and rose to 60 in the year 2003, giving averages of 4.88 and 6.67 attacks in each of the 9

coastal areas in those years. It declined to 44 attacks in 2004 before rising again to 62 in 2005, giving averages of 4.88 and 6.89 attacks respectively in the coastal zones. The inconsistency in increment and decline continued until the highest attack was reported in the year 2009 which amounted to 105 attacks, an average of 11.6 attacks per coastal zone in that year.

The test of hypothesis H_4 by F-test shows an F-ratio of 19.95, and F-critical of 2.036. Since F-ratio is greater than F-critical, (19.95>2.03), we reject null hypothesis H_4 and accept the alternate to conclude that there is a significant variation in reported piracy and armed robbery attacks among the coastal zones of Nigeria in the last 14 years.

The test of hypothesis H_5 showed an F-ratio of 5.06, and F-critical of 1.85. Since 5.065 is greater than 1.85 (f-ratio > f-critical), we reject null hypothesis H_5 and conclude that there is a significant variation in the yearly piracy and armed robbery attacks in Nigerian maritime domain in the review period.

5. Conclusion

The evidence from the analysis and findings proved that 53% of all GOG attacks occurred in Nigeria. This shows the existence of variation in sea piracy and armed robbery attacks in the GOG maritime domain with Nigeria contributing most. The trend is however seen to be decreasing according to the findings. Thus to curb the menace of sea piracy in the GOG greater combative effort and strategy must focus on Nigerian waters. Also, 30.3% of pirate attacks on ships in Nigeria take place in Lagos ports and anchorages. In line to the objectives of the research, there exist variation in sea armed robbery attacks in Nigerian maritime domain (coastal zones) with Lagos contributing most. Majority of sea piracy and armed robbery attacks in Nigeria occurs in Lagos, yet the fight against

sea piracy and armed robbery in Nigeria is limited in Lagos or non-existent at all but concentrated only in the oil bearing coastal states.

6. Recommendations

The majority of authors reviewed in this work are in support that piracy and insecurity in Nigerian maritime domain is a highly organized crime in which top public government officials are involved, thus supporting the argument of the weakness of failed state theory, the routine activity theory and the three capability gap theory.

It is therefore, recommended that for long term solution to the challenges of security and maritime piracy in Nigeria and the GOG, the principles of the routine activity theory, the weakness of failed state theory and the three capability gap thesis must be examined and be applied.

1. Government and private sector stakeholders must identify potential offenders, Particularly the high risk areas of the Nigeria starting with Lagos ports and anchorages, Rivers state coastal zone, Bonny River, Bayelsa coastal, Akwa-Ibom coastal and delta state coastal zones, Cross-River coastal, Forcados River and Odon coastal zones, in order of decreasing rates of attack and provide them with means of full employment to discourage them from piracy and armed robbery and other related crimes.

2. The weakness of failed state theory identified incapacity to provide security, corruption and judicial ineffectiveness as key characteristics of a failed state which encourages piracy and armed robbery. It is recommended that Nigeria must build and upgrade her naval capacity to provide security in the water ways, included in this is capacity to curb corruption among the Navy, Judiciary and port workers Particularly in the high risk areas of the Nigeria starting with Lagos ports and

anchorage, Rivers state coastal zone, Bonny River, Bayelsa coastal, Akwa-Ibom coastal and delta state coastal zones, Cross-River coastal, Forcados River and Ondo coastal zones, in order of decreasing rates of attacks to limit their involvement in planning pirate attacks in Nigeria, while funding and implantation of key maritime security instruments to which the country signed in each of the major piracy prone coastal zones is recommended. This will help the present inter-regional alliances between the navies of the GOG countries to yield better fruit.

3. Closure of all legitimacy gaps.

Based on the capability gap thesis which identified legitimacy gap as one of the key factors fueling piracy; the Niger Delta militancy problem and resource control struggle can best be explained by the legitimacy gap. By the nature of Nigeria, there exists multiplicity of ethnic groups recognised in the Constitution necessitating the doctrine of Federal character system which legitimately provided for groups from all over the country to be properly and adequately represented in all strata of Government, in manner and to the extent provided by the Constitution of the Federation. Where these legitimate rights are scuttled by the majority of the ethnic groups against the minority, the results are obviously disastrous as has been witnessed over the years in the Niger Delta of Nigeria and GOG. All legitimacy gaps must thus be closed for long term solution to piracy in the Nigerian maritime domain. Since the Niger Delta coastal zones (states) in total account for about 65% of all pirate attacks over the period and government concentration of military power to combat piracy in the region is motivated by its contribution to government revenue to oil export operations, it is very important that the authorities must give attention to closing all legitimacy gaps that motivate fuel militancy.

7. Suggestion for Further Research

It is suggested that a further research be carried on the causal factors of piracy and armed robbery in Lagos ports and anchorages and the cost implications in the maritime industry. This is very important since Lagos is not known to be an endemic zone for militancy and oil theft activities which are known to be drivers of sea piracy in the Niger Delta coastal states.

References

- [1] Monteclos, M.A.P., (2012) Maritime piracy in Nigeria: old wine in new bottles. *Journal of studies in conflict and terrorism* 35:531-541.
- [2] Madsen, J.V., (2013) The state of maritime piracy in 2013. *Oceans beyond piracy*. Retrieved from [//:www.oceansbeyond piracy.org](http://www.oceansbeyondpiracy.org) .Retrieved June 12, 2016.
- [3] Ukeje, C and Mvomo, W.E., (2013) African approaches to maritime security-the gulf of guinea, Abuja: fredrich- Eber-stifi.
- [4] Onuoha, F. C., (2012) Piracy and maritime security in the gulf of guinea: Nigeria as microcosm. *Aljazeera center for security studies*. Retrieved from [//: www.studies.aljazeera.net](http://www.studies.aljazeera.net). Retrieved June 12, 2016.
- [5] Essien, B. S. and Adongoi, T., (2015) Sea piracy and security challenges of maritime business operators in Bayelsa state Nigeria: An Empirical study. *International journal of humanities and social science* 5(2): 213-211.
- [6] Alessi, C., (2012) Combating maritime piracy. Council on foreign relations. Retrieved on May 23, 2016 from [// www.cfr.org/france/combating/](http://www.cfr.org/france/combating/).
- [7] Abiodun, D.W., (2015) the sea factor in Nigeria national security. *International journal of global strategy* 31(5): 53-58.
- [8] Anene, L., (2006) Gulf of guinea: A

- growing strategic profile. Nigeria Army quarterly journal, 2(1): 39- 51.
- [9] Okoronkwo, U.L., ETU, N. O. and Chieke, E. O., (2014), National security and maritime piracy in Nigeria: a social discourse. Humanities and social sciences letters 2(1): 60-71.
- [10] United nations convention on trade and development, (2014) Maritime piracy: an over view of trends, costs and trade-related implications, UNCTAD/DTL/TLB/2013. Available online at [//:www.unctad.org/hl/legal](http://www.unctad.org/hl/legal). Retrieved June 12, 2016.
- [11] International maritime bureau, (2015) Piracy and armed robbery against ships. Retrieved from [//:www.icc-ccs.org](http://www.icc-ccs.org). Retrieved May 23, 2016.
- [12] Igbo, E.M., (2008) Etiology of crime: perspectives in theoretical criminology. Enugu. New generation books.
- [13] Jones, S., (2013) Maritime piracy: the challenge of providing long-term solutions. A working paper at the Maastricht school of management. Retrieved on June 12, 2016 from [//:www.msm.nl](http://www.msm.nl).
- [14] Onuoha, F.C., (2009) Geo-strategy of oil in the gulf of guinea: implications for regional stability. Journal of Asian and African studies, 45(3): 369-384.
- [15] Akpobolekemi, Z.P., (2014) Enhancing Nigeria navy operations through effective inter-agency cooperation. A paper presented at the chief of naval staff annual conference held at conference hall, Reverton hotel, Lokoja on 8th-14th November, 2014.
- [16] Stefan. M. (2011) piracy and maritime security: region characteristics and political, military, legal and economic implications. German Institute for International and Security Affairs. Retrieved on June 12, 2016 from [//:www.swp-berlin.org](http://www.swp-berlin.org).
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