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Contemporary Nigerian-based Piracy: An Assessment of the Harms

SUPERVISOR: Prof. Letizia PAOLI

Master's thesis, submitted by Bryan
PETERS as part of the final examination for
the degree of MASTER IN CRIMINOLOGY

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Abstract

Maritime piracy is not a new phenomenon. Manifestations have existed for many centuries. Piracy occurs, with some frequency, on almost every continent. There are, however, a few "hot spots" where incidents occur more frequently. The Gulf of Guinea, and specifically the waters off Nigeria, is one such locale. Nigerian-based piracy is particularly troubling—a manifestation that is extremely violent, surpassing other global piracy "hotspots", and one that is spreading throughout the entire region with potentially widespread ramifications. Although much research has focused on the costs and consequences of piracy, little is known about the harms associated with these crimes and how they impact different classes of bearers.

This research set out to systematically and empirically assess the harms of contemporary Nigerian-based piracy across multiple bearers and interest dimensions. To do so, an innovative harm assessment framework, developed by Greenfield and Paoli (2013) was employed. The assessment framework, a multi-step exercise comprised of distinct analytical phases and processes, required the articulation of business models for each of the primary modes of Nigerian-based piracy, the identification of possible harms and bearers, the evaluation of the incidence and severity of actual harms, the rating and prioritization of harms and finally, investigating potential causes of the identified harms. To do so, a mixed-methods approach was employed relying on both primary and secondary data sources. Methods included an extensive literature review, content analysis of over 400 piracy incident reports and semi-structured interviews.

Findings suggest that, despite being the current global piracy "hot spot", incidents are rare when compared to vessel traffic estimates. Although their incidence was rare, these crimes still impacted all bearer classes and produced a number of serious harms, many of which were the direct consequence of violence. The findings indicate that seafarers suffer the most from piracy, experiencing the most harms as well as the most severe ones. Further, most harms were the direct consequence of the primary activity. From a scientific perspective, this was the first evidence-based and systematic assessment of the harms of piracy. In doing so, it provided a valuable addition to a seriously under-studied phenomenon within the field of criminology and it contributes to an emerging body of literature focusing on the harms of crime.

Acknowledgements

I would like to express my sincere gratitude to my supervisor, Professor Letizia Paoli, for her continuous support, guidance and motivation throughout this process. I am honored that you agreed to supervise my project.

To my wife Bridget, I couldn't have accomplished this without your support and encouragement.

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List of Abbreviations

ASAM	Anti-Shipping Activity Message
BMP	Best Management Practices
BOT	Bonny Offshore Terminal
CIA	U.S. Central Intelligence Agency
CPI	Corruption Perception Index
DWT	Deadweight Tonnage
EEZ	Exclusive Economic Zone
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EU	European Union
FSO	Floating, Storage and Offloading Vessel
GGC	Gulf of Guinea Commission
GISIS	Global Integrated Shipping Information System
GRIP	Group for Research and Information on Peace and Security
ICC	International Chamber of Commerce
IMB	International Maritime Bureau
IMO	International Maritime Organization
ISWAN	International Seafarers' Welfare and Assistance Network
JRC	European Commission Joint Research Centre
MGC	Maritime Guard Command
MPA	Marine Protected Area
NGIA	U.S. National Geospatial-Intelligence Agency
NIMASA	Nigerian Maritime Administration and Safety Agency
NITOA	Nigerian Trawler Owners' Association
OBP	Oceans Beyond Piracy
PRC	IMB Piracy Reporting Centre
PTSD	Post-traumatic Stress Disorder
QUAGOL	Qualitative Analysis Guide Leuven
RBSA	Royal Belgium Shipowners' Association

ReCAAP	Regional Cooperation Agreement on Combatting Piracy and Armed Robbery Against Ships in Asia
RPG	Rocket-propelled Grenade
STS	Ship to Shore
SUA	Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation
TFRM	Terra Firma Risk Management
TI	Transparency International
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNITAR	United Nations Institute for Training and Research
UNODC	United Nations Office on Drugs and Crime
UNOWA	United Nations Office for West Africa
WACI	West African Coast Initiative

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1. INTRODUCTION

With varying temporal and spatial manifestations, piracy "…has existed for as long as people and commodities have traversed the oceans" (Elleman, Forbes & Rosenberg, 2010, p. 1). Although a chronic concern of mariners, during much of the past century piracy was regarded by many as a thing of the past, deserving of minimal consideration as a security issue. The onset and rapid escalation of Somali-based piracy off the Horn of Africa around the turn of the century abruptly changed this view. Piracy incidents, occurring in isolated parts of the world, began to be recognized as significant non-traditional security threats with far-reaching consequences. This view was further bolstered by the intensification of manifestations in the waters off Southeast Asia, South Asia, the Indian sub-continent and West Africa. Due in part to a host of international and regional enforcement and capacity-building interventions, moderate successes have been made in countering piracy off the Horn of Africa and in the Malacca and Singapore Straits. The same cannot be said for West Africa, and specifically, the waters off Nigeria.

The persistence and severity of incidents off Nigeria have surpassed those in the piracy-prone waters off the Horn of Africa and in the Malacca and Singapore Straits. Criminality and violence have not been contained to Nigerian waters and have spread throughout much of the Gulf of Guinea. The escalation of violence prompted Lloyd's Joint War Committee, comprised of maritime insurance underwriting representatives, to designate the entire Gulf of Guinea as a "war risk area" in August of 2011. The waters off Nigeria, and particularly those in and around the Niger River Delta, are now notorious for crew kidnappings which have steadily increased in recent years.

The plausible harms of Nigerian-based piracy are conceivably vast, not only for Nigeria but also within the Gulf of Guinea region and further abroad. These seemingly isolated and local incidents can have profound and far reaching consequences. In addition to the obvious threat to seafarers, the social and geostrategic relevance of Nigerian-based piracy is considerable for a number of reasons. Piracy can adversely impact regional economies and threaten seaborne trade. Global energy security, specifically that of the United States and the European Union (EU), is potentially at risk as the Gulf of Guinea contains vast oil and gas reserves with Nigeria as the principal producer and exporter. There is also the real possibility of direct and indirect links between pirates, militant groups, terrorists and organized criminal networks—another threat to regional security and stability. Lastly, considering the volume of hazardous materials

transported through the waters off Nigeria, the risk of a catastrophic environmental event stemming from a piracy incident is present.

Researchers, across varied disciplines including international law, maritime studies, economics and international relations all have recognized the social relevance of piracy. Unfortunately, criminological interest has been limited, by comparison. Although existing criminological theories could conceivably help us to better understand this phenomenon, they have yet to be broadly exploited. Moreover, despite widespread recognition of the centrality of harm to crime (Paoli & Greenfield, 2013, p. 360), within the broader social sciences, no one has attempted to systematically and empirically assess the harms associated with piracy, including its impacts on different bearers. This thesis attempts to address, at least partly, these knowledge gaps. It is the first evidence-based attempt to systematically assess the harms of piracy. Employing an innovative analytical framework to assess the harms of criminal activity developed by Greenfield and Paoli (2013), this thesis sets out to answer the following research questions:

Research Question #1: *How does contemporary piracy manifest in Nigeria?*

> *$RQ1_a$ – What modes (e.g., robbery, vessel/cargo seizures, kidnapping for ransom) of piracy can be identified?*
> *$RQ1_b$ – What are the principal phases of each mode?*
> *$RQ1_c$ - What participants are involved in each mode?*
> *$RQ1_d$ - What accompanying activities (e.g., corruption, use of violence) can be identified?*
> *$RQ1_e$ - What enabled activities (e.g., receiving stolen goods) can be identified?*

Research Question #2: *What are the harms associated with contemporary piracy in Nigeria?*

> *$RQ2_a$ - Which bearers are harmed?*
> *$RQ2_b$ - Which interest dimensions are affected?*
> *$RQ2_c$ – How severe are the identified harms?*
> *$RQ2_d$ – What is the incidence of the harms?*
> *$RQ2_e$ – Considering the incidence and severity of the identified harms, which priority scores do the identified harms merit?*
> *$RQ2_f$ - What are the causes of these harms?*

Relying on both primary and secondary data sources, a mixed-methods approach was employed including an extensive literature review, content analysis of over 400 piracy incident reports and semi-structured interviews with piracy experts. This study is organized into six chapters. The first introduces the topic, societal and scientific relevance, objectives and research questions. The second includes a review of the criminal harms and piracy literature as well as an overview of Nigerian, regional and international counter-piracy policies and actual interventions. In the third, the problem statement is presented followed by the conceptual and analytical frameworks, the research design and the methodology employed. The fourth and

fifth chapters consist of the empirical analysis and findings of the harm assessment. The final chapter includes concluding remarks, limitations, summary of main findings, policy implications and recommendations and suggestions for further research.

2. LITERATURE REVIEW

The purpose of this chapter is to provide conceptual clarity and essential background information to frame the present analysis. It is divided into five sub-sections. The first section explains the parameters and inclusion criteria used to search for the relevant literature. The second provides an evaluation of the literature on the harms of crime. The third focuses on piracy literature, both in general terms and from a region-specific perspective. The fourth offers an overview of the policies and actual interventions of Nigerian, regional and international actors. The chapter concludes with a synopsis of the literature, identifying the major gaps and criticisms, to demonstrate the utility of the present research.

2.1. Search Parameters and Inclusion Criteria

The literature search was conducted over a period of two months. New sources were added after this period as they were identified. To ensure quality, this search was limited to peer-reviewed academic literature and grey literature from research bodies and other organizations. Sources were restricted to those written in English. General harms literature was not temporally restricted as the historical development of this concept was crucial to this analysis. Piracy literature, however, was restricted to the period of 2000 to present although a few prior seminal works were included. Numerous search terms and phrases were used and can be seen in Table 1. The following databases were searched: Google, Google Scholar, Criminal Justice Abstracts and KU Leuven LIMO system. A detailed record of the searches and descriptions of the included sources were recorded in a computerized log. For a detailed summary of the parameters and inclusion criteria refer to Table 1 below:

Table 1: Literature Review Search Parameters and Inclusion Criteria

Literature Types	a) Peer reviewed academic literature (books, journal articles and doctoral dissertations)
	b) Grey literature (from research institutions/organizations, NGOs and maritime industry sources)
	c) Government reports and policy documents as well as those from publicly-funded international organizations
Languages Included	English sources
Disciplines Included	a) General harm literature – primarily criminal law, philosophy and criminology (including zemiology)
	b) Maritime piracy – criminology, international and maritime law, maritime and transportation studies, international relations and

	conflict studies, security and strategic studies, psychology, economics and business studies, geography and regional studies (predominately African with a focus on the Gulf of Guinea region)
Time-frame	a) General harms literature – no specific limitations due to the historical importance of this debate b) Piracy literature – predominately from 2000 to present (although a few prior seminal studies were also considered)
Search terms/phrases	a) General harms literature – harms of crime (including other variants such as consequences, costs, impacts and seriousness) b) General piracy literature – maritime piracy, marine piracy and sea piracy (with a primary focus on Nigeria and the Gulf of Guinea) c) Harms of piracy literature – harms of maritime, marine and sea piracy (including other variants such as consequences, costs, impacts and seriousness) with a focus on Nigeria and the Gulf of Guinea
Databases/Search Engines	Stage 1: Google Scholar – used to conduct a broad survey on topic Stage 2: Criminal Justice Abstracts – used to locate peer-reviewed criminology sources Stage 3: LIMO – used to conduct international multi-disciplinary searches for peer-reviewed sources Stage 4: Google – utilized to conduct open-source searches for grey literature and policy documents Stage 5: Bibliographies and systematic, topic-specific, literature reviews were also examined to find additional sources (snowball sampling)

2.2. The Harms of Crime

In this section, the concept of harm is introduced. Attention is placed on its conceptual and definitional complexity. Next, the centrality of harm to crime is discussed. Then, previous attempts to systematically assess the harms of crime are identified and discussed.

2.2.1. Conceptualizing Criminal Harm

Harm has been debated by legal scholars and philosophers for quite some time. Kleinig (1978) noted that, "…even the most cursory reflection shows that harm is conceptually foggy, susceptible to fictional applications, and subject to ideologizing" (p. 27). Not only is harm an ambiguous concept, it is inherently a normative one. Eser (1966) argued that harm, "…as such, does not have a definite meaning. When one speaks of harm, the question necessarily arises—harm to what?" (p. 374). Numerous definitions exist and the debate is ongoing. Though never explicitly defined, in his famous "Harm Principle" of 1859, John Stuart Mill equated harm with

the infringement upon the interests and rights of another. Many European legal theorists define harm as a violation of a legally protected interest which, according to Eser (1966) incorporates material goods and those that are intangible. Eser goes on to define criminal harm as, "…the negation, endangering, or destruction of the legal interests of the respective criminal provisions" (p. 411). Kleinig (1978) argued that the notion of "interests", which is prominent in legal definitions, is ambiguous and needs to be qualified. He further stated that the interests of other entities, beyond that of the individual, can be violated, including society, as a whole, or in part. A more radical suggestion by left-realist critical criminologists (see, e.g., Hillyard & Tombs, 2007) is that the concept of crime should be replaced by that of harm. A new discipline, based upon this line of though by social harm theorists, has been established – zemiology (Treadwell, 2016). The discourse above reveals that numerous definitions exist and that they have evolved from violations to individuals to those that impact other entities as well; and that harms can be both tangible and intangible.

2.2.2. The Centrality of Harm to Crime

According to Paoli & Greenfield (2013), harm, "…constitutes *a*, if not *the*, reason why most actions we now call "crimes" have been criminalized…" and this is the, "…dominant view among legal scholars and policy-makers" (p. 360). The enduring nature of these views can be traced to Roman and old Germanic legal theories, through Mill's "Harm Principle", and to the present (Eser, 1966; Paoli & Greenfield, 2013). The concept of harm is also central to related disciplines including penology, victimology and restorative justice (Eser, 1966; Paoli & Greenfield, 2018).

Within the crime control and prevention sphere, harm-reduction has become the, "…basis for prioritizing and targeting criminal activities" (Greenfield & Paoli, 2013, p. 864). Rubin (1999) claimed that, "…the organizing goal of crime policy should not be viewed as the elimination of crime (an obvious impossibility) or even the reduction of the crime rate but a minimization of the amount of harm that crime imposes" (p. 22). Ashby (2017) notes that, "one method of allocating scarce resources has been to try to focus resources on those problems that cause the most harm to communities" (p. 440). Harm is used as the basis for identifying and prioritizing serious crimes by the European Union (EU) (Paoli & Greenfield, 2018). Harm reduction is also used as a foundation for drug control policy in many jurisdictions (Paoli & Greenfield, 2015). Prioritizing harms necessitates systematic evaluation as all crimes are different and cannot be considered uniformly (Paoli & Greenfield, 2018).

2.2.3. The Systematic Assessment of Harms

The systematic assessment of the harms of crime has received minimal attention by scholars, due in part, as Ratcliffe (2014) notes, to, "…the challenges of measuring and comparing harms across types of crime and other incidents" (p. 165). Similarly, Ashby (2017) contends that, "Identifying the true harms caused by crime is difficult because harm can come in so many forms" (p. 441). Ratcliffe (2014) argues further that the "…difficulty with measuring the overall harm of criminal activity stems from the seemingly intractable task of trying to compare the qualitative impact of one event with another" (pp. 165-166). This is certainly not a straightforward task and one that demands a method of operationalization (Paoli & Greenfield, 2018). With this being said, research has developed focusing on the perceived seriousness and costs of crime, harms related to drugs and criminal victimization (Paoli & Greenfield, 2013, p. 363-366). Each of these "…suggests either a reason, by way of inadequacy, or a means, by way of insight, to advance a harm-based approach" (Paoli & Greenfield, 2013, p. 363).

According to Greenfield and Paoli (2013), "…neither criminology nor the adjacent social sciences have made serious effort to systematically identify, evaluate or compare the harms associated with different crimes" (p. 864). They regard this as a "blind spot", especially within the field of criminology (Paoli & Greenfield, 2015, p. 89). Thus far, only a few attempts have been made to classify harms however few have taken the next logical step of empirically assessing them (Paoli & Greenfield, 2015). From a legal perspective, Von Hirsch and Jareborg (1991) posit a classification of harms based on living standards, pointing out the weaknesses of the welfare interest criterion commonly used within criminal law. In justifying their pragmatic approach, they claim that, "…the living standard provides, not a generalized ethical norm, but a useful standard which law can use in gauging the harmfulness of criminal acts" (pp. 11-12). From a criminological perspective, Maltz (1990) and Dorn and van de Bunt (2010) focused on the classification of harms associated with organized crime. Sherman, Neyroud and Neyroud (2016) developed the weighted Cambridge Crime Harm Index based on sentencing guidelines. Similarly, in measuring police effectiveness at harm-reduction, Ratcliffe (2014) introduced a harms index, also based on sentencing guidelines. Of concern, as noted above, is that few of the above-referenced studies went beyond classification and attempted an empirical assessment (see, e.g., Maltz, 1990; Greenfield & Paoli, 2013; Ratcliffe, 2014).

Filling this gap, Greenfield and Paoli (2013) developed an analytical framework to empirically assess the harms of crime. This harm assessment framework has been tested and applied to a

variety of complex crimes including cocaine trafficking, human trafficking, cannabis cultivation and cybercrime in Belgium (see, Paoli, Greenfield & Zoutendijk, 2013; Paoli, Decorte & Kersten, 2015; Greenfield, Paoli & Zoutendijk, 2016; Paoli, Visschers & Verstraete, 2018). Additionally, Davies (2017) partially applied the framework to examine migrant labor exploitation within UK food supply chains.

2.3. Piracy

Piracy is certainly not a new phenomenon. Manifestations have existed for many centuries (Hassan & Hasan, 2017). Over the past ten years, globally, 2,914 piracy incidents have been reported to the International Maritime Bureau (IMB). Figure 1 reveals a marked decrease in global piracy incidents beginning around 2012, likely a result of successful interventions off the Horn of Africa and in the Malacca and Singapore Straits. Similarly, these statistics also show that most incidents are unsuccessful and do not result in the boarding of vessels by the perpetrators. This could be a product of more vessel owners hardening vessels with anti-piracy defenses, the employment of private armed security and adherence to industry best management practices (BMPs).

Figure 1: Global Piracy Incidents Reported to the IMB (2009 -2018)
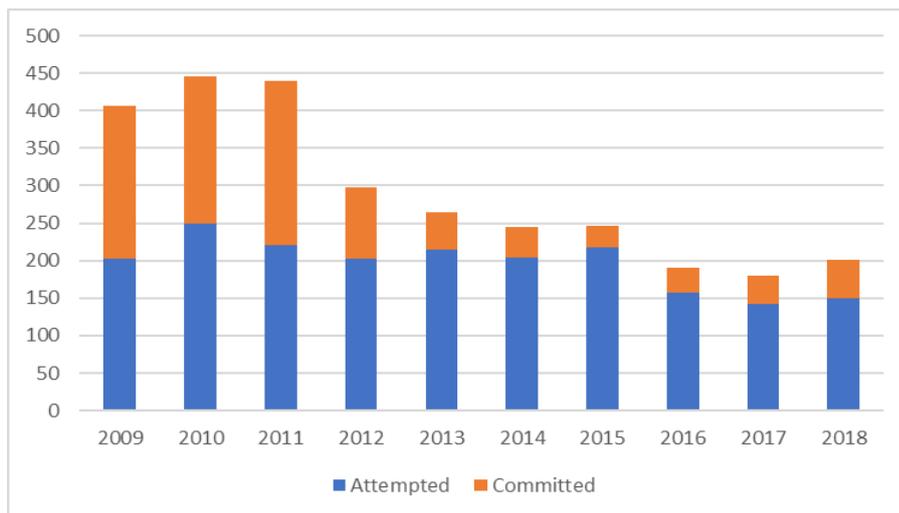
(Source: Compiled from IMB Annual Reports, 2009-2018)

The common perception that piracy incidents only occur in isolated and exotic locales is simply not true. Certainly, there are, and have been, piracy-prone "hot spots", including the Horn of Africa, the Indonesian Archipelago, the Gulf of Guinea and the Malacca and Singapore Straits. However, piracy incidents are not restricted to these "hot spots" and occur, with some frequency, on almost every continent. Over the past five years, IMB (2018, p. 6) data shows

that the spatial distribution of piracy ranges from East Asia (China, Vietnam and in the South China Sea), Southeast Asia (Indonesia, Malaysia, the Philippines, Thailand and in the Malacca and Singapore Straits), the Indian sub-continent (India and Bangladesh) South America and the Caribbean (Brazil, Colombia, Ecuador, Guyana, Haiti, Mexico, Peru and Venezuela), the Middle East (Yemen), the Pacific (Papua New Guinea) and Africa (22 countries, the Gulf of Guinea, Gulf of Aden and the Red Sea).

Further, it has been estimated more than half of all piracy incidents go unreported—a conservative estimate with some reaching as high as two thirds to even 90% (Murphy, 2010). These incidents go unreported for a host of reasons. Vessel owners and masters have almost no incentive to report minor incidents that could result in higher insurance premiums, damage to the firm's reputation, costly delays in port incurred during investigations and employees demanding higher pay for traversing piracy-prone areas (Forsyth, Gisclair & Forsyth, 2009; Elleman, et al., 2010; Murphy, 2010). States and port authorities are also reluctant to report incidents that could damage their reputation resulting in a loss of trade (Murphy, 2010). Further, incidents involving fishing vessels and smaller commercial vessels are almost never officially reported (Elleman, et al., 2010). In sum, "…the piracy that is reported is the piracy no one can ignore" (Murphy, 2010, p. 69).

2.3.1. Defining Maritime Piracy

The legal concept of universal jurisdiction was first applied to the crime of piracy, and pirates were regarded as *hostis humani generis* – an enemy of humankind (Halberstram, 1988; Greene, 2008; Twyman-Ghoshal, 2014). The conceptualization of piracy has evolved over time and a multitude of definitions exist, a process which Kelly (2013) refers to as a "definitional odyssey" (p. 42).

Though a centuries old concept, there is little consensus among scholars on how piracy should be defined. The widely varying definitions, some broad and some narrow in scope, come from different viewpoints, including international law, domestic law and academia. Acceptance of definitions varies and is based upon perspective and purpose. Hassan and Hasan (2017) argue that this lack of uniformity can negatively impact the efficacy of counter-piracy policies and responses (p. 2). With this being said, the narrow definition provided under the United Nations Convention on the Law of the Sea (UNCLOS) is widely accepted within the international community (Nyman, 2011; Hassan & Hasan, 2017). Under Article 101 of UNCLOS, acts of piracy consist of the following:

(1) any illegal acts of violence, 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

    (i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;

    (ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;

(2) 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;

(3) any act of inciting or of intentionally facilitating an act described in the list (1) or (2) of this article.

This definition, however, has frequently been criticized as being dated and for its narrow scope (Mair, 2011; Bento, 2011; Twyman-Ghoshal, 2014). The difficulties resulting from this narrow scope are found within the following: "…the 'private ends' restriction, the two-ship clause, the issue of reverse hot pursuit, and the locational specificity of 'on the high seas'" (Nyman, 2011, p. 865). The 'private ends' restriction is not clearly codified and excludes incidents involving terrorism at sea, state sponsored acts and those where private and public actors might be interspersed (Bento, 2011; Nyman, 2011; Twyman-Ghoshal, 2014). The two-ship clause, essentially a ship to ship attack, excludes many piratical acts while a ship is at berth in port (Nyman, 2011). Concerning locational specificity, for an incident to be considered an act of piracy it must take place on the high seas, beyond state jurisdiction (refer to Figure 2). Thus, under international law, identical acts, perpetrated in territorial and inland waters, cannot be classified as piratical acts and are broadly characterized as armed robbery against ships (Nyman, 2011 and Twyman-Ghoshal, 2014). Further, the UNCLOS definition excludes attempted attacks (Bento, 2011). An important criticism, asserted by Twyman-Ghoshal (2014) and Bento (2011) and from a criminological perspective, is that UNCLOS was drafted based on offender motivations and issues of sovereignty, ignoring the potential impact on victims.

Figure 2: United Nations Convention on the Law of the Sea (Maritime Zones)
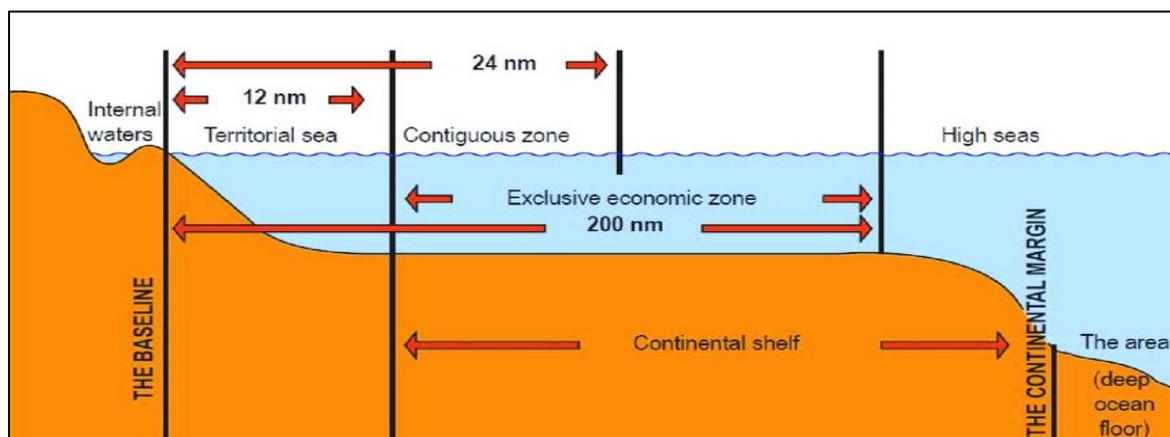
(Source: Norwegian Polar Institute - http://www.npolar.no/en/)

Though not recognized by international law, the IMB (1992) offers a less restrictive, victim-centered, definition that focuses on the criminal act, rather than the motivations of the perpetrators, and addresses the deficiencies of UNCLOS described above (Bento, 2011; Twyman-Ghoshal, 2014). The IMB defines piracy as follows: "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" (IMB, 1992, p. 2). Coggins (2012) notes that the IMB definition is used more commonly than UNCLOS and, according to Hassan and Hasan (2017), "…is widely recognised by the shipping industry and is frequently used in the literature concerning piracy" (p. 5). Twyman-Ghoshal (2014) echoes this, noting that it is more practical for research purposes. Additionally, the IMB has been formally recognized by a United Nations (UN) specialized agency, the IMO, via a special resolution in 1981 (Letts, 1999; Eadie, 2001).

2.3.2. Piracy Typologies

As with most complex criminal activities, piracy manifests in different ways. Consequently, "understanding the differences between the various kinds of piracy activities…is an important prerequisite for successful interventions" (Jacobsen & Nordby, 2015, p. 21). Prior to any discussion of these typologies or modes, it is important to clarify that piracy, itself, is the unlawful act of boarding a vessel (or, in some cases, attempting to do so) with the intent to further commit another crime such as cargo theft, kidnapping and robbery (IMB, 1992). Typologies are often used to categorize piracy incidents by these accompanying acts—be it the primary objective or the most serious act committed by the perpetrators.

Numerous typologies have been developed by scholars, official bodies, the shipping industry and NGOs. The context and utility of these typologies differs according to their intended purposes. Severity typologies, based upon consequences for the crew and vessel, have been adopted by the United Nations Institute for Training and Research (UNITAR, 2014) and the Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia (ReCAAP, 2018). The most common typology, provided by the IMO, classifies piracy into three categories: low-level armed robbery, medium-level armed assault and robbery and major criminal hijacks (Twyman-Ghoshal, 2014). These categories are derived from offender methods, motives and consequences to crew and vessel. Chalk's (2008) typology, builds upon that used by the IMO, combining location, severity and offender motives. His typology consists of harbor and anchorage attacks, vessel robberies in territorial waters and the high seas and,

most seriously, hijacking vessels on the high seas (Chalk, 2008: 5-6). Dillon (2005) argues for an expanded typology that includes a variety of maritime crimes, ranging from corruption, sea robbery, piracy and maritime terrorism. Anderson's (1995) classification is centered on root causes including geopolitical and cultural factors.

Other typologies were developed to describe specific regional manifestations. For instance, regional typologies, developed for the Gulf of Guinea (see, e.g., Jacobsen & Nordby, 2015), often classify the theft of oil products or the targeting of vessels involved in the oil and gas industry as distinct from other forms of cargo theft, labelling them as "petro-piracy". However, as the *modus operandi* of these incidents is no different than that of any other type of cargo theft of seizure, it seems counter-intuitive to further delineate these incidents into separate categories based upon the specific type of cargo taken. Further, implying that they are distinct to this region is incorrect.

A clearer offence-based typology, one that centers on the primary objective of the perpetrators, is that of Hastings (2012) who distinguishes three, albeit non-mutually exclusive categories—robbery, ship/cargo seizures and kidnapping for ransom. Although seemingly simplistic, it can be used to classify acts of piracy in multiple regional contexts and allows for variation within categories. Providing further support, the United Nations Office on Drugs and Crime (UNODC) relies upon an almost identical definition (2013, p. 12).

2.3.3. Brief Overview of Academic Literature on Piracy

The volume of literature addressing modern piracy is quite extensive and spans a variety of academic fields. This section provides a brief overview of major research areas within these fields and a sampling of some of the key studies. Specific attention will be placed on the criminological literature.

Interest in piracy has waxed and waned and is analogous with temporal and spatial manifestations. As mentioned earlier, during much of the twentieth century most viewed piracy as a thing of the past (Chalk, 2009a; Bueger, 2014; Twyman-Ghoshal, 2014). Beginning in the early to mid-1990s there was a resurgence of interest. Furthermore, as noted by Coggins (2012), the wealth of available data that currently exists allows for the systematic study of piracy from different perspectives and has also contributed to this renewed interest (p. 606). Though legal scholars have dominated the study of piracy, interest has increased in other fields including, international relations, maritime and transportation studies, security and strategic studies, geography, economics and business studies. Much emphasis has been devoted to root causes

(see, e.g., Whitman & Suarez, 2012; Biziouras, 2013), scope and dimensions (see, e.g., Chalk, 2009a; Chalk & Hansen, 2012), geopolitical factors including state capacity, fragility and failure (see, e.g., Hastings, 2009; Murphy, 2010; Daxecker & Prins, 2017), and legal and policy responses (see, e.g., Kraska & Wilson, 2009; Bueger, 2014; Chalk, 2012; Murphy, 2012). This overview is by no means exhaustive and is only meant to provide a sample of the varied perspectives used to study contemporary piracy.

By comparison, criminologists have been relatively silent on contemporary piracy. In 2009, Shane and Lieberman pointed to the potential utility of criminological theories in explaining aspects of piracy. At the time of Twyman-Ghoshal's assessment of criminological research on piracy in 2014, she observed that relatively few empirical studies existed, referring only to Vagg (1995) and Worrall's (2000) theoretical evaluations. Although other examples of criminology-based studies can be found pre-dating Twyman-Ghoshal's analysis, her point is not lost. Forsyth, et al. (2009) remarked that, "most criminologists are landlocked…as if crime on the water did not exist" (pp. 669-670). This neglect is due in part, to data deficiencies, definitional problems and a general lack of knowledge of the topic by criminologists (Worrall as cited by Twyman-Ghoshal, 2014, p. 283).

Though still catching up, there is now a growing body of literature within criminology. Both Forsyth, et al. (2009) and Twyman-Ghoshal (2014) examined the extent and characteristics of modern piracy using descriptive statistical analysis, a reasonable starting point for understanding the phenomenon. A handful of scholars have focused on piracy prevention through the lens of opportunity theories including situational crime prevention (see, e.g., Rengelink, 2012; Bryant, Townsley & Leclerc, 2014; Shane & Magnuson, 2016) and routine activities theory (see, e.g., Townsley, Leclerc & Tatham, 2016). Marchione and Johnson (2013) and Townsley and Oliveira (2015) examined the spatial and temporal patterns of piracy. Collins (2012) explored Somali-based piracy through the moral panic perspective. Clark's (2015) qualitative study investigated the regional influence of Somali piracy and long-term consequences.

Compared with other criminal phenomenon, there still seems to be only minimal interest in piracy by criminologists. Although much of the work, to date, has taken the rational choice perspective, theories throughout the criminological spectrum could provide valuable insights. One can see the potential of other theories including strain, social control and learning, to name just a few. Another interesting observation is that many of the previous studies employed large-

N quantitative methodologies. Few qualitative studies exist despite the enormous potential of this methodological approach.

From a regional perspective, much of the literature is focused on Somalia, and to a lesser extent, the Strait of Malacca, Southeast Asia, and the South China Sea. However, a budding corpus of literature has begun to focus specifically on the Gulf of Guinea and Nigeria addressing a variety of topics including the nature, scope and root causes, costs and impacts, suppression, assessment of responses and the role of the petroleum industry (see, e.g., Murphy, 2013; Orji, 2013; Fiorelli, 2014; Hasan & Hassan, 2016; Oyewole, 2016; Anele, 2017).

2.3.4. Costs, Consequences and Impacts of Piracy – International & Regional Perspectives

Though the harms of piracy, as conceptualized in this research, were not specifically addressed in the literature, the costs, consequences and impacts have been examined, to some extent, in both empirical and descriptive analyses, both at the regional and international levels. Often, these terms have been used interchangeably in much of the literature to describe the overall "harms" of piracy, be they tangible or intangible. Cost is frequently used in studies attempting to place a dollar amount on the impacts of piracy. Much of this literature is concentrated on economic and trade-related impacts. Others have attempted comprehensive macro-level analyses on the global economic impact (see, e.g., United Nations Conference on Trade and Development [UNCTAD], 2014; Oceans Beyond Piracy [OBP], 2017).

Though these studies have contributed to the knowledge base, relying on the final cost estimates is problematic. Although there is a general consensus that the economic impact of piracy is significant, these studies have produced vastly differing estimates. It is important to acknowledge that these studies "…differ in terms of their methodology and approach and, therefore, are neither directly comparable, nor provide a definite authoritative assessment of piracy-related costs" however they can "…provide an indication of the order of magnitude of the economic costs associated with piracy" (Whitman & Saurez, 2012, p. 13). At this stage, due to underreporting, accurately estimating all of the costs, at the global level, might not be feasible. Looking for more specificity, several studies with a much narrower focus, have evaluated economic and trade-related impacts at the state or regional level, a seemingly more manageable task (see, e.g., Bensassi & Martínez-Zarzoso, 2010; Martínez-Zarzoso & Bensassi, 2013; Burlando, Cristea & Lee, 2014; Morabito, 2016). As with much of the piracy literature, there is a prominent focus-bias on Somalia.

The human costs of piracy have garnered less attention, with few notable exceptions (see, e.g., Whitman & Saurez, 2012; OBP, 2017). These studies have addressed the various risks and impacts on seafarers and their families. A few have examined the impact of piracy on victims, mostly from a psychological perspective, and have found that the resulting trauma is associated with a host of psychopathological disorders including, post-traumatic stress disorder (PTSD), anxiety, depression, somatic disorders, etc. (see, e.g., Abila & Tang, 2014; Ziello, Angioli, Fasanaro & Amenta, 2013; Seyle, Fernandez, Dimitrevich & Bahri, 2018). Nincic (2009) examined the role of piracy in worsening the already critical humanitarian crises in Africa, noting that pirates, especially off Somalia, target vessels carrying vital relief supplies. Criminological literature addressing the human impact of piracy is again noticeably absent though one can see the potential value of victimological and other perspectives.

At the time of this research, no environmental disaster resulting from piracy has been reported. However, when one considers the volume of hazardous materials transported by sea, the risk of a potentially catastrophic environmental event is always present (Keyuan, 2005; Chalk, 2009b). After an encompassing search, only two empirical studies could be found addressing possible environmental impacts of piracy. From a criminological perspective, Herbig and Fouche (2013), using secondary data sources, mapped piracy incidents in African waters to predict the threat of devastating environmental events. Mazaris (2017) investigated the spatial overlap of Marine Protected Areas (MPAs) and piracy-prone areas finding that maritime insecurity can impact conservation efforts.

In reference to the Gulf of Guinea and Nigeria, interest in the impacts of piracy has been minimal but seems to be garnering more attention. Wajilda (2013) provided a thorough overview of the potential economic implications for Nigeria. Ahmodu, Obayori and Onyema (2017) and Ofosu-Boateng (2018) examined the impact of piracy on transportation within the Gulf of Guinea and Nigeria, finding significant negative effects. Essien and Adongoi (2015) evaluated the impact of piracy on maritime businesses in Bayelsa State, Nigeria, finding statistically significant negative consequences, especially on small-scale fishermen. Similarly, Adongoi, Brown and Udensi (2017) and Ambrose and Nwaka (2017), found that piracy has devastated the artisanal and commercial fishing industries in Nigeria.

2.4. Nigerian, Regional & International Counter-Piracy Policy Frameworks and Interventions

This section provides an overview of Nigerian, regional and international counter-piracy polices and actual interventions. The increasing intensity of incidents and the considerable risks to various stakeholders has prompted much interest in remediating the problem and has led to many interventions.

2.4.1. Nigerian Counter-piracy Policies and Actual Interventions

Within the Gulf of Guinea, "Nigeria is both the country most affected by piracy and its main cause" (Lucia, 2015, p. 14). In 2014, a UNODC information gathering mission to the Gulf of Guinea found that, "…no Gulf of Guinea State possessed the necessary mix of jurisdictional provisions, offence-creating legislation, and prosecutorial and judicial capacity to undertake piracy prosecutions" (p. 21). This "legislative deficit" certainly holds true for Nigeria where no domestic anti-piracy legislation exists, making prosecution almost impossible (Kamal-Deen, 2015). Though legislation has been drafted (Suppression of Piracy and Maritime Offences Bill), it has not yet been enacted by the National Assembly. Moreover, despite Nigeria's ratification of the IMO's Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation (SUA) of 1988, provisions have yet to be incorporated into national law, hampering efforts to combat maritime crimes in territorial waters (Kamal-Deen, 2015; Jacobsen & Nordby, 2015). According to Kamal-Deen (2015) and Rohwerder (2016), this leads to the phenomenon known as "catch and release syndrome" effectively creating impunity for perpetrators.

One of the central mandates of the Nigerian Maritime Administration and Safety Agency (NIMASA) is to provide for maritime security in territorial waters. Though Nigeria has no dedicated coast guard, NIMASA assumes some of these functions (Østensen, Brady & Schutte, 2018). However, as Pérouse de Montclos (2012) notes, it is a civilian body, not authorized to carry arms nor is it adequately equipped, thus relying upon the Nigerian Navy for interventions. NIMASA implemented and oversees the Maritime Guard Command (MGC) with the Nigerian Navy and operates a public-private partnership under which private security companies are contracted and "…have responsibility for conducting patrols, operating secure zones, escorting commercial traffic, and protecting offshore oil facilities" (Rohwerder, 2016, 23). Though the Nigerian Navy, one of the region's largest and well-equipped, and the Marine Police (a unit of the National Police) have an active presence in territorial waters, their efforts are critically

hampered by a general lack of resources and capacity, a lack of adequate training, poor maintenance and limited surveillance technology (Dogarawa, 2013; Hasan & Hassan, 2016). Moreover, the Navy competes with the other armed forces for scarce military resources and there has been a lack of coordination between enforcement bodies. There have also been widespread allegations of corruption within the Navy and police (Lucia, 2015; Oyewole, 2016; Østensen, et al., 2018).

Two common themes were observed within much of the literature. First, national policy responses have been debilitated by rampant corruption within the maritime sector (see, e.g., Pérouse de Montclos, 2012; UNODC, 2013; Jacobsen & Nordby, 2015; Østensen, et al., 2018). Second, there is what Jacobsen and Nordby (2015) term widespread "sea blindness" with which they refer to a lack of political will, knowledge and interest in addressing the problem (p. 15).

2.4.2. Regional Counter-piracy Policies and Actual Interventions

As noted by Dogarawa (2013), "the sophistication of modern pirates makes it difficult for one country to control" (p. 122). Thus, regional responses are crucial and have been quite extensive. Bilateral cooperation between Nigeria and regional states (Benin, Togo and Ghana) has taken the form of joint patrols and cooperation agreements. These interventions have been criticized as being temporary in nature, lacking the appropriate legal frameworks, capacity and for not addressing root causes (Hasan & Hassan, 2016). Though the Economic Community of West African States (ECOWAS) was slow to get involved in the maritime security realm, recently a central maritime security office was established as well as operational patrol zones (Lucia, 2015). The ECOWAS Strategy Plan, in cooperation with the Gulf of Guinea Commission (GGC) and the Economic Community of Central African States (ECCAS), focuses on information sharing, resource pooling and conflict prevention through appropriate governance of the oil and gas sectors (Lucia, 2015, p. 17). The three organizations also adopted the non-binding Yaoundé Code of Conduct to address a variety of maritime security issues including organized crime, terrorism and illicit fishing activities, predominately focusing on information sharing, interdiction, prevention and victim support (Lucia, 2015; Osinowo, 2015; Rohwerder, 2016). Implementation has been slow and similar to bilateral efforts, according to Lucia (2015), the interventions have been criticized for capacity issues, "sea blindness", trust issues amongst members and foreign influence.

2.4.3. International Counter-piracy Policies and Actual Interventions

Though many states and international bodies have an interest in combatting Nigerian-based piracy, their responses are hampered by issues of national sovereignty (Felbab-Brown, 2014; Rohwerder, 2016). International naval enforcement actions can only take place in international waters. As such, foreign (including the U.S, France, China and others) naval activities have been limited to naval and law enforcement capacity building and multi-national exercises (Fiorelli, 2014; Rohwerder, 2015).

There have been a few major efforts to counter piracy in the region by the EU and the UN. The EU has taken an interest in the Gulf of Guinea and Nigeria for a number of geopolitical reasons. In 2014, the EU Strategy on the Gulf of Guinea was adopted followed by an Action Plan in 2015. The goals of the plan are: "…capacity building; strengthening the rule of law; supporting prosperous economies, and assisting communities to build resilience and resist criminal activities; and strengthening regional cooperation" (Lucia, 2015, p. 20). UN involvement in the Gulf of Guinea has also been robust, especially that of UNODC and the United Nations Office for West Africa (UNOWA) via a partnership project, the West African Coast Initiative (WACI). The primary goals of this initiative include law enforcement capacity building and training, intelligence sharing, improving anti-piracy legislation, peace building and security sector reforms (UNODC, 2014 and Lucia, 2015). Although much emphasis has been on capacity building and security enhancement, EU and UN initiatives, unlike other regional and international ones, do at least attempt to address some of the root causes of piracy (Jacobsen & Nordby, 2015; Rohwerder, 2016).

2.5. Summing Up and Evaluating the Literature

The discourse above reveals the breadth and complexity of a rather nebulous activity, piracy. The review revealed several common themes, critiques and gaps in the literature which the present analysis will attempt to address:

The Harms of Crime

- Harm, a normative concept, has been debated for centuries by philosophers and legal scholars. Definitions have evolved from violations to individuals to those that impact other entities as well; and that harms can be both tangible and intangible. For analytical purposes, an expansive definition is required, which is provided by Greenfield & Paoli (2013).

- The systematic assessment of the harms of crime has received minimal attention by scholars, most notably by criminologists. This is likely due to the challenges involved in doing so. Attempts have been made to classify harms but few have taken the next step and attempted an empirical assessment. Greenfield and Paoli's (2013) assessment framework is an exception and has already been tested on several types of complex crimes.

Piracy

- Piracy is a nebulous activity, with varying temporal and spatial manifestations. The debate surrounding its definition reveals this complexity. There is widespread disagreement over how piracy should be defined. Apart from the IMB definition, most current international definitions, including UNCLOS, are far too narrow.

- There is a large volume of literature addressing different aspects of piracy. Criminological interest, however, is limited despite the enormous potential of theories to broaden the knowledge-base. Much of the criminology research has taken a rational choice perspective and employ large-N quantitative methods. Little qualitative research exists within the field addressing piracy.

- Most of the literature is spatially focused on Somalia, the Strait of Malacca, Southeast Asia, and the South China Sea. Recently some focus has shifted to Nigeria and the Gulf of Guinea.

- Research concerning the potential environmental harms of piracy is almost non-existent. Although this topic is often anecdotally mentioned in the literature, only two articles could be found devoted to this topic.

- Much attention has been dedicated to economic and trade-related impacts and to a lesser extent, the human costs of piracy. A few have attempted comprehensive macro-level analyses of the global economic impact of piracy, however, relying on these cost estimates is problematic. The "global" focus of these analyses is far too broad and neglects the possibility that the impacts of piracy can vary under differing contexts and that there are differences between manifestations. The challenges of trying to assess the global impact of piracy might be insurmountable. It may be more manageable to concentrate on a specific regional or national manifestation.

- There have been few systematic attempts to assess multiple harms or costs on multiple bearers. Most have focused only on one type of harm and how it impacted a very specific bearer and/or interest dimension.

- Interest in the impacts of piracy by criminologists has been minimal. Similarly, region-specific interest in the consequences of piracy in Nigeria is also limited but seems to be increasing.

Current Piracy Policies and Actual Interventions

- Nigerian policies are lacking and responses are fraught with corruption and "sea blindness".

- Nigeria lacks the legal framework to address the piracy problem effectively creating an environment of impunity for the perpetrators.

- Capacity issues hinder naval and law enforcement efforts.

- International and regional counter-piracy initiatives are predominately geared towards capacity building, ignoring the underlying root causes of piracy in Nigeria (with a few exceptions). There is also a general consensus that militarized responses and capacity building will not solve the problem and are only a temporary fix. Initiatives have been criticized for slow implementation, foreign meddling, a general lack of political will and trust issues among regional states.

- Harm-reduction is not a prominent component of the current policies and interventions.

3. METHODOLOGY

This chapter provides a detailed description of the methodologies employed in this analysis. Specific attention is devoted to the conceptual and analytical frameworks that provide a foundation for this research. Subsequent sections describe the overall research design, sampling process, data collection techniques and analysis methods, research quality and methodological limitations.

3.1. Problem Statement and Rationale

Under the UNCLOS Convention (1984), vessels are guaranteed the right of *innocent passage* through the territorial seas of coastal states and *free passage* in EEZs and the high seas. Further, as stipulated in Article 25, it is the duty of coastal states to prevent passage which is not innocent (e.g., pirate vessels). Further, the Convention "…requires all States to cooperate to the fullest possible extent in the repression of piracy" (UN, 2012, p. 13). Ideally, with these protections and basic rights, vessels should be able to conduct their lawful business unmolested by pirates with the expectation that coastal states are doing everything practicable to minimize the risk of such attacks. Throughout much of the world vessels can operate absent the risk of piracy. This is not the case in the Gulf of Guinea, and more specifically in the waters off Nigeria.

Contemporary Nigerian-based piracy is particularly troubling—a manifestation that is extremely violent, surpassing other global piracy "hotspots", and one that is spreading throughout the Gulf of Guinea region with potentially widespread ramifications. According to the IMB, in 2018, a quarter of all reported acts of piracy globally were perpetrated in the littoral waters of Nigeria, a marked increase from the previous year. Further, almost half of all seafarers kidnapped globally were abducted in Nigeria waters (IMB, 2018, pp. 6-12). The Gulf of Guinea is now recognized as the most dangerous and violent maritime locale with Nigeria at its "epicenter", accounting for approximately 80% of piracy incidents within the region (Kamal-Deen, 2015, pp. 97-99). As such, "Nigeria is thus considered to be both the source and the solution to the problem", notes Lucia (2015, p. 2).

To demonstrate the societal relevance of Nigerian-based piracy a number of factors are discussed in the following. First, piracy has the potential to negatively impact regional economies which are largely dependent upon oil and gas production, the region's primary economic resource. Estimates place one tenth of global oil reserves in the waters of the Gulf of Guinea, with Nigeria as the largest regional producer and exporter (Fiorelli, 2014, p. 6). This

uncontained criminality is a clear threat to global energy security as many countries depend upon this energy source (Lucia, 2015, p. 2). Second, piracy jeopardizes seaborne trade, particularly that involving the oil and gas industry, and increases shipping costs for a number of reasons including higher insurance premiums, the added expense of hardening vessels, the deployment of private security, rerouting, physical damage and cargo loss. Third, seafarers are at risk of violent assault and kidnapping resulting in injury, psychological trauma and death. Fourth, evidence suggests direct and indirect links between pirates, militant groups, terrorists and organized criminal networks (Nowakowska-Krystman, 2016; Regan, 2019). Fifth, considering the volume of hazardous materials transported via sea routes, the potential for catastrophic environmental events stemming from piracy incidents is ever present (Chalk, 2009b; Herbig & Fouche, 2013). Similarly, maritime insecurity can limit a state's ability to protect marine resources (Mazaris, 2017). Lastly, piracy jeopardizes regional food security. Nigerians depend upon fish as a main source of dietary protein, not to mention as a main export item. Nigerian commercial and artisanal fishing fleets have suffered, significantly, due to piracy attacks as evidenced by the drastic reduction in fleet size (Chalk, 2009b; Essien & Adongoi, 2015; Adongoi, Brown & Udensi, 2017). Many are no longer willing to risk their safety and have left the industry.

From a scientific perspective, although adjacent fields have made significant contributions to the study of piracy, criminologists, by comparison have been relatively quiet on the subject. Further, very little is known about the harms associated with piracy including bearers, types, severity, incidence and distribution. The few studies that do exist focus mostly on tangible and quantifiable harms and have ultimately tried to affix cost estimates to them. None have attempted a systematic assessment of all harms (both tangible and intangible) and their impact on all potential bearers of harm.

By addressing these deficiencies this research adds a significant contribution to the study of piracy and is value-added for a few reasons. First, it tackles a seriously under-studied phenomenon within the field of criminology. Second, it offers the first systematic and empirical assessment of the harms of piracy. Third, it contributes to an emerging body of literature focusing on the harms of crime. Lastly, it provides a further test of Greenfield and Paoli's (2013) harm assessment framework. Ultimately, the results from this assessment could potentially be used to develop more effective and data-driven policies and interventions with harm-reduction as the primary goal. Further, ascertaining which harms deserve priority could

allow for the better allocation of scarce resources and in determining which interventions are more likely to be successful.

3.2. Conceptual, Theoretical and Analytical Frameworks

Prior to framing this analysis, it is important to specify a few key concepts that will be used throughout. First, this research relies upon the comprehensive IMB (1992) definition of piracy, one that is widely accepted by the shipping industry and researchers alike: "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" (p. 2). Second, when defining harm, Eser (1966), Turner (2014) and Ratcliffe (2014) collectively argue that a broad definition is required for analytical purposes. Largely based on the works of Ashworth (2006) and Feinberg (1984), Greenfield and Paoli (2013) broadly define harm as setbacks or violations to stakeholders' legitimate interests. This broad definition qualifies "interests" and allows for the accrual of a variety of harms, beyond just those that are legal and tangible and by multiple stakeholders. As such, this definition was adopted in the present research.

Overall, this research is guided by Greenfield and Paoli's (2013) harm assessment framework which has been empirically tested on a variety of complex crimes. The framework is a multi-step exercise comprised of distinct analytical phases and processes (refer to Figure 3 below). The first analytical phase, corresponding to Research Question #1 and sub-questions, requires the articulation of a business model, or *modus operandi,* of Nigerian-based piracy. The business model, "…depicts the typical logistics or modus operandi of a criminal activity and provides a strong evidentiary base for identifying possible harms, evaluating their severity and incidence, prioritizing them and establishing their causality" (Greenfield & Paoli, 2013, 866).

The first step requires the identification of the distinct modes of Nigerian-based piracy. Hastings' (2012) offence-based typology, described in the literature review chapter, is used in this analysis. This typology is largely centered upon the intent, motives and primary objectives of the perpetrators. Hastings classifies piracy into three types: robbery, ship/cargo seizure and kidnapping for ransom. The second step includes the identification of the principal operational phases of each mode and the participants involved in each. In the final step, the "accompanying" and "enabled" activities, for each mode, are uncovered.[1] This modelling

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[1] "Accompanying" activities are those that occur along with the primary ones and "enabled" activities are those that are facilitated by the primary activities (Greenfield & Paoli, 2013; Greenfield, et al., 2016).

exercise is vital to the next analytical phase of the assessment framework and should help to identify and assess the harms associated with Nigerian-based piracy.

Figure 3: Harm Assessment Process
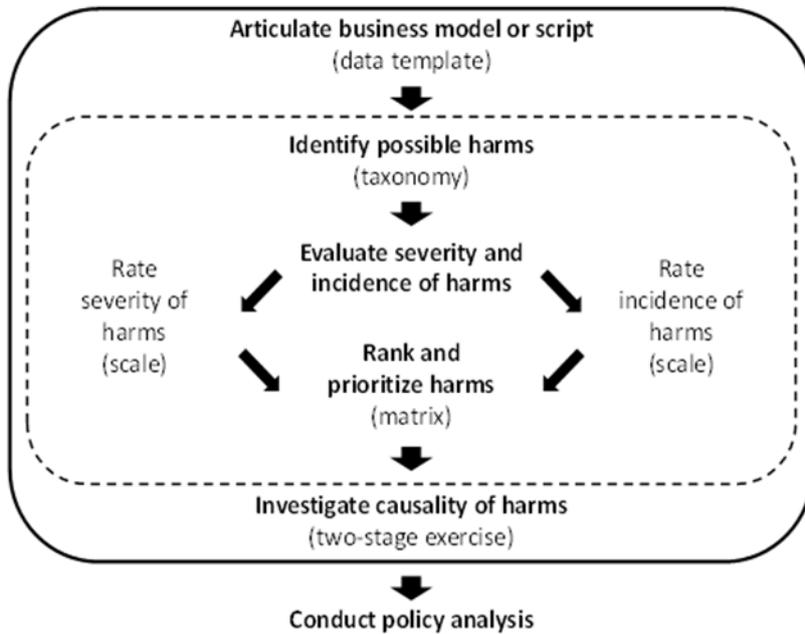
(Source: Adapted from Greenfield & Paoli, 2013; Paoli, et al., 2013)

The next phase, also involving multiple analytical processes, entails the identification and assessment of harms and directly corresponds to Research Question #2 and sub-questions. First it is necessary to identify the possible "bearers" that are harmed by Nigerian-based piracy. "Bearers" are those individuals and entities that are harmed by acts of piracy. The bearers will be classified according to Greenfield and Paoli's (2013) taxonomy (refer to Table 4 below) and include individuals, private sector entities (business enterprises and non-governmental organizations), public entities (official government bodies and agencies) and the environment (both physical and social). Second, the "interest dimensions" impacted by the harms for each bearer will be identified and classified utilizing Greenfield and Paoli's (2013) harm-type taxonomy which includes: functional integrity, material interests, reputation and privacy and autonomy. As exhibited in Table 2, harms can impact the different classes of bearers in different ways and some harms do not affect all bearer classes.

Table 2: Harm Bearers and Types of Harms

| Type of Harm | **Bearer of Harm** | | | |
	Individuals	Private-sector Entities	Government Entities	Environment
Functional Integrity	X*	X**	X**	X***
Material Interest	X	X	X	n/a
Reputation	X	X	X	n/a
Privacy	X	X	X	n/a

Notes: X, applicable; n/a, not applicable; * functional integrity consists of physical and psychological integrity; ** functional integrity consists of operational integrity; *** functional integrity consists of physical, operational and aesthetic integrity.

Source: Paoli & Greenfield & Zoutendijk 2013, Page 409

In the next step, the incidence and severity of the identified harms is assessed (sub-research questions RQ2$_c$ and RQ2$_d$). Two ordinal scales from Greenfield and Paoli's framework will be employed as well as, "…a matrix that combines them to evaluate the severity and incidence of each harm and to compare results across harms" (2013, 871). The incidence ratings, or the frequency harms accrued by bearers, include the following: continuously, persistently, occasionally, seldom and rarely. Harm severity ratings include: catastrophic, grave, serious, moderate and marginal. In line with Von Hirsch and Jareborg (1991), for individual bearers, harm severity is conceptualized and measured as intrusions on fundamental "living standard" levels including: subsistence, minimal, adequate, enhanced, lastly, marginal or no impact (Greenfield & Paoli, 2013, 871-872). Although the same severity ratings are applied to other classes of bearers, instead of evaluating impact as intrusions on "living standard" levels, harms are assessed on the basis of an entity's capability "…to fulfil its 'mission', defined as the entity's *raison d'être*" (Greenfield & Paoli, 2013, 872). These "mission capability" impact levels include: viability, minimal, adequate, enhanced, lastly, marginal or no impact (refer to Table 3 below).

Table 3: Benchmarks for Severity Ratings

| | **Benchmarks for severity ratings** | |
| | Individuals | Entities |
Severity Rating	Level of living standard at which damage occurs	Level of mission capability at which damage occurs
Catastrophic	1°. Subsistence	1°. Viability*
Grave	2°. Minimal standard of living	2°. Minimal mission capabilities
Serious	3°. Adequate standard of living	3°. Adequate mission capabilities
Moderate	4°. Enhanced standard of living	4°. Enhanced mission capabilities
Marginal	Marginal or no effect at any level	Marginal or no effect at any level

*Viability consists of survival, but with maintenance of no more than elementary institutional capacities

to function. (First published in Paoli et al., 2013)

Harms are then prioritized, based upon incidence and severity ratings (sub-research question RQ2e). Greenfield and Paoli note that, "In combination, these ratings can provide a preliminary basis for prioritizing harms, whereas a severity or incidence rating, alone, cannot" (2013, p. 873). Priority scores range from very low (V/L) to very high (V/H) (refer to Table 4).

Table 4: Matrix for Prioritizing Harms

Severity	Incidence				
	Continuously	Persistently	Occasionally	Seldom	Rarely
Catastrophic	VH	H	H	M/H	M
Grave	H	H	M/H	M	M/L
Serious	H	M/H	M	M/L	L
Moderate	M/H	M	M/L	L	L
Marginal	M	M/L	L	L	V/L

Notes: V/H = Very high priority; H = High priority; M/H = Medium high priority; M/L = Medium low priority; L = Low priority; V/L = Very low priority

(Source: Paoli & Greenfield, n.d.)

In the final process of this stage, causality is investigated in two steps (sub-research question RQ2f). The first step requires that the distance between the harms and the principal phases of the criminal activity be identified. In the second, "…the extent to which the harms associated with a criminal activity arise from the policy environment, including the prohibition of the criminal activity and related regulations and enforcement practices" is examined (Greenfield & Paoli, 2013, p. 880).

Before proceeding, a few caveats should be noted. Greenfield and Paoli (2013, pp. 870-871) set a few important boundaries within their framework which are also respected in this analysis[2]. Material harms accrued by criminals and/or criminal organizations resulting from the actions of other such individuals or groups are excluded. In reference to piracy, for instance, the theft of property from one group of pirates by another would not be considered. Second, benefits of criminal activities are not considered. Third, with the inclusion of "accompanying" activities, this analysis acknowledges that, "…perpetrators might, themselves, constitute the bearers of the harms of some accompanying activities" (Greenfield & Paoli, 2013, p. 870). Fourth, expenses accrued by law enforcement and the military are not included. In reference to piracy, since police and military agencies share responsibility for enforcement activities, both costs are excluded. Similarly, the costs of crime prevention measures taken by both individuals

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[2] For a detailed discussion on the motives for these boundaries, refer to Greenfield & Paoli (2013), pages 870-871.

and private entities are not considered. For example, these costs might include those associated with insurance, rerouting, vessel hardening, and hiring private armed and unarmed security.

3.3. Research Design

The harm assessment framework allows for the exploitation of all available data, whether qualitative or quantitative. As such it is well-matched for a mixed methods approach. Greenfield and Paoli (2013) note that, "This flexibility buys us the freedom of employing alternative means of analysis; we do not, so to speak, leave any credible information on the table" (p. 874). A mixed method approach allows for integration and adaptation enabling the researcher to transcend "methodological polarization", exploiting the strengths of qualitative and quantitative techniques and allowing for the triangulation of data and methods (Kraska & Neuman, 2011; Silverman, 2013; Morgan, 2014; Lanier & Briggs, 2014). The flexible nature of the assessment framework allows for the collection of primary data, rapid assessments relying mostly on secondary data sources, or a combination of both.

The present analysis employed the combined approach. In part a rapid assessment, it relied upon insights from the best pre-existing research and data sources that could be found, including empirical studies, government documents and reports (including those from publicly funded international organizations), NGOs and maritime industry experts. According to Paoli & Greenfield (n.d.), a rapid assessment relies on "pre-digested" material and implies "…less formality, less emphasis on data collection and, for most but not all purposes, a narrower aperture" (p. 11). This technique has already been tested by Paoli and Greenfield in a forthcoming chapter investigating the harms of coca cultivation and processing in Colombia. Although, as Paoli & Greenfield (n.d.) note, "…it is possible to glean relevant evidence from others' data and research, but we cannot expect their work to meet all our needs" (p. 55). As such, to compensate for this limitation, this study also included a document analysis of piracy incident reports. This was achieved through a quantitative content analysis of over 400 piracy incident reports occurring between 2009 and 2018. The data was extracted and coded into a bespoke dataset for descriptive statistical and geospatial analysis. Finally, and to a lesser extent, this study was supplemented by a limited empirical data collection (two semi-structured interviews with piracy experts).

3.4. Sampling Process and Data Collection

This section describes the various sampling and data collection strategies employed in this mixed methods research design. Justification is also provided to support these strategies and

techniques. Mixed methods studies often require multiple sampling techniques and, depending on the analytical approaches used (Kemper, Stringfield & Teddlie, 2003). Purposeful sampling strategies were used to identify and select the case, documents and interview informants. Strategies were selected for both practical and analytical reasons. With limited resources, purposeful sampling is typically a less costly and time-consuming option (Rai & Thapa, n.d., p. 10). Further, this strategy allows the researcher to use his or her own judgement in defining the sample based upon its ability to answer the research questions (Teddlie & Yu, 2007, p. 77). Purposeful sampling allows for flexibility by offering the researcher a wide inventory of techniques (Rai & Thapa, n.d., pp. 9-10). Combining sampling strategies is common in mixed methods research (Tashakkori & Teddlie, 2003, p. 280). Purposeful sampling strategies used to select the case and the primary and secondary data sources are described in the sub-sections below.

3.4.1. The Case: Nigerian-based Piracy

Contemporary Nigeria-based piracy was selected for study as an extreme or deviant case, one that is atypical and/or especially troublesome which can provide extensive and rich knowledge on the phenomenon due to its distinct manifestation and characteristics (Patton, 1990; Suri, 2011; Yin, 2018). Specifically, single cases "…are the stuff of much qualitative research and can be very vivid and illuminating…" (Miles, Huberman, & Saldaña, 2014, p. 26). Justification for the selection of Nigerian-based piracy as the case study was already extensively discussed in the problem statement section of this chapter. To avoid repetition, the societal and scientific relevance of Nigerian-based piracy will not be discussed further here.

3.4.2. The Documents: Piracy Incident Reports

After extensive research, a few sources of piracy incident reports were located including the IMB Piracy Reporting Centre (PRC), the IMO and the U.S. National Geospatial-Intelligence Agency (NGIA). The IMB PRC, a specialized sub-division of the International Chamber of Commerce (ICC), functions as the focal point for masters, owners and operators of vessels victimized by pirates anywhere in the world. Continuously staffed, the PRC receives incident reports, in a standardized format (see Appendix A for an example), from vessels in distress. In addition to providing aid and support for the victim vessel during the incident, they also record the incident specifics in a database. With this data they produce a number of analytical products for the shipping industry, law enforcement and other organizations. Annual reports containing incident narratives and data were made available for this research after personal

correspondence with the Deputy Director of the IMB (C. Mody, personal correspondence, 10 October, 2018).

A specialized regulatory agency of the UN, the IMO is responsible for establishing and monitoring compliance with maritime safety, security and environmental standards for participating member states. In this role, the IMO also maintains a database, the Global Integrated Shipping Information System (GISIS), which contains piracy incident data. Although much of this data is derived from the IMB, some is provided directly from member states. The reporting format and data fields are almost identical to that used by the IMB. Access to the GISIS database for this project was requested via the IMO website and, shortly thereafter, approved.

The NGIA, a U.S. Department of Defense combat support agency, maintains the Anti-shipping Activity Messages (ASAM) database (publicly available online) that includes incident reports on hostile acts against shipping, including piracy, world-wide. Reports can be submitted directly to the NGIA by mariners. Additionally, the NGIA draws information from a number of other sources including the IMB, press reports, wire services and maritime law enforcement (including coast guards and navies) (Twyman-Ghoshal & Pierce, 2014). Again, the reporting format and data fields are similar to those used by the IMB PRC and the IMO.

Although much of the prior research exploited only one of these data sources, to compensate for the high rate of underreporting, the decision was made to combine data from all three to get a more holistic picture of the phenomenon. Precedent for doing so can be found in a few other studies (e.g., Twyman-Ghoshal, 2012; Twyman-Ghoshal & Pierce, 2014). From these sources, the following criterion were used to select the cases (piracy incidents):

- All reported piracy incidents from 2009 through 2018 that occurred in the internal and territorial seas of Nigeria as well as those in international waters, including Nigeria's contiguous and exclusive economic zones; and
- Incidents occurring in the high seas that can be attributed to pirates of Nigerian origin or in locations where Nigeria was the closest littoral state

3.4.3. Interview Informants

To supplement this analysis, additional qualitative data was collected through two semi-structured interviews with piracy experts. To identify potential interview informants, expert sampling, in combination with convenience sampling was used. Expert sampling was utilized

because it allowed for the selection of individuals with specific and demonstrable expertise in Nigerian-based piracy. Further, within the harms assessment framework expert judgment is accepted as valid (Greenfield & Paoli, 2013, p. 874).

Convenience sampling was used for more pragmatic reasons. Conducting fieldwork in Nigeria was not feasible and beyond the scope of this project. However, a number of maritime security experts from organizations representing elements of the shipping industry were identified in Western Europe and contacted via email. They included representatives from the IMB, IMO, International Seafarers' Welfare and Assistance Network (ISWAN), Group for Research and Information on Peace and Security (GRIP) and the Royal Belgian Shipowners' Association (RBSA). This correspondence included a brief introduction, a description of the proposed research and a request for an interview. Two agreed to be interviewed. The first interview was conducted, in person, with the Head of Legal, Shipping Policy and Security at the RBSA, located in Antwerp. The second was conducted via Skype with the Deputy Director of the IMB.

It was decided to use semi-structured interviews for both. This strategy allows for flexibility in the interview process where "…the researcher has a general plan for the topic to be discussed but does not follow a fixed order of questions or word these questions in a specific way" (Packer, 2011, p. 43). Interview topics and questions were derived from the research questions. Prior to the scheduled interviews, sample interview questions and project objectives were sent to the informants. Interviews were recorded and as a back-up in case of technical issues, detailed notes were taken on a structured recording form. Interview summaries were generated and sent to respondents soon after the interviews for validation.

3.5. Data Analysis Methods

Within this mixed methods research design, a number of data analysis techniques were employed. First, quantitative content analysis was used to analyze the piracy incident reports. Defined as an analytical technique "…for the objective, systematic and quantitative description of the manifest content of communication" (Berelson, 1952 as cited in Bryman, 2016, p. 284), Quantitative content analysis is "…applicable to many different forms of unstructured information" (Bryman, 2016, p. 284). Before any analysis was carried out and consistent with the sampling parameters described above, a bespoke dataset was constructed by combining incident reports from all three data sources (IMB, IMO and NGIA). Although a number of piracy datasets exist, none fit the specific needs of this research project.

Since there was considerable overlap of incidents across the different data sources, a reconciliation and validation process devised by Twyman-Ghoshal and Pierce (2014, p. 654) was used to ensure duplicate incidents were not recorded in the dataset. Following this process, 406 distinct incidents of Nigerian-based piracy were identified that occurred between 2009 and 2018. Most sources provided pre-specified, structured data fields including incident date, time, victim vessel characteristics (e.g., name, type, flag state, gross tonnage, status at time of incident, etc.) and geographic coordinates. As such, these variables did not require further coding unless there were missing values. In such cases, every effort was made to resolve these deficiencies by locating data from other sources including publicly available vessel tracking websites (e.g., Marine Traffic and Vessel Finder) which provide databases containing detailed information about most commercial vessels.

In addition to the pre-specified data fields, all incident reports included short, unstructured, free text narratives. Although brief, the unstructured narratives were particularly useful as they contained a wealth of information regarding the *modus operandi* used by the perpetrators, the immediate consequences to the victims and incident severity. To extract this information, quantitative content analysis was employed. In this process, the specific codes and corresponding coding manual were first developed. In line with Bryman (2016), this process was wholly guided by the research questions and the conceptual and analytical frameworks and was designed to assist the researcher in completing crucial phases of the harm assessment framework (refer to Appendix B for the coding manual). Ultimately, the coding manual provided detailed instructions to guide the coding process.

Codes included, but were not limited to, attack type, attack success, damage to vessel, injuries, deaths, type of violence, weapons used, property stolen, kidnappings, ransom, approach method of pirates, number of vessels used, type of vessels used, corruption, oil theft, etc. All 406 incident report narratives were then analysed and manually coded into the dataset. Strict coding rules, as dictated in the coding manual, were adhered to. Basic descriptive statistics were generated using Excel (refer to Appendix C). This process proved to be quite fruitful, especially in constructing the business models, identifying harms and assessing their incidence and severity. Further, it facilitated the identification of outlier cases so that they could be further examined. The document analysis was further supplemented with insights from academic literature, reports and documents produced by government bodies (including those from publicly funded international organizations), NGO's, research groups and maritime industry

experts. Also, with the geographic data, maps were produced in QGIS to investigate spatial patterns.

The interview data was analysed using QUAGOL (Qualitative Analysis Guide Leuven), a technique devised, jointly, by researchers from the KU Leuven Centre of Health Services and Nursing Research and the Centre for Biomedical Ethics and Law (Dierckx de Casterlé, Gastmans, Bryon, and Denier, 2012). It was decided not to use computer software for a few reasons. First, the semi-structured interviews were only intended to supplement the content analysis of incident reports and the rapid assessment using secondary data sources found within the literature. Second, only a small number of interviews were conducted (two). Finally, the QUAGOL technique does not necessarily require the use of data analysis software which, according to Dierckx de Casterlé, et al. (2012), is often over-relied upon by qualitative researchers (p. 362). This analytical technique consists of two primary phases including thorough preparation and the actual coding process. Each phase consists of multiple steps (ibid., pp. 363-368).

Before starting the transcription process, as suggested by Bryman (2016), the interviews were reviewed in their entirety (p. 483). Next, shortly after the interviews were conducted, the recordings were transcribed and notes were typed. Although a tedious task, Bryman (2016) points out a few advantages to this strategy including enabling the researcher to begin identifying themes and patterns in the data and to make comparisons between respondents (p. 483). Then, to get "…a sense of the interview as a whole", the transcripts and notes were re-read and then a short summary report was created to "to articulate the essence of the interviewee's story in answer to the research question" (Dierckx de Casterlé, et al., 2012, p. 363). In line with Dierckx de Casterlé, et al. (2012), throughout this stage a constant comparison was used both within and across cases. This process allowed the researcher to identify and highlight themes and emerging concepts during this early stage. During the second stage, a list of concepts was created based upon the research questions and conceptual model.

Miles, Huberman and Saldaña (2014, pp. 275-322) posit a number of tactics that can be used to generate meaning, test and confirm findings. Several were used in this analysis. Since one component of this mixed methods study involved the use of descriptive statistics, counting was an obvious strategy. Building a logical chain of evidence was another tactic employed and dovetailed nicely with the assessment framework which is, in fact, a multi-step process where each phase of the process is built upon the previous one. To illustrate, creating business models

of Nigerian-based piracy required explaining all phases of the crime, in detail, including the participants involved at each stage. Clustering, noting process patterns and comparison, interconnected strategies for generating meaning from data, were also used. For example, in the content analysis, incidents were clustered by type based on Hastings' (2012) typology. Noting process patterns was useful in understanding the different manifestations of Nigerian-based piracy and, ultimately, in developing the various business models. Comparison of the type, incidence and severity of harms across business models and bearer categories was also a critical component of the harm assessment.

Since this analysis consisted of a mixed methods research design employing multiple methods and data sources, triangulation across methods and data sources was the primary strategy used to confirm findings. To exemplify this point, results from the content analysis were compared with findings from prior research and interview data. Further, highlighting outlier cases was an important component of this analysis. Although these cases occurred less frequently, the harms experienced by bearers was usually more severe.

3.6. Quality of Research

Different strategies were used to satisfy the criteria of validity and reliability. To maximize validity, two approaches were used – triangulation and deviant case analysis. Silverman (2013) defines triangulation as "…the attempt to get a 'true' fix on a situation by combining different ways of looking at it (method triangulation) or different findings (data triangulation)" (pp. 287-288). Since this research employed mixed methods research design, both method and data triangulation strategies were employed.

The second approach was deviant case analysis. Silverman (2013) argues that researchers, "…should not be satisfied by explanations which appear to explain nearly all the variance in their data" (p. 292). Within the harm assessment framework, deviant sub-cases were not excluded or weighted differently than those cases that fit the predominant pattern of Nigerian-based piracy incidents. Although the incidence of these cases was low, specific attention was paid to them as their severity ratings were typically higher or due to their unique characteristics (e.g., extreme violence, multiple deaths, the loss of a vessel, the same vessel targeted more than once in a short period of time, etc.).

In qualitative studies, reliability refers to the consistency or trustworthiness of the methods employed and the confirmability of the findings (Noble & Smith, 2015, p. 34). Explicit record-keeping was used to demonstrate, "…a clear decision trail and ensuring interpretations of data

are consistent and transparent" (Noble & Smith, 2015, p. 35). To do so, a research log was maintained which contains detailed notes on the entire research process. Notes were made concerning the literature reviewed, methodological processes, the data collection process, coding and interviews. This was done in a spreadsheet due to easy recall and search functions.

As the coding phase of the content analysis took place over the span of several weeks, intra-rater reliability was a concern. Bryman (2016, p. 298) argues that consistent coding practices must be used over time. To ensure consistency, the coding manual (see Appendix B) was critical. It provided explicit instructions on the coding process and was always available for consultation when a question arose. Also, at the start of the process, and also in line with Bryman (2016), the initial coding scheme was tested over several cases to confirm that the same codes were used each time. Although a rather time-consuming process, at the completion of the coding process, all 406 cases were reviewed to check for coding errors, missing values and any other inconsistencies.

Concerning the interviews, soon after their completion a detailed summary was sent, via email, to the informant to verify the accuracy of the information he or she provided. Further, detailed notes were taken during the interviews, in addition to the audio-recordings which not only increased the accuracy of the transcription process but also acted as a backup in case of recording problems.

3.7. Methodological Limitations

This study is certainly not without limitations. First, as with all research on contemporary piracy, underreporting is a significant concern. Many piracy studies, including this one, largely rely upon self-reported victimization data (e.g., Daxecker & Prins, 2012; Twyman-Ghoshal & Pierce, 2014). Conservative estimates of the "dark figure" of most crimes, those that go unreported, comprises a significant proportion of the total, approximately half according to some estimates (Fohring, 2014, pp. 4-5). Estimates of unreported piracy are even higher. Even using multiple sources of victimization data, as this study did, cannot account for a large portion of the unreported incidents.

Various factors prohibited a large-scale collection of primary data for this study. It was not feasible, due to limited resources, to conduct fieldwork in Nigeria. Further, attempts made to contact informants there went unanswered. As such, this project relied, almost completely, on secondary data sources and previous research. Although this is permitted within the rapid assessment framework, it is important to be transparent about the possible limitations of doing

so. Despite efforts made to identify potential biases and underlying purposes and perspectives of these sources, it was not possible to exclude all potential sources of bias. It is important to acknowledge that secondary data was obviously not originally collected for the specific purposes of this research nor to answer its specific research questions (Boslaugh, 2007, p. 4). Secondly, "…because the analyst did not participate in the planning and execution of the data collection process, he or she does not know exactly how it was done. More to the point, the analyst does not know how well it was done…" (Boslaugh, 2007, p. 5).

4. ANALYSIS – THE HARM ASSESSMENT (Phase I)

This chapter specifically addresses research question #1 and sub questions (*How is contemporary piracy manifested in Nigeria?*). First, a general overview of Nigerian-based piracy, including characteristics and trends, is provided. Second, it contains the first critical phase of the harm assessment—the construction of the business models (*modus operandi*) for each mode of contemporary Nigerian-based piracy. Data for this chapter was derived from existing research, the content analysis of piracy incident reports and the two semi-structured interviews.

4.1. An Overview of Nigerian-based Piracy

Prior to constructing the business models, some general background information on Nigeria and Nigerian-based piracy is first provided, including descriptive statistics and trends. Strategically positioned on the coast of West Africa, Nigeria borders the Gulf of Guinea to the south, with almost 853 kilometers of coastline, and shares land borders with Benin to the west, Cameroon to the east and Niger and Chad to the North (refer to Figure 4 below). With well over 200 million inhabitants, Nigeria is Africa's most populous country. Nigeria's economy is the largest in all of sub-Saharan Africa, with the energy sector dominating. Oil and gas rich, with reserves estimated at 37.45 billion barrels, Nigeria is the world's sixth largest exporter. Much of this activity is centered in the Niger River Delta in southeastern Nigeria. According to the Central Intelligence Agency (CIA), Nigeria exports 2.096 million barrels of crude oil per day and 27.21 billion cubic meters of natural gas per year (2018). As such, petroleum and petroleum products are Nigeria's main export commodity (95% of all export commodities) and 80% of budgetary revenues (UNODC, 2013 and CIA, 2018).

Despite this immense source of wealth, "Nigeria remains one of the poorest countries in the world, ranking 156 out of 187 countries in terms of human development" (UNODC, 2013, p. 45). Notwithstanding the centrality of the oil and gas production to the Nigerian economy, this sector has been shrinking each year since 2012. This has resulted in fewer investments in the energy sector. This is largely due to regulatory issues and security concerns, including piracy (CIA, 2018). Similarly, a UNODC (2013) threat assessment of transnational organized crime in West Africa identified piracy as a significant threat to the oil and gas sector in Nigeria and throughout the region (p. 45).

Figure 4: Map of Nigeria

(Source: Central Intelligence Agency)

The marked decrease in global piracy incidents starting around 2012 was previously discussed. Unfortunately, this trend did not hold true for Nigeria and the wider Gulf of Guinea region. In fact, the opposite seems to be the case with the frequency of incidents increasing beginning around 2013. The primary analysis of piracy incident reports has identified a total of 406 distinct piracy incidents during the ten-year period between 2009 and 2018. Included in this figure, and consistent with the IMB definition of piracy, were both attempts and committed attacks (actual boardings) (refer to Figure 5 below). Of note, the past three years have seen the highest number of incidents with 57 in 2016, 58 in 2017 and 61 in 2018. The majority of incidents occurring on the Gulf of Guinea can be attributed to Nigerian-based pirates (Whitman & Saurez, 2012; Kamal-Deen, 2015; Lucia, 2015).

Figure 5: Nigerian-based Piracy Incidents (2009 – 2018)
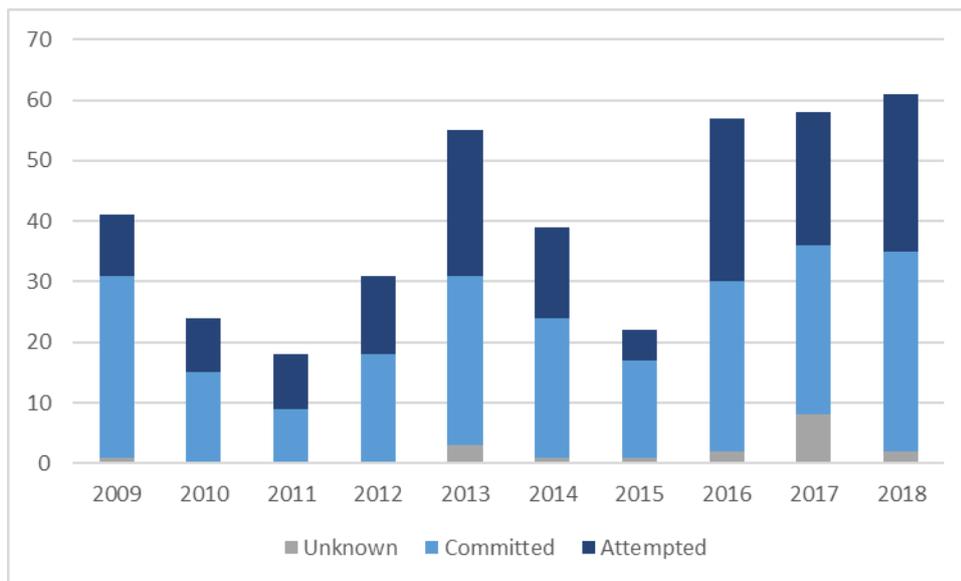
(Source: Data compiled from IMB, IMO and NGIA incident reports)

Of the 406 incidents, approximately 56% (*n*=229) resulted in successful boardings (committed attacks), 39% (*n*=159) were attempts and the remainder were undetermined. Incidents cover the entire spectrum of those in Hastings' piracy typology. Of the 229 incidents resulting in vessel boardings, 111 were classified as robberies, 80 kidnappings for ransom and 5 as cargo/vessel seizures. In the remainder, the primary objective of the pirates was indeterminate. Vessels flagged in 42 different states were victimized. The majority of those were flagged in five states: Liberia, the Marshall Islands, Panama, Singapore and Nigeria. However, there is no evidence to indicate that pirates target vessels based upon their flag-state. Known as a "flag of convenience", the flag a vessel carries, in many cases, is not the nationality of the shipowners. As such it is highly unlikely the perpetrators actually know the true nationality of the target vessels. From a spatial perspective, these incidents have occurred in inland waters, port areas, territorial seas (>12 miles from shore), Nigeria's EEZ (12 to 200 miles from shore) and in the high seas (<200 miles from shore). Only two incidents occurred on the high seas. The farthest one occurring 220 nautical miles southwest of Bayelsa State (Incident #394). Most were clustered in and around the Delta States and Lagos Port, including the secure anchorage (refer to Figure 6 below).

During the past ten years, incidents have resulted in 46 deaths, 125 injuries and 335 persons kidnapped. Due to high rates of partial and underreporting, these figures are likely conservative. Also observed was a corresponding increase in kidnappings. These findings are consistent with

Figure 6: Spatial Distributions—Nigerian-based Piracy Incidents (2009-2018)
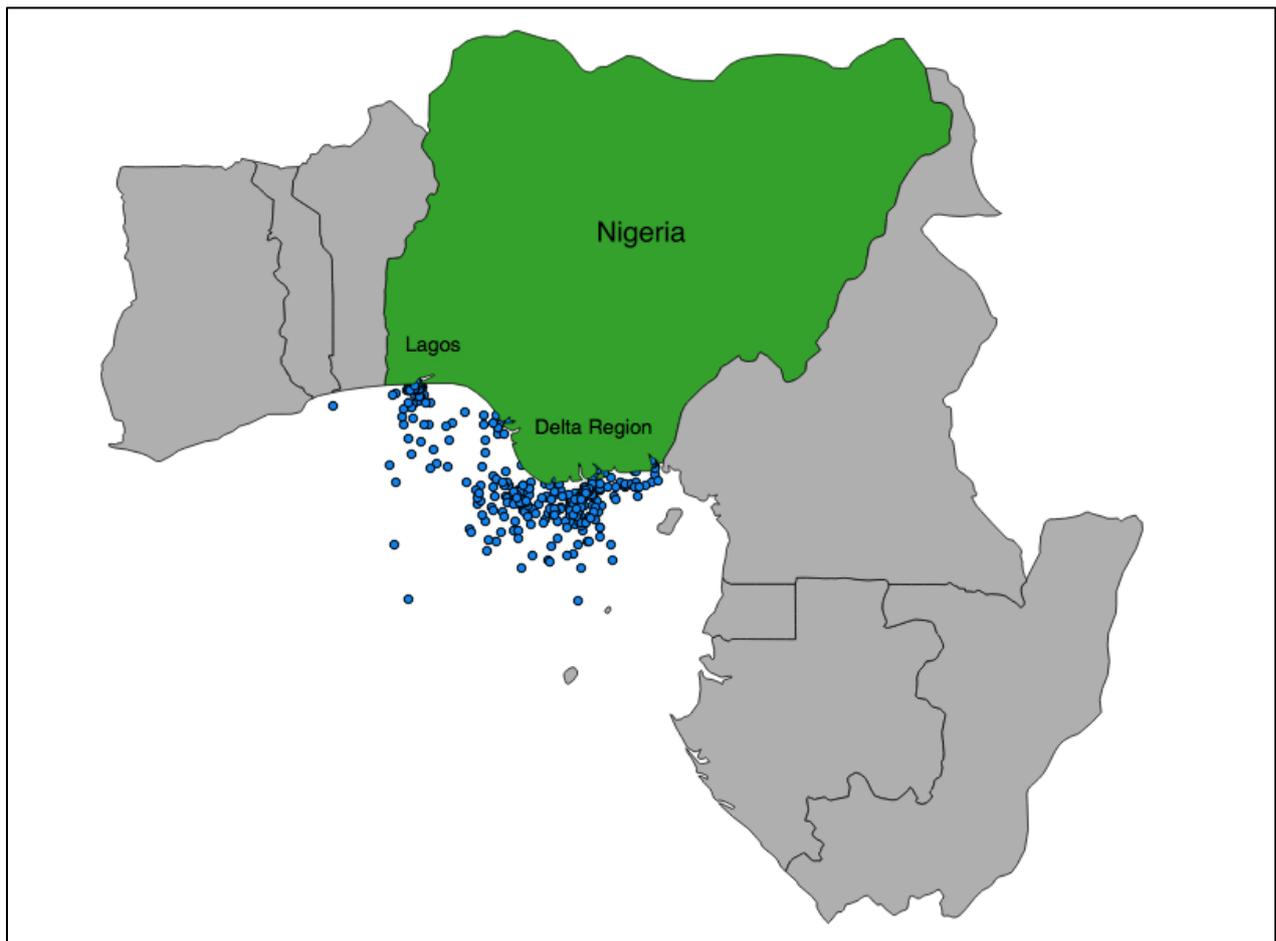
(Source: created by author in QGIS)

much of the existing piracy literature which points to an escalation in incident frequency, violence and kidnappings in the Gulf of Guinea and particularly in the waters off of Nigeria (see e.g., Fiorelli, 2014; Kamal-Deen, 2015; IMB, 2018).

4.2. Construction of a Business Model (*Modus Operandi)*

Consistent with Greenfield and Paoli (2013), in the first analytical phase of the harm assessment, business models were constructed for the main modes of Nigerian-piracy that were identified and include general characteristics, the key operational phases, participants involved and primary, accompanying and enabled activities. These modes, based on Hastings' (2012) offense-based typology, include kidnapping for ransom, robberies and ship/cargo seizures. In addition, attempted boardings and unspecified attacks (incidents where the perpetrators' objectives were not discernible) were treated as a fourth mode since they comprised nearly half of all of the recorded incidents between 2009 and 2018.

It was not possible to classify attempted boardings or unspecified attacks into Hastings'
taxonomy since it was not possible to ascertain the primary objectives of the perpetrators
(Hastings, 2012). It was decided to include these incidents as they still had the potential to
produce harms. The data validated this decision. Although perpetrators failed to gain access to
the vessels, or, in the case of unspecified attacks, limited information prevented specification,
bearers still accrued harms. As some incidents involved more than one mode, consistent with
Hastings (2012), the decision was made to classify incidents based upon the apparent primary
objective of the perpetrators.

Primary and secondary data sources indicated that all four modes occur, with some regularity,
in the waters off of Nigeria. Although there are some overlapping characteristics of all modes,
there are also substantial differences, thus the need to construct separate business models for
each.

4.2.1. Kidnapping for Ransom

Kidnappings for ransom comprised 19.70% (*n*=80) of the 406 incidents and 34.93% of
successful boardings. As with all modes of piracy, the primary activity is the unlawful attempt
or actual boarding of a vessel. Several accompanying activities were identified including
corruption, violence, robbery, property damage and money laundering. Receiving of stolen
goods was identified as an enabled activity.

Participants

Prior to discussing the key operational phases, it is important to provide some information on
the composition of the pirate groups actively involved in kidnapping for ransom. Murphy
(2013) suggests that those participating in kidnappings for ransom are generally well organized
due to the complex nature of these operations (p. 433). Such operations require intelligence,
heavy weaponry, long-term commitment, support networks onshore and money laundering,
"…indicating group cohesion, planning, financing, and often official corruption" (UNODC,
2013, pp. 49-50).

These organizations can be large quite large, often between 40 and 60 persons (Kamal-Deen,
2015 and Terra Firma Risk Management [TFRM], 2016). As noted in a report produced by
TFRM (2016, p. 6), group leaders vary in their involvement in day-to-day activities with some
taking a more active role in the kidnappings, captivity and negotiation while others remain in
the background. A number of positions are found within these organizations. Guards are

required onshore to oversee captives and protect enclaves from attack from other pirate groups and government security forces. Facilitators are needed to procure supplies and for ransom negotiations. Gunmen are necessary to conduct the actual attacks and abductions. Skilled seamen, often former fishermen are used to pilot the pirate vessels (Longworth, 2018, p. 4). Support personnel, including cooks and outboard engine mechanics are also often employed (Rinkel, 2015, p. 9).

Incident report data and prior research suggest that these groups are well-armed, often with automatic and semi-automatic firearms, knives, rocket-propelled grenades (RPGs), explosives and blunt instruments. Prior research confirms the armament of these groups (Kamal-Deen, 2015; TFRM, 2016). In almost all cases, they operate out of enclaves located in the swamps and waterways of the Niger River Delta (TFRM, 2016).

Key Operational Phases

Kidnappings for ransom unfold in three distinct phases: pre-attack, attack and post-attack. The pre-attack phase, the process of selecting a suitable vessel to attack, can be described as opportunistic. Pirates have targeted a variety of vessel types, running the gamut from tankers, bulk carriers, container ships, general cargo ships, tugs, fishing vessels, passenger vessels, FSOs (floating, storage and offloading vessels) and supply vessels. For the purposes of kidnapping for ransom, incident data shows that pirates target supply vessels (n=21), tankers (n=17) and general cargo vessels (n=13) more often than other vessel types. Murphy (2013) notes that offshore supply vessels are particularly attractive targets because of their slow speed and low freeboard (p. 433).

Pirates most often targeted vessels underway (n=49) however, a few involved anchored and drifting vessels. Concerning incident location, the vast majority (68.75%, n=55) were perpetrated in Nigeria's EEZ, between 12 and 200 nautical miles offshore. A further 20.51% (n=16) took place in Nigeria's territorial seas and 11.39% (n=9) in Nigeria's internal waterways. The vast majority occurred in the waters south of the Delta States (refer to Appendix D, Figure 3). Of note, none were perpetrated in port areas nor on the high seas, beyond 200 nautical miles offshore.

Once a suitable target has been selected, pirates proceed to the attack phase. Data indicates that attacks occur throughout the day, further suggesting the opportunistic nature of these crimes. However, this analysis shows that attacks are more likely to occur at night or in the early morning hours suggesting pirates use darkness as cover to conceal their operations and to give

them a strategic advantage. Prior research, focusing on regional and international piracy manifestations, supports these findings (Nordland, 2010; Twyman-Ghoshal, 2014; Kamal-Deen, 2015; Shane & Magnuson, 2016).

"Mother ships", often trawlers or other larger vessels (in some cases, previously hijacked vessels will be used in this capacity), increase operational range and are used as platforms to launch attacks (Murphy, 2013; Kamal-Deen, 2015; Longworth, 2018). Within the incident report data, only four cases provided indications that "mother ships" were used. This figure is likely low, however, as the reporting parties, in many cases, might not have been aware that a "mother vessel" was used unless they were able to physically see it or notice it on radar. In areas with an abundance of ship traffic, identifying a "mother vessel" amongst the other vessels in the area might not be possible.

Although pirate groups engaged in kidnapping for ransom can be large, incident report data suggests that the actual boarding parties are comprised of smaller sub-groups numbering between five and ten. Data suggests that boarding parties typically approach the target vessel from a fast boat, usually a skiff or speedboat that is powered with one or more outboard engines. Such vessels can easily overtake the slower-moving target vessels. In a small number of cases (approximately 13%), more than one approach vessel was used during the attack. In one case, four were used. This is consistent with prior research (Kamal-Deen, 2015; Rinkel, 2015; TFRM, 2016). According to the compiled incident report data, often, the pirates onboard the speedboats will fire upon the target vessel with automatic weapons in an attempt to intimidate the crew, sometimes inflicting damage to the vessel. In one case (Incident #6) involving the Panamanian-flagged tanker *Meredith*, as the pirates approached, they threw sticks of dynamite at the ship's hull, inflicting massive damage.

Once alongside the target vessel, pirates then attempt the boarding. To do so, a number of tactics are employed. If the target vessel's freeboard is low enough and the seas calm, it may be possible for the boarding party to simply climb over the rail onto the deck of the target ship. Usually this is not the case and as the incident data shows, the pirates will use ladders, poles and ropes with hooks to climb onto the target vessel. Once onboard, they quickly attempt to overpower the crew and gain access to the bridge, often with violence (Kamal-Deen, 2015). Speaking to the violence, in 21 of kidnapping for ransom incidents (26.25%), the perpetrators discharged their firearms. They will often fire at the bridge and superstructure to gain compliance (Incident report data; Murphy, 2013; TFRM, 2016). The threat of violence is ever-

present as pirates are well armed. Further, data suggests violence and, specifically, physical assault are commonplace. This is further supported within pre-existing research (Murphy, 2013 and Kamal-Deen, 2015). Data shows that violence has resulted in numerous injuries to crewmembers and even deaths in a few cases (also supported by Kamal-Deen, 2015).

Once the pirates gain control of the vessel, often they will disable or damage communications equipment (VHF radios, satellite phones, AIS, etc.). This practice was documented in the attacks of the *Esther C*, *Leon Davis*, *Bourbon Liberty* and the *MV Glarus* (Incident #'s 120, 236, 241 and 398). Incident report data also suggests that, while onboard and prior to selecting kidnap victims, the perpetrators will again exhibit their opportunistic nature by relieving the vessel and crew of valuables including cash, mobile phones and ship's stores and equipment. This opportunistic tactic was also noted in a report produced by TFRM (2016). In the attacks on the *Esther C* (#120), *PSV Mariner* (#177), an unidentified vessel (#236) and the *FV Lurunyuanyu* (#376), the pirates hijacked the vessel for a period of time prior to departing with the kidnap victims. In two of these cases the pirates utilized the victim vessel as a "mother ship" to attack other vessels (Incident #'s 120 and 177).

Often, prior to and during the boarding, the victim vessel master will order non-essential crew (and in some cases, the entire crew) to the ship's "citadel", typically a secure and fortified "safe" room. This is a common best management practice (BMP) developed by the shipping industry to protect crew during attacks. To gain access to these crewmembers held up in the "citadel", the pirates will often use threats and brute force, often times discharging their firearms. Once the victim vessel's crew have been rounded up, a selection process begins to decide whom to kidnapped.

In this process, the pirates are essentially assessing the "value" of each crewmember. In essence, higher ransoms can be demanded for certain "categories" of crew. A report produced by TFRM (2016) suggest that pirates prefer non-African hostages and "…believe that the whiter the skin, the higher the ransom they will gain" (p. 7). The incident report data further supports this. More broadly speaking, the data indicates that any non-Nigerian crew, regardless of skin colour, are more likely to be targeted. Further, ranking officers are also seen as higher value targets and include masters, chief officers and engineers. This does not preclude the possibility that Nigerian seafarers (or other Africans) will be taken. However, the ransoms typically demanded for their release are much lower than for non-Africans (TFRM, 2016, p.

7). It is evident from the incident report data and pre-existing research that although certain seafarers have a higher likelihood of being kidnapped, all seafarers are generally at risk.

According to the data, anywhere from one to 12 persons are taken from a target vessel but the majority involve five or less victims. Although rare, within the inland and coastal waterways of the Delta States, a few particularly disturbing cases involved the abduction of women and children from passenger ferries. In one incident (#13), a passenger vessel was attacked while underway from Bonny Island. Five women were kidnapped and brutally raped. In another (Incident # 199), a passenger vessel was attacked near Ogbia resulting in the kidnapping of two women and children.

After the victims are removed from the target vessel, the post-attack phase begins. Although data concerning this phase is rather limited in the incident reports and in the academic literature, some information can be gleaned from reports produced by maritime intelligence firms. Cyrus Mody, the Deputy Director of the IMB indicated that there is a "veil of secrecy" concerning this clandestine phase (personal communication, April, 12, 2019). In most cases, regardless of where the target vessel was attacked, the kidnap victims are transferred to enclaves located in the remote swamps and waterways in the Delta (TFRM, 2016; C. Mody, personal communication, April 12, 2019). These are often "primitive" outposts and the conditions under which the captives are held are poor.

Although the threat of violence is ever-present during the captivity phase, its actual use is limited. According to Mody, unlike in Somalia, in Nigeria the captives are usually not physically abused (personal communication, April 12, 2019). The pirates seem to recognize the "value" of the captives and don't want to unnecessarily risk harming them. A report produced by TFRM (2016) indicates that, "Torture or deliberate, prolonged physical maltreatment is rare, although most kidnap victims will suffer the occasional slap or jab with a rifle butt" (p. 7). Poor hygienic conditions and the presence of mosquitos and other disease-carrying pests can lead to a host of gastrointestinal and vector-borne illnesses including dysentery and malaria. Food is also in short supply and meals very basic (TFRM, 2016, p. 7).

The duration of captivity varies and victims are usually held for a period of three to 12 weeks while negotiations take place (TFRM, 2016; C. Mody, personal communication, April 12, 2019). Little is publicly know concerning actual ransom negotiations. Specialist maritime law firms often act as intermediaries between shipowners and those representing the pirate groups to facilitate the exchange (C. Mody, personal communication, April 12, 2019). Similarly,

information concerning actual ransom amounts is also limited. Mody *(ibid.)* noted that ransoms requested for captives in Nigeria (usually a few hundred thousand dollars) are often significantly less than those in Somalia where ransoms in the millions of dollars were commonplace. Incident report data provided no information concerning ransom payments nor money laundering of foreign currency however, prior research indicates that money laundering is a necessary component to, "…allow the ransom to be digested" (UNODC, 2013, p. 50).

4.2.2. Ship/Cargo Seizures

Ship and cargo seizures, also complex crimes, are those in which a vessel and/or cargo is taken and then sold for profit (Hastings, 2012, p. 691). As noted in a UNODC (2013) threat assessment, these crimes, like kidnapping for ransom, are "logistically complex" activities "…indicating group cohesion, planning, financing, and often official corruption" (p. 50). Such crimes require pirates' access to external markets to sell stolen vessels and/or cargos (Hastings, 2012, p. 698). They may require even more sophistication than kidnappings for ransom since they require, "…if anything, greater access to economic infrastructure…which is perhaps why ship/cargo seizures globally tend to take place in locations with at least minimally effective formal institutions" (Hastings & Phillips, 2015, p. 573).

After analyzing the incident report data, only five cases (less than 2% of all incidents) of cargo seizures were located. Spatial data does not reveal any distinct patterns (refer to Appendix D, Figure 2). This is consistent with findings from existing research suggesting that, despite "prevailing notions" that this form of piracy is common in the Gulf of Guinea, data indicates otherwise (Otto, 2016, p. 2). No incidents involving vessel seizures were identified. Although numerous cases involved the hijacking of vessels, it appears as though the pirates' intentions were not to permanently deprive the owners of the vessels and later disguise and sell them on the "black market". Although quite common in Indonesian waters, vessel seizures in other parts of the world, including Nigeria, are quite rare by comparison (Pérouse de Montclos, 2012; Twyman-Ghoshal, 2014). With this being said, it is possible that ship seizures have occurred and are part of the "unreported" figures. Further, considering the adaptive and opportunistic nature of Nigeria's pirate groups, it is not out of the question that this mode of piracy could be added to their repertoire.

As with kidnapping for ransom, the primary activity of ship/cargo seizures is the unlawful attempt or actual boarding of a vessel. Several accompanying activities were identified and

include: corruption, violence, robbery, property damage and money laundering. Receiving and reselling stolen goods (oil) and illegal refining were identified as enabled activities.

Participants

As there were few identified incidents involving oil cargo seizures in the dataset, this section draws heavily on pre-existing research. Pirate groups involved in oil cargo seizures are well organized and are similar in structure to those involved in kidnapping for ransom (Murphy, 2013, p. 432). They are also heavily armed. However, Hastings & Phillips (2015) argue that pirate groups participating in these operations play more of a secondary role, functioning "…as the muscle for financiers and brokers rather than a principal in its own right" (p. 573). The broader participants involved in these crimes are quite diverse, "…including corrupt officials, the armed groups they sponsor, corrupt elements of the military, corrupt oil industry officials, militants, and professional thieves" (UNODC, 2013, p. 50). Some evidence even suggests involvement of East European and Asian organized criminal networks in these crimes (Osinowo, 2015, p. 3). These transnational actors often play a role in "…financing, transporting and laundering money associated with oil crime" (Lucia, 2015, p. 14). Evident in the literature, corruption appears to be a key component of successful oil cargo seizure operations.

Key Operational Phases

As with kidnappings for ransom, ship/cargo seizures usually unfold in three distinct phases: pre-attack, attack and post-attack. Much planning is required prior to selecting a target vessel. Corruption is central to this phase. Corrupt government officials and shipping and oil industry insiders often forward target vessel routes, locations and cargo information to the pirate groups (Hastings & Phillips, 2015, p. 573). Elle De Soomer, Head of Legal Affairs, Shipping Policy and Security at the Royal Belgium Shipowners' Association, confirmed this information and noted that the pirates already know the cargos and locations of vessels prior to initiating the attack (personal communication, April 4, 2019). Security forces are often paid off to either look the other way or to provide security for the pirates during attack operations (Hastings & Phillips, 2015, p. 574). In order to transfer and transport the stolen oil, the pirates require access to a tanker (Kamal-Deen, 2016). The tankers, often local legally owned vessels, are used as "mother ships" during the attacks and are then used to offload and transport the oil to brokers (Hastings & Phillips, 2015, pp. 574-575).

Concerning target selection, all of the five cargo seizure incidents involved large-scale thefts of oil from small tankers ranging in size from 2,141 DWT to 35,070 DWT (deadweight

tonnage). Smaller tankers are targeted because they have lower freeboard and as such, are easier to board than the larger tankers (E. De Soomer, personal communication, April 4, 2019). De Soomer *(ibid.)* also observed that tankers are often targeted during ship to shore operations (STS) where they are particularly vulnerable. Since larger tankers require more draft, they often cannot enter ports located in shallower waters. As such, this process typically occurs offshore. The larger tanker will anchor and the smaller tanker will come along side. Oil is then transferred from on tanker to another so the product can be ferried to/from the onshore facility.

The actual approach and boarding tactics used during these crimes is similar to that used by pirates engaging in kidnap for ransom. To avoid repetition, these will not be mentioned again. Violence is also common-place and is used to gain control of the vessel. As noted in a UNODC (2013) threat assessment, "The crew of the target vessel, rather than being the object of the attack, is simply an impediment, to be offloaded as quickly as possible. As a result, many of these attacks involve violence" (p. 50). Once the pirates have gained control of the target vessel and its crew, the pirates' tanker will come alongside and the oil transfer will commence. Alternatively, the hijacked tanker will proceed to a predetermined location for offloading. Opportunistically, prior to departing the target vessel, the pirates may rob the crew and vessel as was demonstrated in the few cases identified in the dataset.

During the post-attack phase, pirates obtain information from the broker on where to take the seized oil to be offloaded at shore-based receiving facilities. They also provide security during this process (Hastings & Phillips, 2015, p. 575). According to Hastings and Phillips (2015), "After the operation, the ship/cargo seizure piracy networks must also convert the loot into profits, which implies the existence of a local or international market that is sufficiently large to absorb the quantity of cargo or oil stolen" (p. 575). They further note that the pirate groups typically do not have these connections and are paid a flat fee for services rendered during the operations. There are indications that some of the stolen oil ends up being processed in illegal refineries, sometimes referred to as "artisanal refineries", mostly in the Delta States (Obenade & Amangabara, 2014; Chatham House, 2013; Balogun, 2018). This refining process has led to devastating consequences for the environment (Chatham House, 2013).

4.2.3. Robberies

Hastings (2012) defines robbery as an incident in which, "the pirates' main objective appears to be stealing money, valuables, ship parts, tools, or other non-cargo items from the ship" (p. 691). In this analysis, robberies were identified as the most frequent type of piracy occurring

in the waters off Nigeria which is consistent with findings from pre-existing research (Hastings, 2012; Onuoha, 2012; UNODC, 2013 and Twyman-Ghoshal & Pierce, 2014). According to the compiled incident data, 111 robberies occurred during the analysis period. This figure comprises 48.47% of all boardings and over a quarter of total incidents.

Robbery incidents can be broadly sub-categorized based on their level of organization. Opportunistic robberies, typically less organized, usually take place in and around port areas, mainly Lagos, including the secure anchorage. Appendix D (Figure 1) reveals a distinct cluster in this area. However, more sophisticated organized robberies usually take place further offshore and are perpetrated by coordinated Delta pirate groups (Nordland, 2010; Jacobsen & Nordby, 2015). Appendix D (Figure 1) shows this incident cluster mainly south and southwest of the Delta States. As with all of the previous modes of piracy, the primary activity of robbery is the unlawful attempt or actual boarding of a vessel. Several accompanying activities were identified and include: corruption, violence, property damage and corruption. Receiving of stolen property was identified as an enabled activity.

Participants

Data suggests that participants involved in opportunistic robberies, typically in and around port areas (mostly Lagos), are less sophisticated and organized than those involved in robberies at sea. Typically, they are perpetrated by smaller groups (usually four or less), and even individuals in some cases. In approximately half of the cases the perpetrators were armed, mostly with knives. Although capable of using violence, the incident report data suggested that these perpetrators were more likely to flee, often times jumping overboard, when confronted or noticed by crew. Pre-exiting research also supports this (Nordland, 2010, p. 196).

Data suggests that armed robberies occurring farther out to sea, are typically better organized although those occurring in and off Lagos Port, usually in the secure anchorage area, appear to be less organized than those perpetrated further offshore and near the Delta States. Nordland (2010) discusses the differences in the following:

> There are also significant differences in the nature of acts of piracy in the Lagos area and the Niger Delta. Whereas Lagos incidents clearly are executed by small-time bandits motivated purely by financial gain…maritime raids in the delta often have more determined, political, and violent dimensions. Attacks in the Niger Delta are also better coordinated… (pp. 196-197)

Groups can be quite large, numbering upwards of 40 perpetrators (Kamal-Deen, 2015, p. 12). Incident report data is consistent with Nordland's (2010) appraisal of the pirates' armaments including automatic weapons, RPGs, knives, blunt instruments and even axes. Although both

manifestations can be classified as opportunistic, prior research and incident report data show differences in organization and capabilities.

Key Operational Phases

Robberies in ports and further offshore share the same key operational phases: pre-attack, attack and post-attack. Concerning target selection, both manifestations seem to be opportunistic. Data suggests that the pirates attack vessels in their routine areas of operation or where vessels frequently transit or are laid up.

Robberies in port areas predominately took place in Lagos, specifically at the Apapa, Folawiyo, Capital, Ibru, Alpha and Tin Can Island jetties. The Apapa Terminal was most often targeted, likely because it is the largest in Lagos. A few others occurred in Port Harcourt, Koko Port and Onne. According to the incident data and existing research, incidents typically occurred at night (Nordland, 2010, p. 197). Berthed or anchored vessels were usually targeted. In most cases, the robbers approached the target vessels by boat, usually a small speedboat or skiff. A secondary means of approach was via land where the robbers boarded berthed vessels from a dock or jetty. To access the vessel, robbers will employ many of the same tactics mentioned in the sections above (e.g., ladders, poles, ropes) or will climb the anchor chain or mooring lines. Once onboard, the robbers, although often armed with knives, will usually try to proceed undetected. If confronted by a crewmember, the robbers, in most cases will flee, sometimes even jumping overboard. This does not preclude the threat or use of violence, however, incident report data identified only one case where a crewman was injured. Incident data and previous research suggests that port robbers steal what is readily available, including ship equipment and stores, electronics and parts (Jacobsen & Nordby, 2015, p. 23). Sometime crewmember's personal effects are also taken.

The more sophisticated robberies occurring further offshore and often perpetrated by groups from the Delta States unfold somewhat differently. Although some, by comparison, are relatively unorganized (mostly those occurring offshore from Lagos in the secure anchorage area), many are, and involve different tactics, resources and levels of violence. The data shows that these are more frequent than port robberies. They occur mostly in territorial waters and the EEZ with a few perpetrated in the inland riverine waterways of the Niger Delta. As with port robberies, these occur mostly during the night and early morning hours. Data indicates that all vessel types and sizes are targeted. Incident data and prior research confer vessels are

approached by one or more speedboats or skiffs, sometimes launched from and assisted by "mother ships" (Kamal-Deen, 2015, p. 12).

Although these groups can be quite large, data suggests that boarding parties usually number less than ten. They access the target vessels using the same tactics as those employed by those engaged in kidnap for ransom and cargo seizures. Similarly, data reveals that they will often fire upon the vessel upon approach and, once on board, will quickly seize control of the vessel, often through threats and actual violence. As such, violence is quite common with weapons discharges occurring in almost one third of all cases. Injuries occurred in 27 incidents (85 persons injured) and five deaths were identified in 3 cases. Target vessel damage occurred in almost 40% of these incidents. In line with the literature, incident data showed that crewmember personal effects, ship's equipment, stores, cash and even small amounts of cargo are taken as spoils (Onuoha, 2012; Osinowo, 2015). These items are "…converted easily into cash…" according to Hastings (2012, p. 698).

4.2.4. Attempted Boardings and Unspecified Attacks

Attempted boardings are defined simply as those where the perpetrators tried to unlawfully gain access to the vessel and failed. Unspecified attacks, as previously mentioned, were those incidents where the perpetrators' primary purpose could not be determined due to limited information. In combination, attempts and unspecified attacks comprised near half of all incidents in the dataset. Their frequency, in combination with their demonstrated potential to manifest harms, weighed heavily in the decision to include them in this analysis. Attempts and unspecified attacks, as with all other modes, occurred whilst vessels were anchored, berthed, steaming or drifting and in all geographic areas. These incidents demonstrated all of the operational phases used in the other modes described above. Similarly, the primary activity involved was the attempted or actual boarding. Since these incidents contained minimal information or were merely attempts, fewer accompanying activities were identified, including, assault, threats of violence and property damage. As such, no enabled activities were identified.

Attempts are characterized by two phases: pre-attack and attack. Further, in addition to pre-attack and attack phases, some unspecified attacks could potentially have involved a post-attack phase. To avoid repetition, incident locations, target selection, approach and boarding strategies will not be discussed further as, in all likelihood, had the attempts resulted in boardings they would have ultimately been classified into one of the modes already discussed above. Similarly, had further information been available concerning the unspecified attacks, a more detailed

categorization might have been possible. The same applies to participants in these attacks. Spatial distributions (refer to Appendix D, Figure 4) are consistent with those of all piracy incidents (see Figure 6 above) revealing clusters in and around Lagos as well as offshore from the Delta States. The consequences of these incidents, however, deserve attention. It should be noted that in the unspecified attacks, weapons (predominately firearms) and the use of violence was commonplace with firearms being discharged in almost a third of the cases. Although injuries were few, the exchange of gunfire between pirates, onboard security and the Nigerian Navy resulted in 16 deaths including one seafarer and 15 pirates (Incident #s 164, 191 and 281). These attacks resulted in vessel damage in 21% of cases.

Victim vessels were fired upon by pirates in 52.83% (n=84) of attempted incidents. Further, the perpetrators were armed in 66.04% (n=105) of attempts. Firearms were the weapon of choice although RPGs, explosives, knives and blunt instruments were present in a few. Victim vessels sustained damage in 31 cases, mostly from being fired upon. Attacks resulted in injuries in 7 cases (twelve persons injured). A further four cases resulted in the deaths of 16 persons (Incident #s 110, 117, 118 and 276). Included in this figure were three crewmembers, three onboard security and naval escort personnel and 10 pirates.

5. ANALYSIS – THE HARM ASSESSMENT (Phase II)

The second phase of this analysis addresses Research Question #2 (*What are the harms associated with contemporary piracy in Nigeria?*) and sub-questions. First, harms are identified, sorted and classified. Second, the incidence and severity of the identified harms are evaluated. Third, the harms are prioritized based on the incidence and severity ratings. In the final section, causality is investigated.

5.1. Identifying Harms and Bearers

This section addresses Research Question #2 (and sub-questions RQ2$_a$ and RQ2$_b$). In this phase of the assessment, consistent with Paoli, et al. (2013, p. 422), for each of the three main operational phases of piracy (pre-attack, attack and post-attack) and accompanying activities (violence, corruption, property deprivation, property damage and money laundering) and enabled activities (receiving of stolen goods and illicit artisanal refining), the potential harms, harm bearers and affected interest dimensions were identified (refer to Appendix E). This process was largely dependent upon the business modelling exercise described in the previous chapter.

Concerning possible harms, it is important to note "that a harm is listed in this table does not imply that it occurs to any great extent, only that it is relevant or plausible given the business model" (Paoli, et al., 2015, p. 282). In general, harms to perpetrators were included with the exception of material harms accrued by criminals and/or criminal organizations resulting from the actions of other such individuals or groups (Greenfield & Paoli, 2013, p. 877). The bearers, plausible harms and interest dimensions affected for each bearer class are discussed below. Due to scope limitations, it was not feasible to discuss every possible scenario or plausible harm. As such, one illustrative example was provided for each bearer class.

5.1.1. Individuals

From the business modelling exercise of Nigerian-based piracy, the primary individual harm bearers identified were: seafarers (merchant mariners and fishermen), civilians (vessel/ferry passengers), victim relations, perpetrators (including pirates, enclave guards and personnel) and security personnel (contract security guards and military/police). Evidence suggests that harms to individual bearers are possible during all three operational phases with most likely occurring in the attack and post-attack phases. Concerning accompanying activities,

individuals can plausibly accrue harms from violence (actual and threat of), property deprivation, and property damage.

To illustrate these harms, a typical kidnapping for ransom incident is described. The only plausible harm accruing during the pre-attack phase would be anxiety felt by those onboard vessels traversing piracy-prone areas and that experienced by their family members. During the attack phase, seafarers (and others onboard including passengers and security guards) could suffer harms to their functional integrity, both physical and psychological. During the boarding process, harms might accrue from gunfire, the use of explosives, RPGs and other weapons, threats and other forms of physical violence. Harms include psychological trauma and anxiety, physical injury and at the extreme, death. The same harms could be experienced by responding law enforcement or military personnel. Similarly, during the attack phase, perpetrators might experience harms to their functional integrity due to exchanges of gunfire with onboard security. Further, physical injuries could result from falls during the risky boarding process.

During the post-attack phase, kidnapped seafarers (and in a few cases, kidnapped passengers) might experience physical and psychological trauma during their period of captivity resulting from physical violence (threats, beatings and rape) and the unsanitary living conditions. Further, they may experience intense anxiety from not being able to contact their families or knowing if they will be adequately provided for in their absence. Also, they might not know that anything is being done on their behalf to secure their release. Such trauma could potentially lead to a host of psychopathological disorders. Family members might also accrue harms from not knowing the status of their kidnapped relations. Adding to these anxieties, if the kidnap victim provides the sole source of income for the family, they may have concerns about the possible loss of income during the period of captivity. There are also indications that perpetrators and accomplices manifest harms during this operational phase. Studies suggest that in-group violence occurs, primarily when discipline is meted out on lower ranking members of the pirate groups (TFRM, 2016, p. 6). It is also likely they suffer from the same harms as the captives stemming from unhygienic living conditions. Further, they might experience physical and psychological harms from violent law enforcement and military responses.

Harms to an individual's material interests can also occur in the attack and post-attack phases. During the attack phase of a kidnapping for ransom, opportunistic perpetrators might damage or steal a seafarer's personal property. Reputational damage might stem from maltreatment

during the attack and the period of confinement. During the post-attack phase, the act of being held against one's will would certainly constitute a harm to one's privacy and autonomy.

5.1.2. Private Sector Entities

Private sector entities identified include businesses engaged in shipping (vessel owners and operators), cargo owners, fishing enterprises (including large-scale commercial and small-scale artisanal), the oil and gas industry (including support sectors) and private security providers.

To illustrate how these harms can accrue, a plausible scenario involving an oil cargo seizure (and accompanying petty robbery) will be examined. In the pre-attack phase, the functional integrity, material interests, reputation and privacy of a private security firm might be harmed if a corrupt employee, colludes with members of the pirate group by providing privileged information on the target vessel's precise location, characteristics, anti-piracy measures and cargo. During the attack phase, the functional integrity and material interests of the vessel owner might be compromised if the target vessel receives serious damage and, as a result, is laid up for costly repairs for an extended period of time. Further material damage might accrue from the theft of valuable ship's equipment and stores. The cargo owners (the oil company) are also likely to accrue material damage due to the loss.

Damage to the functional integrity, material interests and reputation of the vessel owners can also potentially accrue, post-attack, if they cannot hire adequate staff due to security concerns (especially if they fail to take adequate anti-piracy measures) or if cargo owners refuse to charter their vessels for the same reasons. Further reputational damage can result from failure to address the needs of victims and their families. Similarly, the private security firm's reputation could suffer due to its inability to effectively prevent the attack, leading to a loss of future business and income, and ultimately its functional integrity. Further, if the stolen oil is illicitly refined and/or sold back onto the market in its original form, this might cut into the profits of the oil company.

5.1.3. Government Entities

Through the business modelling exercise, multiple Nigerian governmental bearers were identified including oil and gas regulatory bodies, port authorities, law enforcement and military. The data sources showed that harms can plausibly accrue across all interest dimensions and operational phases. To provide an illustrative example, the kidnapping for ransom scenario, described above, will be used. Across all operational phases, the Nigerian

government, as a whole, can suffer reputational harm for its inability to effectively enforce law and order. Corruption, throughout all stages, can ultimately harm the government's functional integrity, material interests and reputation. For instance, prior to the attack, a corrupt port official might provide privileged information to a pirate group concerning the route and location of target vessels. During the attack stage, corrupt members of the navy or security forces might be paid off to stay clear of a specific area or delay their response to a distress call from the target vessel. Further, during the post-attack phase, corrupt officials might be paid off to delay rescue efforts of the kidnapping victims or actually be involved in the planning and execution of the entire process.

During the attack and post-attack phases, the inability to respond to vessels in distress or to locate and rescue kidnapping victims can harm the government's reputation and ultimately its functional integrity. Further, during these phases, responding law enforcement and military bodies might experience harms to their functional integrity if assets are damaged or destroyed during confrontations with pirate groups.

5.1.4. Environment

Environmental bearers, both physical and social, also plausibly accrue harms (to their functional integrity) during the attack and post-attack phases. The scenario described above for private entities, a cargo seizure of oil from an oil tanker, will also be used to demonstrate how these harms are manifested. During the attack phase, vessel damage resulting from RPGs and explosives could foreseeably cause damage to the hull of the tanker resulting in an oil spill. Further, while transferring the oil from the target vessel to the pirate's tanker or barge, oil product could also be spilled into the surrounding waters. During the post-attack phase, if the stolen oil is intended for illicit artisanal refineries, these practices can cause physical damage to the environment. During this process, the crude oil product is refined, often in makeshift "refineries" in the marshes and swamps located in the Niger River Delta (Balogun, 2018; E. De Soomer, personal communication, April 4, 2019). Strictly a profit-making endeavour, no environmental controls are used (Balogun, 2018). The process produces large amounts of toxic waste which is released into the air via "burn-offs" and directly onto the land and surrounding waterways, in liquid and solid form. Pollution is nothing new to these parts. De Soomer noted the seas off of Nigeria are already so polluted (personal communication, April 4, 2019). Illegal oil theft – where thieves tap into pipelines and steal oil – is a major cause of the pollution.

Thieves will tap into the pipeline and steal the product but leave the damaged pipeline to leak oil into the sea.

When considering harms to the social environment, numerous artisanal fishing villages, are also located in the Niger River Delta that depend upon the same waterways for subsistence and income. As such, physical environmental damage resulting from oil and chemical spills can potentially impede their livelihoods by decreasing catches. Piracy-related violence has the potential to force many of these fishermen to remain ashore, effectively abandoning their trade which is the lifeblood of these communities.

5.2. Evaluation of Incidence and Severity of Harms

This section corresponds to sub-research questions $RQ2_c$ and $RQ2_d$. In the previous sections, plausible harms were identified for the primary, accompanying and enabled activities of Nigerian-based piracy. However, the actual evaluation of incidence and severity was restricted to those harms which were supported by "credible" evidence from primary and secondary data sources including incident reports, expert opinion and previous research (Greenfield & Paoli, 2013, p. 878). With this being said, a harm that was, "…deemed 'possible' on the basis of the business model might not materialize in this evaluation with a rating" (Paoli & Greenfield, 2013, p. 878). Following Greenfield and Paoli (2013), this evaluation took place in two stages. First, to put things in perspective, the overall incidence of contemporary Nigerian-based piracy was assessed. Next, for each of the accompanying and enabled activities, the "within-activity" incidence and severity was evaluated.

5.2.1. Overall Incidence of Nigerian-based Piracy

After compiling and reconciling the IMB, IMO and NGIA piracy reports, 406 distinct incidents were identified as occurring between 2009 and 2018. As mentioned previously, many incidents go unreported. As such, this "dark figure" must be accounted for when assessing overall incidence. A review of the literature identified numerous estimates of this "dark figure". However, most were based solely on conjecture. Cyrus Mody, the Deputy Director of the IMB, pointed to only one study that attempted to empirically assess underreporting of piracy specifically in the Gulf of Guinea region (personal communication, April 12, 2019). This study carried out by the IMB and presented to the IMO called for more and better reporting in the region and conservatively estimated underreporting at approximately 60%. Using the IMB estimate of 60%, a figure for the unreported incidents was calculated and then added to the 406

previously identified ones resulting in approximately 1,015 piracy incidents during the 10-year period. This equates to roughly 101.5 incidents per year and 8.45 per month.

This figure was then compared to the volume of vessel traffic in the region. Ship traffic distributions and statistics were produced for the Gulf of Guinea and West Africa as part of a European Commission Joint Research Centre (JRC) project focusing on piracy and maritime awareness in the region (Greidanus, Alvarez, Eriksen & Barbas, 2013). According to these estimates, based on automated ship reporting/tracking systems, approximately 5000 vessels traverse these waters per month (p. 39). From Figure 7, it is apparent that the area of concern for this analysis exhibits high concentrations of vessel traffic and that many of the major shipping lanes pass through this area (area within the red circle).

Figure 7: Vessel Traffic in the Gulf of Guinea (Combined 6 Month Period)
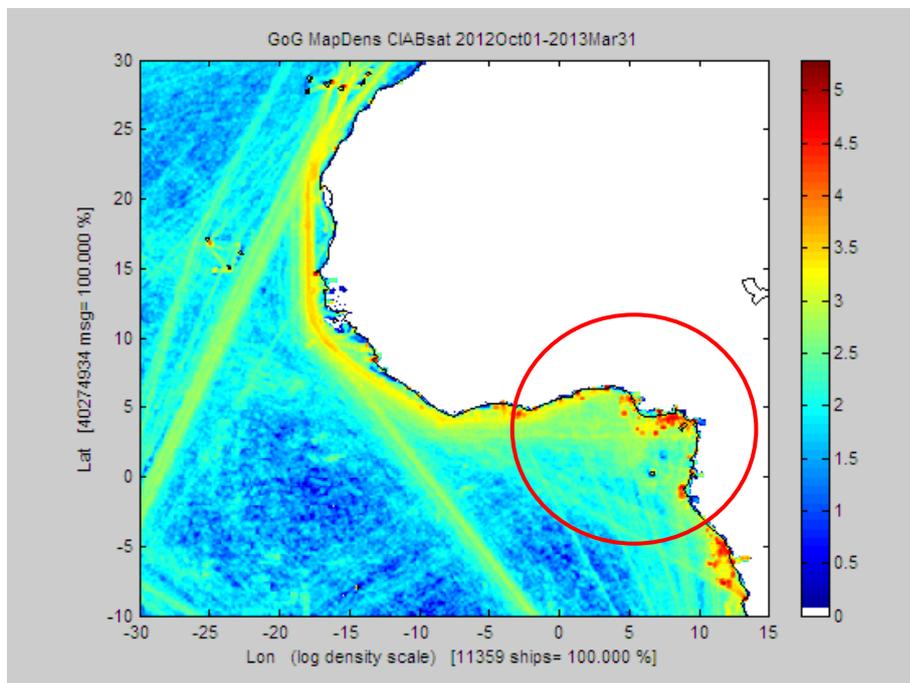
Source: Adapted from Greidanus, et al., 2013, p. 15

When compared to the volume of monthly vessel traffic in the region, the likelihood of a vessel being victimized is low, albeit somewhat higher in the high concentration areas such as the waters off Nigeria. As such, the overall incidence of the primary activity, Nigerian-based piracy, was cautiously assessed as rare although incident report data indicates that certain vessel-types are more vulnerable to piracy including those that solely or frequently operate in the area, tankers and vessels weighing more than 20,000 GWT. This incidence assessment, however, was qualified as "cautious" for a several reasons. First, the IMB estimate for

underreporting was admittedly conservative. More and better reporting could potentially have a bearing on future assessments of incidence. Second, the JRC estimates for vessel traffic in the region also included portions of West Africa outside of the Gulf of Guinea. As such, the volume of vessel traffic in the Gulf of Guinea is lower than the monthly estimates for the entire JRC study area which includes portions of West Africa. However, even if the volume of traffic within the Gulf of Guinea accounted for only half of the 5000-ship per month estimate, the overall incidence would still likely be rated as rare. Unfortunately, Gulf of Guinea-specific volume estimates could not be located. Finally, incidents have persisted throughout the 10-year study period and show signs of increasing frequency over the past few years.

5.2.2. Incidence & Severity of Harms (Within-activity)

Next, the within-activity incidence (refer to column 3 of Appendix F) and severity (column 2) of harms was evaluated across piracy and each of the accompanying activities for each bearer class. When primary data was not available, evidence from secondary sources were used to fill gaps. It should be noted that within-activity incidence refers to the incidence of a specific harm in relation to a specific activity and is distinct from the overall incidence of the harm (column 4) which is, instead derived by combining two ratings, "…the incidence of the criminal activity and, second, the incidence of the harm in relation to the criminal activity" (Greenfield, et al., 2016, p. 163).

Individual Bearers

Individual bearers experienced the most and wide-ranging harms to all interest dimensions except reputation. Evidence was found suggesting that Nigerian-based piracy yields marginal to catastrophic harms to the functional integrity of individual bearers and the incidence of these within-activity harms ranged from rarely to persistently. Violence resulting in death (e.g., murder and manslaughter) was the only activity that produced catastrophic harms. Although higher than other piracy manifestations globally, lethal violence was still a rare occurrence and specifically impacted seafarers, security personnel and pirates. Only 17 of the 406 incidents resulted in deaths (a little over 4%) and the total number of fatalities was 46. Deaths were primarily caused by gunshot wounds. These findings were consistent with IMB statistics for the region and globally (2018).

The within-activity incidence of all assault and battery types (mayhem, major, limited and petty) was rare.[3] Of the 406 cases, only 53 (approximately 13%) resulted in physical injuries. The severity of mayhem assaults and batteries, resulting in permanently disabling injuries, was assessed as grave due to the serious and lasting nature of the injuries and predominately impacted seafarers and security personnel, and to a lesser extent, pirates. The severity of major assaults and batteries, those causing injuries warranting hospitalization, was rated as serious. Most injuries resulting from mayhem and major assaults and batteries were caused by beatings and gunshot wounds. The majority of assaults and batteries were categorized as limited or petty. Limited assaults and batteries are those that merit outpatient medical care while petty ones typically result in negligible or no injuries. As such the severity was assessed as moderate to marginal. Injuries mostly resulted from punches, kicks and other blows.

Extremely rare, sexual assaults occurred in only one case (Incident #13). According to this report, two passenger vessels, while underway from Bonny Island to Port Harcourt, were attacked. Five female passengers were removed from the vessel and raped and tortured prior to being rescued by Nigerian armed forces. Such extreme physical and psychological violence warrants a severity rating of grave. Lending support to this assessment, an abundance of literature exists documenting the often severe physical and psychological harms experienced by rape and torture victims (see, e.g., Jordan, Campbell, Follingstad, 2010; Hárdi, & Kroó, 2011; Jina & Thomas, 2013).

The within-activity incidence of kidnappings was occasional. According to the incident report data, 335 seafarers (including some civilian passengers) have been kidnapped in 80 separate incidents, almost 20% of all cases and approximately 34% of successful boardings. Due to the number and complexity of harms experienced by kidnapping victims and their families (multiple victimization), the severity rating was assessed at serious. The period of confinement, between three and 12 weeks, often in primitive conditions, was factored into this severity rating. Existing research indicates that the main harm to the physical well-being of captives results from the rudimentary and unhygienic conditions of confinement (see, e.g., TFRM, 2016). Unsanitary conditions, malnourishment and chronic pests have led to a host of diseases including malaria and dysentery.

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[3] This analysis relies upon Paoli and Greenfield's (n.d.) typology of assaults and batteries that include petty, limited, major, mayhem and murder/manslaughter. They also provide severity ratings for each type based on the seriousness of the injuries and long- and short-term consequences.

Kidnapping also yields a host of serious psychological harms for captives, both short-term and long-lasting. Given the lack of Nigerian data, previous literature provides evidence of psychological harms from trauma during captivity, including PTSD, depression, anxiety and suicidal ideations (Ziello, et al., 2013; Abila & Tang, 2014; OBP, 2015; Seyle, 2016; Seyle et al., 2018). This same body research also points to significant psychological trauma experienced by family members of kidnapping victims.

Evidence was found suggesting that psychological trauma associated with threats of violence (verbal threats, intimidation, the presence of weapons, vessels being fired upon) yield within-activity harms to individual bearers persistently. These harms impacted seafarers (all types), passengers, security force personnel and victims' family. Incident report data indicates that pirates were armed in 63.55% (n=258) of all cases. Weaponry included firearms (most common), RPGs, explosives, knives and blunt objects. Perpetrators discharged their weapons in over a third of all incidents (n=149). Verbal threats were also commonplace. A severity rating of serious was assessed for a few specific reasons. First, the threat of violence was present in the majority of attacks. Second, these threats were not baseless—the pirates had the means and willingness to follow through with them. This was demonstrated in the number of violent assaults that were recorded. Finally, findings from psychological research has shown that trauma, including threats during piracy incidents, can lead to long-term mental health problems, most notably PTSD and anxiety, and can even influence seafarers work-related attitudes and decisions (Seyle, 2016). In some cases, even transiting piracy-prone areas can produce these harms (*ibid.*).

Secondary data was found indicating Nigerian-based piracy produces harms to the material interests of individual bearers ranging in severity from marginal to grave. The robbery of artisanal fishermen in the Niger Delta has led to persistent and grave harms to their material interests. Already extremely poor, being deprived of their vessels, equipment and outboard engines takes away their only means of income. The risk of piracy, specifically violence (including threats) has forced some merchant mariners to leave the industry as noted in Seyle's (2016) study. Although this is a moderate threat to their livelihood and the welfare of their dependents, evidence suggests that it occurs only rarely. More serious is the number of commercial fishermen who no longer fish due to the violence (Adongoi, et al., 2017). This is further illustrated by the dwindling commercial trawler fleet that has resulted in the loss of jobs for many fishermen (Ambrose & Nwaka, 2017). Deprivation of crewmember's (or passenger) property occasionally occurs (20.44% of all incidents). As this typically results in the theft of

small personal effects (cell phones, watches, etc.) and small amounts of cash, the severity rating was assessed at marginal.

Kidnapping victims experienced persistent intrusions on their privacy. The deprivation of one's privacy during a period of confinement after being kidnapped was assessed as moderate due to the lengthy period of captivity (3 to 12 weeks) in almost complete isolation with no contact with family and friends. Research indicates that kidnap victims are usually confined with other victims in rudimentary accommodations affording no privacy (TFRM, 2016). As they are being held against their will, they are obviously not afforded the freedom of movement. It should also be noted that brief periods as a hostage during actual attacks (usually less than a few hours) produces marginal harms to an individual's privacy (seafarers and passengers) as does the unlawful entering and ransacking of crewmember's personal quarters and property. The within-activity incidence of these harms was occasional.

Private Sector Entities

Evidence was found suggesting that violence (all forms) yields marginal to grave harms to the functional integrity of private sector entities and the incidence of these "within-activity" harms ranged from rarely to persistently. Grave and persistent harms were, however, confined to artisanal and commercial fishing operations. Although the incident report data only contained a handful of cases involving fishing vessels, secondary sources indicate that these attacks are frequent occurrences and are often not typically reported (Adongoi, et al., 2017; Ambrose & Nwaka, 2017). Sources also indicate drastic reductions in Nigeria's commercial fishing fleets due to piracy-related violence. Further, many artisanal fishermen are no longer willing to risk their safety and have not returned to the water for their livelihoods Adongoi, et al., 2017). According to Ambrose and Nwaka (2017), many commercial outfits have gone out of business and, at the time of their research, only 8 of the original 40 were still in operation. Moreover, the fleet of trawlers, originally number around 250 was reduced to 122 (p. 44). Harms to oil and gas-related forms and other maritime-sector industries occurred rarely to persistently and the severity was moderate to marginal. The severity score for the oil and gas sector was assessed slightly higher due to the number of assets targeted by pirates.

Harms to private-sector entity's material interests ranged from marginal to serious and the within-activity incidence ranged from rarely to occasionally. Within-activity incidence of major property damage resulting from piracy was assessed rare. Only a handful of cases resulted in serious damage to the vessel by the detonation of explosives and collisions with

other vessels (Incident #'s 6 and 27). In two incidents pirates destroyed nearly all of the bridge equipment (Incident #'s 98 and 398). It should be noted that insurance policies mitigate some of these losses. Incident data indicated that damage to target vessels occurred in 21.67% (*n*=88) of all incidents, most was only minor, and resulted from gunshots and the ransacking of the vessel. Communications and navigational equipment were often damaged as well as windows, portholes, doors, lifeboats and anti-piracy mechanisms such as razor wire.

Kidnapping for ransom also occasionally yielded harms to the material interests of shipowners. When factoring in ransom payments, typically in the range of $30,000.00 to $100,000.00 per captive, as well as captivity pay[4] due to kidnapped sailors during their period of confinement, the severity was rated as moderate (OBP, 2015, pp. 53-58). Further, the facilitation of crisis operations following kidnappings is also likely to be costly involving increased staffing and contracting specialist to assist with negotiations. A higher severity rating would likely have been given had ransom insurance not mitigated some of these harms.

According to incident report data, occasional harms to shipowners manifested from robbery/theft of ship property (20% of all incidents, *n*=83). Perpetrators generally pilfered items that were easily obtainable including ship's cash, stores, electronics, outboard engines and other equipment. OBP (2015, p. 52) estimated that between $20,000.00 and $75,000.00 worth of ship's stores and equipment are stolen during a typical incident. It should be noted that most commercial vessels carry insurance to mitigate some of these losses. Although no cases of vessel theft were identified in the dataset, existing research has indicated that vessel seizures have occurred, mostly fishing trawlers which are later used as "mother ships" (Ambrose & Nwaka, 2017, p. 45). As such, the overall severity was rated as moderate to incorporate vessel seizures.

Incident report data revealed that cargo seizures (exclusively oil and oil products) were rare and comprised little more than 1% (*n*=5) of all cases. These findings are consistent with existing research (Otto, 2016, p. 2). Mitigating this loss, many tankers carry cargo insurance policies. On top of this, a few other cases involved the petty siphoning of oil, in small amounts, from vessels, often in port areas, often without the knowledge of the crew. As such, the severity of these harms is marginal to vessel and cargo owners.

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[4] Captivity pay, according to OBP (2015), **"…**is the amount in addition to base pay that seafarers (or their families) are entitled to for the duration of their captivity in the event they are taken hostage" (p. 58).

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No direct evidence could be found indicating harms to the privacy or reputation of private sector entities.

Government Entities

The government of Nigeria experienced marginal to moderate piracy-related harms to its functional integrity, material interests and reputation. No evidence could be found indicating harms to the privacy of government entities. The within-activity incidence of these harms ranged from rarely to continuously.

The most impacted interest dimension was the government's reputation primarily related to widespread and endemic corruption, its inability to enforce laws and lack of political will to address piracy. Paoli, et al. (2013) argue that, "…the reputation of any government suffers at least slightly, whenever it appears unable to enforce one of its laws…" (p. 427). In Nigeria, however, there are no piracy laws on the books to enforce. No domestic anti-piracy legislation exists, making prosecution almost impossible (Kamal-Deen, 2015). This has led to a phenomenon known as "catch and release" effectively creating an environment of impunity for pirates (Kamal-Deen, 2015; Rohwerder, 2016). Consequences are felt throughout the Gulf of Guinea region as this Nigerian-based criminality is unimpeded and has spread. Sources corroborate that no known prosecutions have taken place including OBP (2015) and Mody (personal communication, April 12, 2019). Incident report data further indicates that apprehensions (including arrests and killing of pirates by law enforcement and security forces) are rare, only occurring in 13 cases. Data indicates that only 24 suspects were arrested and 25 killed.

Adding to this inability to prosecute suspects, and also contributing reputational harms, is a general lack of political will on the part of the Nigerian government to address the piracy issue. Despite Nigeria's ratification of the IMO's Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation of 1988, provisions have yet to be incorporated into national law, hampering efforts to combat maritime crimes in territorial waters (Kamal-Deen, 2015; Jacobsen & Nordby, 2015). Until the political will to combat piracy is enhanced and anti-piracy legislation is adopted, the within-activity incidence of these harms is likely to remain at "continuously".

Reputational harms are further accrued due to political corruption related to piracy (Jacobsen & Nordby, 2013, p. 17). The within-activity incidence of harms was rated as persistent based upon available evidence. Grand corruption, involving high-level government officials yielded moderate harms to the reputation of the government of Nigeria. Petty corruption, involving lower-level officials yielded only marginal harms[5]. Higher severity scores were not assessed for a few reasons. As corruption is so widespread in most government and economic sectors, corruption specific to piracy is likely to have less of an impact in a country with an already poor track record. Transparency International (TI), an NGO dedicated to fighting global corruption, has consistently rated Nigeria in the bottom tier based upon their Corruption Perception Index (CPI). In 2018, Nigeria's CPI rating was 27 out of 100, and ranked as the 144th most corrupt nation out of 180 (TI, 2019a). Palmer (as cited in Jacobsen & Nordby, 2013, p. 17) argues that Nigeria is "an archetype of the predatory state," noting rampant corruption even within the military. Another reason for the lower severity ratings was because corruption, "…does not, however, prevent them from at the same time performing their official functions, at least to some extent" (Østensen, et al., 2018, p. 14).

There is evidence that corrupt officials are directly linked to piracy as noted in the following: "Today, insiders in the Navy, Customs, and Port Authorities still inform pirates and militants on the location of boats and the value of their cargo. Some of them even provide copies of the bills of lading" (Pérouse de Montclos, 2012, p. 538). Pérouse de Montclos (2012) further notes that there is evidence that the Nigerian Navy is "extremely" corrupt (p. 538), an assertion also supported by the work of Østensen, et al. (2018) and Anele (2017). Ambrose and Nwaka (2017) even argue that, "fraud and corruption are the pillars of maritime piracy" (p. 47). The UNODC (2013) and Jacobsen and Nordby (2013) have also come to similar conclusions. Evidence from the limited primary data collection also pointed to the endemic corruption within the Nigerian government. In an interview, De Soomer repeatedly pointed to corruption as a serious problem and one that is directly linked to piracy (personal communication, April 4, 2019).

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[5] In line with Paoli and Greenfield (n.d.), this research also employs Transparency International's (2019) definition of corruption, which can be petty or grand, and involve actors from both governments and private enterprises: "…a manipulation of policies, institutions and rules of procedure in the allocation of resources and financing by political decision makers, who abuse their position to sustain their power, status and wealth". Grand corruption is defined as, "The abuse of high-level power that benefits the few at the expense of the many, and causes serious and widespread harm to individuals and society" and petty corruption is defined as "Everyday abuse of entrusted power by public officials in their interactions with ordinary citizens, who often are trying to access basic goods or services in places like hospitals, schools, police departments and other agencies" (Transparency International, 2019b).

The government's functional integrity is also damaged by corruption related to piracy. The severity of harms was also assessed as marginal to moderate and the incidence as "persistently". Evidence to support these ratings can be found in the above discussion concerning the effects of corruption on the government's reputation. To avoid repetition, they will not be repeated here.

The material interests of the government of Nigeria were marginally but rarely harmed resulting from pirate attacks on Navy and security vessels. Only one case was identified (Incident # 210) where a houseboat belonging to Nigeria's Joint Task Force was attacked and weapons and ammunition were stolen. Similarly, Nigeria experienced a very minor revenue losses from the rare theft of oil cargos. Much of this product ended up being resold in the black markets in the region.

Environmental Bearers

Data sources appear to confirm that the social environment, specifically within rural artisanal fishing settlements in the Niger River Delta, is harmed by piracy. These settlements depend upon fishing for sustenance and income. According to Whitman and Saurez (2012), "As fishing represents the main source of income for many remote coastal communities, piracy can have profound implications for residents with few alternative opportunities to earn a living" (p. 86). A survey conducted in these settlements by Adongoi, et al. (2017) found that, "…the activities of sea robbers in Niger Delta waterways have impoverished fishing activity which is the mainstay of most rural communities in the region" (p. 40).

These harms manifested from violence (including threats). The within-activity incidence was assessed as persistent based upon the survey findings from Adongoi, et al. (2017). Similarly, severity was rated as grave as these activities threaten the very survival of these already impoverished settlements. Also contributing to this assessment was a particularly troubling finding from Adongoi, et al. (2017, p. 40) – many of the unemployed fishermen are now engaging in maritime criminality to support their families. This was further supported by findings from Whitman and Saurez (2012, p. 86).

No direct evidence was found suggesting that harms are accrued by the physical environment. Although the possibility of a piracy incident causing damage to the physical environment exists, specific incidents could not be found in any of the data, and only anecdotal references in the literature. It is also likely that a portion of the oil stolen during cargo seizures ends up in illicit refineries and thus, indirectly contributes to the environmental degradation that is

common with these enterprises. However, no data could be found to confirm this. It may be that these incidents go unreported in Nigeria, a nation whose environmental track record is already poor.

5.3. Prioritizing Harms

Next, and corresponding to sub-research question RQ2$_e$, the overall incidence and severity ratings for each harm across piracy and each of the accompanying activities were combined and presented in Appendix F. A priority score was then assessed, for each (refer to column 6 of Appendix F), using Greenfield and Paoli's (2013, p. 873) matrix for prioritizing harms.[6] To reiterate, within the harm assessment framework, harm prioritization scores can range from very low (V/L) to very high (V/H) (refer to Table 4 above).

It is also important to note that in this process the priority scores are based on, "…the rating of the overall incidence of each harm and not the rating of the within-activity incidence" (Greenfield, et al., 2016, p. 166). As noted by Greenfield, et al. (2016), if the incidence ratings are treated as, "…indicative of probability or likelihood...the overall rating cannot be greater than the rating of the lesser of the two components" (p. 163). Therefore, in this analysis, although a specific within-activity incidence of harm might exceed the overall incidence of the primary criminal activity (piracy), the overall incidence of the harm cannot. Since the incidence of the primary criminal activity (piracy) was rated as occurring only rarely, the overall incidence of a specific piracy-related harm cannot exceed a rating of "rarely". As "rarely" is the lowest possible rating in the scale, the overall incidence of each of the piracy-specific harms had to be rated as occurring "rarely". To further clarify, if the overall incidence of piracy had been assessed as occurring persistently, then the overall incidence of a specific harm could potentially range from "rarely" to "persistently" but no higher.

5.3.1. The Priority Ratings

Driven by the low overall incidence of Nigerian-based piracy, occurring only rarely, the majority of harms warranted priority ratings of very low (V/L) to low (L). A few harms obtained medium low (M/L) priority ratings and only one medium (M). No harms exceeded a priority rating of medium (M). The harms warranting the highest priority were those intruding on the functional integrity of individual bearers, primarily seafarers, security personnel and perpetrators. Murder and manslaughter were assessed as medium (M) priorities, the highest in

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[6] Adapted from Greenfield and Camm (2005).

this analysis. Mayhem and sexual assaults warranted medium low (M/L) scores. The remaining harms to the functional integrity of individual bearers ranged between very low (V/L) to low (L). The grave harms experienced by artisanal Delta fishermen due to the theft/robbery of their vessels, equipment and outboard engines constituted a medium low (M/L) priority due to the intrusion on their material interests. The remaining harms to their material interests and privacy of individual bearers warranted low (L) and very low (V/L) priority ratings.

Harms to the social environment, specifically in rural Delta fishing settlements, and resulting from violence obtained a medium low (M/L) priority rating. Harms experienced by private sector entities (functional integrity and material interests) were mostly given very low (V/L) to low (L) priority scores with one exception. Intrusions on the functional integrity of commercial and artisanal fishing outfits resulting from violence (all forms, including threats) were assessed as a medium low (M/L) priority. All harms experienced by the government of Nigeria, including intrusions on functional integrity, material interests and reputation, were prioritized as low (L) or very low (V/L).

5.3.2. An Alternative Perspective

Although the overall incidence rating has conservatively accounted for underreporting (60%), if this analysis had used a more liberal estimate (anywhere between 60% and 80%), the overall incidence would likely only have been assessed as "seldom" instead of "rarely" based on vessel traffic estimates. The resulting changes to the priority scores would be, for the most part, unremarkable. No harms would reach high (H) or even medium high (M/H) priorities. The majority of the priority scores would remain either low (L) or very low (V/L). The largest impact would be to the harms experienced by individual bearers to their functional integrity with four moving from low (L) to (M/L).

5.4. Investigating Causality

In the final stage of the assessment, causality of the harms is investigated. This corresponds with Research Question #2 and specifically, sub-question RQ2$_f$ (*What are the causes of these harms?).* In line with Greenfield and Paoli (2013, pp. 879-880), this was done in two steps: 1) evaluate the distance between the primary criminal activity (piracy) and the identified harms; and 2) using "counterfactual reasoning", assess the "…extent to which the harms associated with a criminal activity arise from the policy environment, including the prohibition of the criminal activity and related regulations and enforcement practices." Paoli and Greenfield (2013) argue that, "The purpose of this exercise is to assess the extent to which possible harms

can be considered intrinsic to an activity. It also helps to single out the arenas in which policy makers might have the most leverage, insomuch as the harms accrue from their own policies" (p. 880).

After assessing the distance between the primary criminal activity (piracy) and the identified harms it was concluded that all harms were directly related to the primary criminal activity. Although "possible" remote harms were identified early in this analysis related to illicit refining and receiving of stolen goods, evidence of these harms could not be found.

The harms of piracy do arise, to some extent, from the policy environment in Nigeria but not from its prohibition. As previously noted, Nigeria lacks the legislative framework to prosecute pirates. No domestic laws exist to make this possible. Without effective laws, pirates operate with relative immunity from legal prosecution although they do risk being killed by security forces. The few that are apprehended are released with few consequences—a practice known as "catch and release". If previously drafted legislation is finally adopted, it is likely that this criminality will continue. The profitable nature of this enterprise, in an incredibly impoverished nation, will, in all likelihood limit any deterrence effect resulting from prohibition. As it currently stands, pirates face the risk of death if intercepted by security forces. With this in mind, the threat of a prison sentence is most likely not going to significantly deter perpetrators from committing these crimes.

5.5. Comparison of the Harms Assessment with the Cost of Piracy Literature

As previously mentioned, many studies have examined the costs of piracy both globally and at the regional level. Most are narrowly focused on a specific bearer and/or on a very specific cost (e.g., trade-related costs). A few have attempted macro-level estimates of the financial costs (in dollars) of piracy globally. Severity is usually equated to higher dollar figures. As such, most only consider quantifiable and tangible costs. From an academic perspective, these studies have increased our knowledge of the phenomenon, in part by illustrating the potentially far-reaching consequences, both globally and regionally, and in identifying these costs. However, from a more practical perspective, they offer little which policy-makers can use when developing more effective policies and interventions. Nor do they have utility in ascertaining which harms deserve priority and should be specifically targeted. Relying on these cost estimates would leave policy-makers with little choice but to prioritize those that had the largest financial impact, neglecting other intangible costs that might deserve higher priority.

In addition to their scientific value, the findings gleaned from the harm assessment framework, on the other hand, can be put to practical use. The framework was specifically developed as a functional tool which can be employed by policy-makers to assess the harms of almost any type of crime, regardless of complexity, when developing and evaluating criminal policy. More specifically, it allows them to identify all potential harms, both tangible and intangible, to all bearer classes. It further allows them to assess the incidence and severity of the identified harms and to then decide which warrant prioritization based on a systematic and data-driven process. Further, within this approach, quantitative data is not necessarily required. All data, both quantitative and qualitative, is considered and weighed the same. As illustrated in this analysis, it would not be possible to place a dollar amount on many of the most severe harms warranting the highest priority scores (e.g., sexual assaults) but the framework still afforded them with equal consideration and weight. Moreover, the business modelling exercise, in itself, is a valuable tool within the public policy process, requiring the analyst to think through, in detail, each phase of the criminal activity to understand the nuances of each mode. This data can then be used in developing tactical and strategic responses.

6. CONCLUSION

This research set out to systematically and empirically assess the harms of contemporary Nigerian-based piracy across multiple bearers and interest dimensions. To do so, an innovative harm assessment framework, developed by Greenfield and Paoli (2013) was employed. The assessment framework, a multi-step exercise comprised of distinct analytical phases and processes, required the articulation of business models for each of the primary modes of Nigerian-based piracy, the identification of possible harms and bearers, the evaluation of the incidence and severity of actual harms, the rating and prioritization of harms and finally, investigating potential causes of the identified harms. To do so, a mixed-methods approach was employed relying on both primary and secondary data sources. Methods included an extensive literature review, content analysis of over 400 piracy incident reports and semi-structured interviews.

This research made a number of contributions, albeit modest, to the study of piracy and criminal harms. It is the first evidence-based and systematic assess of the harms of piracy. In doing so, it provided a valuable addition to a seriously under-studied phenomenon specifically within the field of criminology and it contributes to an emerging body of literature focusing on the harms of crime. It also offered a further test of Greenfield and Paoli's analytical framework and showed that it could be applied to "non-traditional" crime-types. It provided further support to their claim that the framework still can successfully be applied (rapid assessment) even in situations where an extensive primary data collection is not feasible (rapid assessment applications) (Paoli & Greenfield, n.d.). Specifically concerning contemporary Nigerian-based piracy, this research provided valuable insights not only on the harms but also on the specific business models, the individuals and entities harmed, the overall incidence of attacks, the within-activity incidence of the harms, their severity and priority ratings.

Tempering the above contributions and the main findings of this research, it is important to be forthcoming about some of its obvious limitations. First, as this study relied predominately on self-reported victimization data, the high rate of underreporting of piracy incidents is of significant concern. Although this study attempted to mitigate the impacts of underreporting by using multiple sources of victimization data, it is still likely that many incidents were not accounted for. This limitation is not unique to this study and is a problem for most piracy-related research.

Second, because this project relied mostly on secondary data sources and previous research it was not possible, despite every effort, to exclude all potential sources of bias. These data sources were not originally developed for the specific purposes of this research nor to answer its specific research questions. Further, in reference to the rapid assessment strategy, "…attempting something rapid, especially in an unfamiliar arena, has its risks" (Paoli & Greenfield, n.d., p. 55).

6.1. Summary of Main Findings

This analysis revealed a number of policy-relevant findings. The main ones are summarized here. Although piracy in the Gulf of Guinea, and particularly in the waters off Nigeria, is the current global "hotspot", with attacks becoming more frequent and violent, the overall incidence, after conservatively accounting for underreporting and the volume of vessel traffic in the area, was still only rare. Much of the existing literature fails to account for the overall incidence of piracy in relation to the actual volume of vessel traffic. Instead, most only rely on the actual number of incidents and how they change over time. With this being said, because a criminal activity is rare does not imply that it is unworthy of serious scholarly attention or policy consideration. Nor does it suggest that rare events cannot have significant and far reaching consequences. It does however, imply that, "while piracy is undoubtedly a major problem in some parts of the world, it must be kept in perspective" (Bateman, 2010, p. 13). Nigerian-based piracy, although rare, still impacted all bearer classes and produced a number of serious harms. Though most harms were limited and merited only low (L) to medium low (V/L) priority scores, at the high end of the spectrum, several warranted medium (M) and medium low (M/L) priority scores.

The findings indicated that individual bearers, predominately seafarers (including merchant mariners, fishermen, other vessel passengers) suffered the most from piracy, experiencing the most harms in terms of sheer numbers. They also were subjected to the most severe ones, eight of which ranged from serious to catastrophic. Almost all harms were the direct consequence of violence (all forms, including threats). Harms were experienced across most interest dimensions (except reputation), the majority of which impacted the functional integrity of individual bearers. Although most harms were prioritized as low (L) or very low (V/L), the highest priority score assessed across all bearer classes was allocated to individual bearers for catastrophic harms related to the loss of life caused by violence. Violence related to mayhem and sexual assaults were prioritized as medium low (M/L). Seafarers experience some of the

most serious harms yet their victimization is often underscored by that of the government and private sector entities. This neglect is seen in much of the piracy literature but findings from this research indicate that their victimization should figure more prominently. Mody asserts that, "…people are becoming more and more oblivious to the fact that, at the end of the day, it is the seafarer who's literally the one not being given the degree of comfort – that there are mechanisms in place which would allow them to be safe" (C. Mody, personal correspondence, April 12, 2019). A promising new line of piracy-related inquiry is now focusing specifically on the human costs to seafarers (see, e.g., OBP, 2017; Whitman & Saurez, 2012; Seyle, et al., 2018) and is hopefully going to bring these issues to the forefront. The plight of Nigerian fishermen cannot be ignored either. They experienced many of the same harms as other classes of seafarers. These harms have sparked the near collapse of the industry resulting in the loss of jobs as well as a valuable source of dietary protein in an already impoverished country.

The social environment in artisanal fishing settlements in the Niger Delta was also impacted by the harms related to piracy violence and was assessed as a medium low (M/L) priority. Many of these communities have been devastated by the loss of their primary means of subsistence and in a strange turn of events, has forced many into committing the very crimes they were once victimized by as one of the few viable ways to support their families. The impacts on these communities has only recently gained the attention of scholars and is grounded in the valuable contributions of Essien and Adongoi (2015), Adongoi, et al. (2017) and Ambrose and Nwaka (2017). No evidence was found suggesting harms to the physical environment though the risk is ever present and should not be discounted.

Even though much of the academic literature focuses on the trade-related and economic impacts of piracy mostly affecting governments and private sector entities (see, e.g., Wajilda, 2013; Ahmodu, et al., 2017; Ofuso-Boateng, 2018), the findings from this study indicate that in the Nigerian manifestation, harms to these bearers warrant mostly low priority scores. Although private sector entities within the maritime, oil and gas and commercial fishing domains experienced multiple harms to their functional integrity and material interests, the majority were only marginal to moderate in severity with a few exceptions. Most harms were directly related to violence, closely followed by property deprivation and damage. Almost all were assessed as low (L) and very low (V/L) priorities with the exception of the grave harms experienced by commercial and artisanal fishing operations, a medium low priority (M/L). No evidence was found suggesting harms impacted their reputations and privacy.

Similarly, harms to the government of Nigeria were confined to its functional integrity, material interests and reputation. Although the within-activity incidence for most were high (persistently and continuously), all severity scores were only marginal to moderate. Corruption was directly related to most. The government's reputation experienced continuous harms due to its inability to effectively control the piracy problem due, in part, to a lack of political will and the necessary anti-piracy legislation. Higher severity rankings were not justified because the corruption related to piracy makes up only a small part of the grand corruption that is pervasive and entrenched throughout almost all sectors of society. As such, the impacts on the functional integrity and reputation of Nigeria from piracy-related corruption (both petty and grand), in a nation already known as an "archetypical predatory state" and a "structured kleptocracy", are likely only marginal to moderate (Palmer as cited in Jacobsen & Nordby, p. 17; Carnegie Endowment for International Peace, 2014, p. 8).

Another important finding is that after assessing the distance between the primary criminal activity (piracy) and the identified harms it was concluded that all harms were a direct consequence of the primary criminal activity. However, the harms associated with corruption were unique. Corruption acted as a facilitator and was present in all phases of the primary activity. None of the harms were a direct consequence of the legal status of the crime of piracy as no such laws currently exist in Nigerian criminal law.

6.2. Policy Implications and Recommendations

Although the scope of this project did not permit a full or even partial policy analysis, a few important policy implications and recommendations were identified. As the eradication of piracy is likely not going to be viewed as a high priority by the government of Nigeria, which is arguably facing a number of more serious security issues and other internal crises, the findings from this analysis could be used, at least in the short term, to target some of the most serious harms with the highest priority scores. Focusing on long-term counter-piracy objectives, at this point, would be a fruitless endeavor and will only be possible once there is sufficient political will to do so and serious efforts have been taken to address the pervasive culture of corruption. Although it is likely that short-term solutions aimed at containment and prevention will do little towards eradicating piracy in Nigerian waters, they can be used to minimize the severity of harms and to provide basic protections to those most at risk, the seafarers and artisanal fishing communities. Greenfield and Paoli (2013) suggest a number of ways that the assessment framework can be used in the short-term:

Our framework can also help law-enforcement agencies decide which perpetrators, if any, merit special attention and thereby help them set their operational or tactical, short–medium-term priorities. The assessment process might, for example, reveal that certain types of perpetrators, distinguished by demographic traits, location, criminal affiliations or other characteristics, disproportionally engage in particularly harmful activities (p. 881).

Before any of these short-term recommendations can be implemented, the first logical step to be taken by the government of Nigeria, and one which should be encouraged by the international community, is to pass anti-piracy legislation and to incorporate the provisions of the IMO's Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation of 1988 within it (Ukeje & Mvomo Ela, 2013; UNODC, 2014; Kamal-Deen, 2015; Lucia, 2015; Otto, 2016). As draft legislation already exists, the only hold up is passage in the Nigerian Assembly. Until this is accomplished, law enforcement and militarized operations are seriously hindered.

Already, most Nigerian, regional and international responses are geared towards the short-term and focus on enforcement operations. Such operations could be modified towards the priority areas indicated in this analysis including providing basic protections to seafarers operating in Nigerian waters and fishing communities in the Delta States. This requires not only consistently and rapidly responding to vessels under attack but also proactively seeking out pirates in high risk areas and in their shore-based enclaves in the Delta. Due to the transnational nature of piracy, research also suggests the need for Nigeria to cooperate and coordinate with neighboring countries during enforcement operations (Kraska & Wilson, 2009; Mandanda & Ping, 2016; Rohwerder, 2016). Insights from the business modelling exercise can be used to tailor specific tactical responses. The business models provide detailed information, for each mode of piracy, on the perpetrators' *modus operandi*, actors involved, tactics and weaponry used, which vessels are more likely to be victimized, etc.

The assessment findings, consistent with secondary sources, also revealed spatial distributions of piracy incidents (refer to Figure 6 above and Appendix D below). Focusing pro-active interventions in these "hot spots" (Townsley & Oliveira, 2015), including in and around the Delta States and Lagos Port (including the secure anchorage), could reduce harms associated with the opportunistic and predatory attacks there. A similar tactic could be used on the commercial fishing grounds where larger trawlers usually ply their trade and have been the target of many attacks in recent years resulting in serious harms to this industry sector (Adongoi, et al., 2017). Reducing this violence would also serve two additional purposes. As many trawlers have been seized by pirates and used as "mother ships", reducing these incidents

could potentially minimize pirates' capabilities to carry out future attacks and attacks farther out to sea, beyond the typical range of skiffs and speedboats. These operations could also target pirates preying upon artisanal fishermen in the riverine environs of the Delta and provide at least some protection to the commercial fishing industry which could help to revitalize this crippled sector. Putting unemployed fishermen back to work would minimize the likelihood that they would turn to piracy and other illicit enterprises to support their families.

International partnerships focusing on increasing Nigeria's naval and law enforcement capacities could, in addition to providing equipment and training pertaining to reactive responses, also focus on proactive enforcement. However, when discussing capacity-building, we must be ever mindful of corruption, even within the Nigerian Navy and law enforcement bodies (Jacobsen & Nordby, 2015; Østensen, et al., 2018). Corruption has the potential to threaten capacity-building projects. Østensen, et al. (2018) rightly points out that, "By building capacity while ignoring corruption, foreign partners risk professionalising corrupt actors and thereby aggravating corruption in the sector" (abstract). Foreign governments and international organizations engaging in capacity-building projects are in a position to apply political pressure on the government of Nigeria to make lasting anti-corruption reforms as a condition of any good will. As Jacobsen and Norby (2015) note, prior to engaging in any capacity-building projects, foreign donors should conduct a risk assessment to ensure that any good-will is not exasperating the problem (p. 53). Controls should also be put in place to minimize the risks of corruption within capacity-building projects.

It is important to note that until long-term solutions targeting the "root causes" are implemented and corruption is effectively addressed, mitigating harms to seafarers and their families resulting from violence is crucial, as is providing adequate aftercare (Ziello, et al., 2013; Seyle, et al., 2018). Private actors share in this responsibility. Shipowners need to do a better job of educating seafarers and family members about the potential risks and how they will respond during a crisis. Further, they need to keep the family members informed during these incidents, especially kidnappings. Vessel owners need to take reasonable steps to ensure their vessels are hardened against pirate attacks (Lucia, 2015; Mandanda & Ping, 2016; Rohwereder, 2016), that private security is employed wherever possible (Mandanda & Ping, 2016) and crew are well trained and drilled in response to these events (Anele, 2017). In doing so, they should properly adhere to industry best management practices developed by international shipping organizations (Lucia, 2015; Rohwerder, 2016; Oil Companies International Marine Forum [OCIMF], 2018). Criminological research rooted in situational crime prevention has already

evaluated which shipborne counter-piracy measures are more effective (Rengelink, 2012; Bryant, et al., 2014; Shane & Magnuson, 2016). Vessel owners and masters could draw from these insights. Moreover, they need to start reporting **_all_** incidents, regardless of severity, so that researchers can get a "true" fix on the problem (Otto, 2016; IMB, 2018).

6.3. Future Research

Despite being limited to one geographic manifestation of piracy, this project has shown that the harm assessment framework can be successfully applied to this crime. Greenfield and Paoli (2013, pp. 881-882) point to several potential roles of the harm assessment framework in policy analysis. Although the scope of this project precluded a full or even a partial analysis of Nigerian, regional and international counter-piracy policies and actual interventions, based upon the findings of this assessment, future research could do so.

In-depth fieldwork in Nigeria might provide valuable insights into the "dark figure" of unreported incidents specifically involving small fishing and passenger vessels as well as non-commercial ones (e.g., pleasure craft). This fieldwork may uncover untapped sources of data on piracy incidents possibly from NIMASA, other governmental agencies and the Nigerian Trawler Owners' Association (NITOA). Moreover, government sources might be able to provide local vessel traffic estimates specific to the littoral waters of Nigeria including internal waterways, territorial waters and the EEZ. Additional sources of data could potentially be exploited including maritime insurance firms as well as security outfits and attorneys specializing in piracy.

Future applications of the assessment framework could potentially focus on other regional piracy manifestations, possibly in the Indonesian Archipelago, the Malacca and Singapore Straits, the Horn of Africa and the entire Gulf of Guinea. Further, it may be interesting to expand the assessment framework by comparing harms across multiple regional manifestations and further, to analyze and compare the associated public policy plans and actual intervention efforts.

Beyond piracy, this research, along with the works of Greenfield, Paoli and colleagues, has shown that the findings from the harm assessment framework can be put to practical use by policy-makers, be they public or private, to reduce the harms associated with criminal activities. This same research indicates that harm assessments should be the first tool employed when developing criminal policy.

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Appendix A: Piracy & Armed Robbery Attack Report (Standardized Form)

ICC-INTERNATIONAL MARITIME BUREAU
(PIRACY REPORTING CENTRE)

PIRACY & ARMED ROBBERY ATTACK REPORT

The ICC - International Maritime Bureau (IMB) was established in 1981 to act as a focal point in the fight against all types of maritime fraud, malpractice and piracy. The United Nations (UN) International Maritime Organization (IMO) in its resolution A 504 (XII) (9) adopted on 20 November 1981, has among other things urged all governments, interests and organizations to exchange information and provide appropriate co-operation with the IMB. The IMB also has an observer status with the International Criminal Police Organization (ICPO – INTERPOL).

PART A: VESSEL PARTICULARS / DETAILS

1	NAME OF SHIP:
2	IMO NO:
3	FLAG:
4	TYPE OF SHIP:
5	TONNAGES: GRT: NRT: DWT:
6	OWNERS (ADDRESS & CONTACT DETAILS):
7	MANAGERS (ADDRESS & CONTACT DETAILS):
8	LAST PORT/NEXT PORT:
9	CARGO DETAILS (TYPE/QUANTITY):

PART B: DETAILS OF INCIDENT

10	DATE & TIME OF INCIDENT: LT UTC
11	POSITION: LAT: (N/S) LONG: (E/W)
12	NEAREST LAND MARK / LOCATION:
13	PORT /TOWN / ANCHORAGE AREA:
14	COUNTRY /NEAREST COUNTRY:
15	STATUS (BERTH /ANCHORED / STEAMING):
16	OWN SHIP'S SPEED:
17	SHIP'S FREEBOARD DURING ATTACK:
18	WEATHER DURING ATTACK (RAIN/FOG/MIST/CLEAR/ETC,), SEA / SWELL HEIGHT):
19	WEATHER DURING ATTACK: WIND (SPEED & DIRECTION),
20	WEATHER DURING ATTACK: SEA
21	WEATHER DURING ATTACK: SWELL,
22	TYPES OF ATTACK (BOARDED / FIRED UPON / ATTEMPTED):
23	CONSEQUENCES FOR CREW, SHIP AND CARGO: ANY CREW INJURED / KILLED: ITEMS / CASH STOLEN:
24	AREA OF THE SHIP BEING ATTACKED:

PART C: DETAILS OF RAIDING PARTY

25	NUMBER OF PIRATES / ROBBERS:
26	DRESS / PHYSICAL APPEARANCE:

27	LANGUAGE SPOKEN:
28	DESTINCTIVE DETAILS:
29	CRAFT USED:
30	CLOSEST POINT OF APPROACH (CPA):
31	METHOD OF APPROACH:
32	DURATION OF ATTACK:
33	AGGRESSIVE / VIOLENT:

PART D: DETAILS OF WEAPONS USED AND DAMAGE CAUSED

34	WEAPONS SIGHTED (YES / NO):
35	WEAPON TYPE:
36	WEAPONS USED (YES / NO):
37	DAMAGED CAUSED (YES / NO):
38	DETAILS OF DAMAGE (PLEASE GIVE AS MUCH INFORMATION AS POSSIBLE):
39	LADDERS SIGHTED (YES / NO):
40	OTHER BOARDING EQUIPMENT SIGHTED (PLEASE GIVE DETAILS):

PART E: FURTHER DETAILS

41	ACTION TAKEN BY MASTER AND CREW:
42	WAS INCIDENT REPORTED TO THE COASTAL AUTHORITY? IF SO TO WHOM?
43	ACTION TAKEN BY THE AUTHORITIES:
44	ANTI PIRACY MEASURES EMPLOYED (PLEASE SPECIFY):
45	WAS PRIVATE SECURITY TEAM EMBARKED (YES / NO): ARMED /UNARMED:
46	NUMBER OF CREW / NATIONALITY:
47	PLEASE **ATTACH** WITH THIS REPORT – **A** BRIEF DESCRIPTION / FULL REPORT / MASTER – CREW STATEMENT OF THE ATTACK / PHOTOGRAPHS TAKEN IF ANY.

ADDRESS: ICC-INTERNATIONAL MARITIME BUREAU
PIRACY REPORTING CENTRE
P.O. BOX 12559
50782 KUALA LUMPUR,
MALAYSIA

CONTACT DETAILS: TEL: 603 2031 0014 (24 HOUR MANNED HELP LINE)
TEL: 603 2078 5763
FAX: 603 2078 5769
E-MAIL: imbkl@icc-ccs.org; / piracy@icc-ccs.org

APPENDIX B: Coding Manual (Piracy Incident Reports)

Actual Date (date)
YYYY-DD-MM

Year (year)
YYYY

Incident Time (intime)
Military - West African Time (WAT) = UTC +1
or (.) for unknown/not specified

Coded Incident Time (timecode)

99=Unknown/Not Stated
1=00:00 to 05:59
2=06:00 t0 11:59
3=12:00 to 17:59
4=18:00 to 23:59

Victimized Vessel Name (shipman)
Free text - all caps – "Unk" if not listed or
unknown

Target Vessel Flag State (flag)
Two-Letter ISO Code (International
Organization for Standardization) – "Unk" if not
listed/unknown

Target Vessel Type (shiptyp)
0=Unknown/Not Stated
1=Oil Products Tanker
2=Other Tanker (Chemical, LNG, LPG, Mix
Chem/Oil)
3=Dry Bulk Cargo/Bulk Carrier
4=Container
5=General Cargo (Vehicles, Reefer, Livestock,
Ro-Ro, etc.)
6=Tug or Barge (including offshore tug)
7=Fishing Vessel/Trawler
8=Passenger, Yacht, Leisure Craft, Ferry
9=Naval Warships/Security Vessels
10=Supply Vessel (Including Offshore
Supply/Anchor Handler)
11=Other (Heavy Equip., Research, Dredge,
Cable Layer, etc.)
12=Floating, Storage & Offloading (FSO-Oil)

Target Vessel Gross Tonnage (groton)
Actual registered gross tonnage - (.) if unknown
or not stated

Coded Target Vessel Gross Tonnage (gton)
*Categories based on Bateman (2010)
99=Unknown/Not Stated

1=>5,000 GRT
2=5,000 to 9,999 GRT
3=10,000 to 20,000 GRT
4=<20,000 GRT

Target Vessel IMO Registration Number (imonum)
Unique vessel IMO Registration Number - N/A
if unknown or not available

Incident Area (area)
0=Unknown/Not Stated
1=Port
2=Inland Waters
3=Territorial (>12 miles)
4=EEZ (12 to 200 miles)
5=High Seas (<200 miles)

Target Vessel Status at Time of Incident (status)
0=Unknown/Not Stated
1=Steaming
2=Berthed
3=Anchored
4=Drifting
5=Bunkering

Committed or Attempted Attack (success)
(Committed incident results in a successful
boarding)
0=Unknown/Not Stated
1=Committed
2=Attempted

Attack Type (atktyp)
* 1,2 for committed - 3,4 for attempted
0=Unknown/Not Stated
1=Hijacked Vessel
2=Boarded Vessel
3=Suspicious Approach
4= Fired Upon

DMS Latitude - Position of Incident (lat)
Degrees, minutes, seconds (DMS format) or (.)
for unknown/not specified

DD Latitude – Position of Incident (latdec)
Decimal degrees (DD format) or (.) for
unknown/not specified

DMS Longitude - Position of Incident (lon)
Degrees, minutes, seconds (DMS format) or
(.) for unknown/not specified

DD Longitude – Position of Incident (londec)
Decimal degrees (DD format) or (.) for
unknown/not specified

Incident Typology (typo)
*Based on Hastings (2012)
1=Robbery
2=Vessel/Cargo Seizures
3=Kidnapping for Ransom
4=Unspecified Incidents/Attempts

Property Stolen – Vessel (lootship)
0=None/Not Stated
1=Cargo
2=Cash
3=Vessel (permanently)
4=Equipment/Property (unspecified type)
5=Equipment (communications)
6-Ship Stores
7=Cash & Equipment
8=Outboard Engine
9=Stores & Equipment/Property
10=4 & 5
11=2 & 5
12= 1 & 2
13= 2 & 6
14= 6 & 8
15= 1 & 6
88=N/A - Attempt Only (unsuccessful boarding)

**Property Stolen – Crew/Passengers
(lootcrew)**
0=None/Not Stated
1=Personal Effects
2=Cash
3=Personal Effects & Cash
88=N/A - Attempt Only (unsuccessful boarding)

Damage to Target Vessel (damage)
0=No/Not Stated
1=Yes

Perpetrator Apprehensions (appreh)
(Including perpetrator arrests and perpetrators
killed)
0=No/Not Stated
1=Yes

Number of Perpetrators (perps)
0=Unknown/Not Stated
1= 1-4
2= 5-10
3= <10

Perpetrator Method of Approach (approach)
0=Unknown/Not Stated
1=Speed Boat/Skiff
2=Large Vessel/Ship
3=From Land (Berth/Dock/Terminal/Shore)
4=Dinghy/Raft/Canoe/Pirogue
5= Inflatable/FRP
6=Tug
7=Fishing Vessel
8= Vessel - unspecified type
9=Multiple - Fishing Vessel & Speedboat/Skiff
10=Multiple - Speedboat/Skiff & Unspecified
Vessel
11=Multiple - Supply Vessel & Skiff/Speed
Boat
12=Multiple - Speed Boat/Skiff & Tug

**Approach by Multiple Pirate Vessels
(mulves)**
0=Unknown/Not Stated
1=Yes
2=No
88=N/A – Approach from Land
(Berth/Dock/Terminal/Shore)

**Approach by Multiple Pirate Vessels – Actual
Number (mulves)**
(Actual number of vessels)
0=Approach by multiple vessels but # not stated
88=N/A – Vessel only approached by 1 vessel
or perpetrators boarded from land

**Method of Access/Attempt Access to Ship
(accship)**
0=Unknown/Not Stated
1=Ladder
2=Rope/Grapple
3=Other
4=Mooring Line
5=Hawse Pipe/Anchor Chain
6=Stern Ramp
7=Pole
8=Multiple - Pole & Rope/Grapple
9=Rail (Deck to Deck)
10=Multiple - Ladder & Rope/Grapple
11=Rudder Trunk

Mother Ship Used by Pirates (mother)
0=No/Not Stated
1=Yes

**Hijacked Vessel Used as Mother Ship by
Pirates (usmv)**
0=No/Not Stated
1=Yes

Perpetrators Armed (weap)
0=No/Not Stated
1=Yes

Perpetrators Armed – Weapon Types (weaptyp)
0=None/Not Stated
1=Firearms
2=Knives/Bladed Instruments
3=RPGs
4=Explosives
5=Multiple - Firearms & Knives/Bladed Instruments
6=Multiple - Firearms & Explosives
7=Blunt Instruments
8=Multiple – Firearms & Blunt Instruments & Knives
9=Multiple – Firearms & RPGs & Knives
10=Multiple - Firearms & Blunt Instruments
11=Multiple – Firearms & Blunt Instruments & Knives & Axes

Weapons Discharged by Pirates During Incident (shotfire)
0=No/Not Stated
1=Yes

Injuries Resulting from Incident (injur)
0=No/Not Stated
1=Yes

Actual Number of Injured Persons (injurno)
Actual number of injured parties or "0" if none or not stated

Deaths Resulting from Incident (death)
0=No/Not Stated
1=Yes

Actual Number of Dead (deathno)
Actual number of dead or "0" if none or not stated

Evidence of Militant Group Involvement (militant)
0=No/Not Stated
1=Yes

Corruption Mentioned (corrupt)
0=No/Not Stated
1=Yes

Kidnapping Victims – Actual Number (kidnapno)
Actual number of kidnapping victims or "0" if none or not stated

Ransom Mentioned (ransom)
0=No/Not Stated
1=Yes

Oil Cargo Theft Involved (illbunk)
(Includes petty siphoning and large-scale oil cargo thefts)
0=No/Not Stated
1=Yes

Appendix C: Descriptive Statistics (Piracy Incident Reports)

VARIABLES	*n*	%
Incident Characteristics		
Incident Time		
00:00-05:59	115	28.33
06:00-11:59	83	20.44
12:00-17:59	35	8.62
18:00-23:59	88	21.67
Unknown	85	20.94
Incidents Per Year		
2009	41	-
2010	24	-
2011	18	-
2012	31	-
2013	55	-
2014	39	-
2015	22	-
2016	57	-
2017	58	-
2018	61	-
Total	*406*	-
Victim Ship Type		
Oil Tanker	66	16.25
Tanker – Other (e.g., Chemical, LNG, LPG)	122	30.05
Bulk Carrier	39	9.61
Container	27	6.65
General Cargo (e.g., Vehicles, Reefer, Livestock, Ro-Ro)	36	8.87
Tug/Barge	14	3.45
Fishing Vessel/Trawler	9	2.22
Passenger Vessel/Ferry	10	2.46
Naval/Security Vessel	1	0.25
Offshore Supply	45	11.08
Floating, Storage & Offloading (FSO-Oil)	2	0.49
Other (e.g., Heavy Equip., Research, Dredge, Cable Layer, etc.)	7	1.72
Unknown/Not Stated	28	6.90
Vessel Size (Registered Gross Tonnage)		
>5,000 GRT	73	17.98
5,000 to 9,999 GRT	54	13.30
10,000 to 20,000 GRT	39	9.61
<20,000 GRT	141	34.73
Unknown/Not Stated	99	24.38
Incident Location		
Port	29	7.14
Inland Waterways	18	4.43
Territorial Seas (>12 miles)	101	24.88
Exclusive Economic Zone (12 to 200 miles)	254	62.56

VARIABLES	*n*	%
High Seas (<200 miles)	2	0.49
Unknown/Not Stated	2	0.49
Status of Vessel When Attacked		
Steaming	208	51.23
Berthed	20	4.93
Anchored	82	20.20
Drifting	22	5.42
Unknown/Not Stated	74	18.23
Incident Success		
Successful Boarding (Committed)	229	56.40
Attempt	159	39.16
Unknown	18	4.44
Incident Typology (Hastings)		
Robbery	111	27.34
Kidnapping for Ransom	80	19.70
Vessel/Cargo Seizure	5	1.23
Attempts/Unspecified Type	210	51.73
Number of Perpetrators		
1 to 4	59	14.53
5 to 10	137	33.74
<10	32	7.88
Unknown/Not Stated	178	43.84
Perpetrator Approach Method		
Speedboat/Skiff	169	41.63
Boarded Form Land (e.g., Dock, Terminal, etc.)	2	0.49
Inflatable Vessel/RFP	2	0.49
Tug	1	0.25
Fishing Vessel	4	0.99
Vessel (Unspecified Type)	210	51.72
Multiple Types – Fishing Vessel & Speedboat/Skiff	1	0.25
Multiple Types – Vessel (Unspecified Type) & Speedboat/Skiff	1	0.25
Multiple Types – Supply Vessel & Speedboat/Skiff	1	0.25
Multiple Types – Tug & Speedboat/Skiff	1	0.25
Unknown/Not Stated	14	3.45
Attack Launched from Mother Vessel		
Yes	17	4.19
No/Not Stated	389	95.81
Perpetrators Armed at Time of Incident		
Yes	258	63.55
No/Not Stated	148	36.45

VARIABLES	*n*	%
Perpetrator Weapon Types		
Firearms	195	75.58
Knives/Blades	7	2.71
Rocket Propelled Grenades (RPGs)	1	0.39
Explosives (Other)	1	0.39
Combination – Firearms & Knives/Blades	7	2.71
Combination – Firearms & Explosives	4	1.55
Combination – Firearms & Knives/Blades & Blunt Instruments	4	1.55
Combination – Firearms & RPGs & Knives/Blades	1	0.39
Combination – Firearms & Blunt Instruments & Knives & Axes	2	0.79
Unspecified Weapon-type	36	13.94
Militant Involvement Indicators		
Yes	8	1.97
No/Not Stated	398	98.3
Corruption Indicators		
Yes	6	1.50
No/Not Stated	400	98.5
Oil Thefts & Attempts		
Yes	20	4.93
No/Not Stated	386	95.07
Violence & Consequences to Crew		
Weapons Discharged by Perpetrators During Incident		
Yes	149	36.70
No/Not Stated	257	63.30
Incidents Resulting in Injuries		
Yes	53	13.05
No/Not Stated	353	86.95
Number of Persons Injured Per Year		
2009	44	-
2010	19	-
2011	34	-
2012	12	-
2013	4	-
2014	1	-
2015	3	-
2016	3	-
2017	1	-
2018	4	-
Total	*125*	-
Incidents Resulting in Deaths		
Yes	17	4.19
No/Not Stated	389	95.81

VARIABLES	*n*	%
Number of Deaths Per Year		
2009	2	-
2010	0	-
2011	0	-
2012	5	-
2013	21	-
2014	6	-
2015	4	-
2016	8	-
2017	0	-
2018	0	-
Total	*46*	-
Incidents Resulting in Kidnappings		
Yes	80	19.70
No/Not Stated	326	80.30
Number of Persons Kidnapped Per Year		
2009	21	-
2010	17	-
2011	3	-
2012	31	-
2013	43	-
2014	20	-
2015	35	-
2016	44	-
2017	81	-
2018	40	-
Total	*335*	
Incidents Resulting in Theft of Goods from Vessel		
Yes	83	20.44
No/Not Stated	323	79.56
Types of Goods Stolen from Vessel		
Cargo	8	9.64
Ship's Cash	11	13.25
Equipment/Property (Unspecified)	19	22.89
Communications Equipment	2	2.41
Ship's Stores	13	15.66
Outboard Engines	2	2.41
Multiple (Ship's Cash & Unspecified Equipment)	18	21.69
Multiple (Ship's Stores & Unspecified Equipment)	5	6.02
Multiple (Unspecified Equipment & Communications Equip.)	1	1.20
Multiple (Ship's Cash & Communications Equip.)	1	1.20
Multiple (Ship's Cash & Ship's Stores)	1	1.20
Multiple (Ship's Stores & Outboard Engine)	1	1.20
Multiple (Cargo & Ship's Stores)	1	1.20

VARIABLES	*n*	*%*
Incidents Resulting in Theft of Goods from Crew		
Yes	83	20.44
No/Not Stated	323	79.56
Types of Goods Stolen from Crew		
Personal Effects	53	63.86
Cash	2	2.41
Cash & Personal Effects	28	33.73
Incidents Resulting in Damage to Vessel		
Yes	88	21.67
No/Not Stated	318	78.33

Appendix D: Spatial Distributions of Piracy Incidents by Type (Source: created by author in QGIS)

Figure1: Distribution of Robberies

Figure 2: Distribution of Vessel/Cargo Seizures

Figure 3: Distribution of Kidnappings for Ransom

Figure 4: Distributions of Unspecified Attacks/Attempts

Appendix E: Possible harms and bearers in different phases of piracy and its accompanying and enabled activities

	Piracy (Operational Phases)			Accompanying Activities					Enabled Activities		Bearers
	1. Pre-Attack[i]	2. Attack[ii]	3. Post-Attack[iii]	Violence/ Threats	Corruption	Property Deprivation	Property Damage	Money Laundering	Rec. Stolen Goods	Illicit Refining	
HARMS TO INDIVIDUALS, specifically to their:											
Functional integrity											
Loss of life	n/a	**X**	**X**	X (2,3)	n/a	n/a	n/a	n/a	n/a	n/a	Seafarers, passengers, security personnel and perpetrators (including pirates, enclave/hide-out guards & personnel)
Other physical and psychological	**X**	**X**	**X**	X (1,2,3)	n/a	X (2)	X (2)	n/a	n/a	n/a	Seafarers, passengers, security personnel, relations of those victimized and perpetrators (including pirates, enclave/hide-out guards & personnel)
Material interests	n/a	**X**	**X**	X (2,3)	n/a	X (2)	X (2)	n/a	n/a	n/a	Ancillary to functional harms (health) - Seafarers, passengers and security personnel (and relations of those victimized)
Reputation	n/a	**X**	**X**	X (2,3)	n/a	n/a	n/a	n/a	n/a	n/a	Seafarers, passengers, security personnel and perpetrators (including pirates, enclave/hide-out guards & personnel) i.e., if targeted by use or threat of violence
Privacy and autonomy	n/a	**X**	**X**	X (2,3)	n/a	X (2)	n/a	n/a	n/a	n/a	Seafarers, passengers and security personnel
HARMS TO PRIVATE-SECTOR ENTITIES, specifically to their:											
Functional integrity	**X**	**X**	**X**	X (2,3)	X (1,2,3)	X (2)	X (2)	n/a	n/a	n/a	Shipping and trade-related industries, oil & gas industry, fishing operations, private security providers and firms whom own cargo (e.g., if corrupt officials/employees misuse assets)
Material interests	**X**	**X**	**X**	X (2/3)	X (1,2,3)	X (2)	X (2)	n/a	n/a	X (3)	Shipping and trade-related industries, oil & gas industry, fishing operations, private security providers and firms whom own cargo
Reputation	**X**	**X**	**X**	X (2,3)	X (1,2,3)	X (2)	X (2)	n/a	n/a	n/a	Shipping and trade-related industries, oil & gas industry, fishing operations, private security providers and firms whom own cargo (e.g., if corrupt officials/employees misuse assets, even if businesses are unaware of exploitation)

											Description
Privacy and autonomy	X	X	X	n/a	X (1)	n/a	n/a	n/a	n/a	n/a	Shipping and trade-related industries, oil & gas industry, fishing operations, private security providers and firms whom own cargo (e.g., if corrupt employees misuse assets)
HARMS TO GOVERNMENT, specifically to its:											
Functional integrity	X	X	X	X (2,3)	X (1,2,3)	X(2)	n/a	n/a	X (3)	X (3)	Government agencies including oil & gas regulatory bodies, port authorities, politicians, policy and military bodies, i.e., if officials/representatives engage in corrupt practices, incl. neglect of duties
Material interests	X	X	X	n/a	X (1,3)	X (2)	X (2)	X (3)	n/a	X (3)	Government agencies including oil & gas regulatory bodies, port authorities, politicians, policy and military bodies, e.g., wages associated with neglect of duties, loss of revenues from sales of illicit oil
Reputation	X	X	X	X (2,3)	X (1,2,3)	X (2)	X (2)	X (3)	X (3)	X (3)	Government agencies including oil & gas regulatory bodies, port authorities, politicians, policy and military bodies, i.e., if officials/representatives engage in corrupt practices, incl. neglect of duties. Government writ large, if it cannot enforce its laws
Privacy and autonomy	X	n/a	n/a	n/a	X (1)	n/a	n/a	n/a	n/a	n/a	Government agencies, i.e., if officials/representatives engage in corrupt practices, incl. neglect of duties
HARMS TO THE ENVIRONMENT, specifically to its:											
Functional integrity	n/a	X	X	X (2,3)	n/a	X (2,3)	X (2)	n/a	n/a	X (3)	Physical environment, e.g., if an unmanned tanker runs aground or collides with another vessel causing a spill or if stolen oil ends up in illicit refineries where waste products are directly released into the environment. Social environment, e.g., if persistent piracy prevents fishermen from artisanal fishing communities from plying their trade resulting in community-wide consequences

Notes: X = applicable; n/a= not applicable; 1 = Pre-attack Phase; 2 = Attack Phase; 3 = Post-attack Phase = Phases

Source: Adapted from Paoli, et al., 2013

[i] This operational phase is involved in all types of piracy including kidnapping for ransom, ship/cargo seizures, robberies, attempts and unspecified attacks.

[ii] This operational phase is involved in all types of piracy including kidnapping for ransom, ship/cargo seizures, robberies, attempts and unspecified attacks.

[iii] This operational phase is involved only in kidnappings for ransom, ship/cargo seizures and robberies. An attempt does not include a post-attack phase since the boarding was unsuccessful. Although an unspecified attack might result in a boarding, due to the limited information available, determining post-attack consequences is not possible.

Appendix F: Evaluation of the Harms of Nigerian-based Piracy

	Severity	Incidence of harms in relation to activity[a]	Overall incidence of harm and activity[b]	Bearers	Priority	Activity
Harms to individuals specifically to their:						
Functional integrity						
Loss of life	Catastrophic	Rarely	Rarely	Seafarers (all types), security force personnel, pirates	M_i	Violence (murder or manslaughter)
Other physical and psychological	Grave	Rarely	Rarely	Seafarers (all types), security force personnel	M/L_i	Violence (mayhem assaults and batteries) - causing permanently disabling injuries
	Grave	Rarely	Rarely	Vessel passengers	M/L_i	Violence (sexual assaults - rape)
	Serious	Occasionally	Rarely	Seafarers (all types), vessel passengers, victims' family	L_i	Violence (kidnappings) - sanitary conditions during period of captivity leading to illnesses, assaults and maltreatment, psychological damage to seafarers and family, etc.
	Serious	Rarely	Rarely	Seafarers (all types), vessel passengers, security force personnel	L_i	Violence (major assaults and batteries) - causing serious injuries but not permanently disabling - gunshot wounds, severe beatings, blows from blunt objects, often requiring hospitalization, etc.
	Moderate to Marginal	Rarely	Rarely	Seafarers (all types), vessel passengers	L_i to V/L_i	Violence (limited and petty assaults and batteries) - resulting in negligible injuries or those warranting outpatient medical care

Only psychological	Serious	Persistently	Rarely	Seafarers (all types), vessel passengers, security force personnel, seafarers' family	L_i	Threats of Violence (assaults involving verbal or psychological abuse) - resulting from vessels being fired upon, verbal threats/intimidation, the presence of weapons
Material interest	Grave	Persistently	Rarely	Seafarers - specifically artisanal fishermen in the Niger Delta	M/L_i	Deprivation of Property (theft/robbery of outboard engines, small vessels, personal effects and cash)
	Serious	Occasionally	Rarely	Seafarers - specifically commercial fishermen	L_i	Violence and threats (physical and psychological) - causing them to restrict their activities or leave the industry altogether
	Moderate	Rarely	Rarely	Seafarers - specifically merchant mariners	L_i	Violence and threats (physical and psychological) - causing them to restrict their activities or leave the industry altogether
	Marginal	Occasionally	Rarely	Seafarers (merchant mariners), vessel passengers,	V/L_i	Deprivation of Property (theft/robbery of personal effects and cash)
Privacy	Moderate	Persistently	Rarely	Seafarers (all types), vessel passengers	L_i	Violence (kidnapping) - where victims are held for an extended period in captivity
	Marginal	Occasionally	Rarely	Seafarers (all types), vessel passengers	V/L_i	Violence (brief hostage-takings) -periods where crew are temporarily held hostage during an attack; crew quarters being entered and ransacked by pirates

Harms to private-sector entities, specifically to their:

Functional integrity

	Grave	Persistently	Rarely	Commercial and artisanal fishing sectors	M/L_p	Violence (all forms) specifically impacting the commercial and artisanal fishing sectors
	Moderate	Persistently	Rarely	Oil and gas sector	L_p	Violence (all forms) specifically impacting the oil and gas sector
	Marginal	Rarely	Rarely	Maritime sector excluding the oil and gas and fishing sectors	V/L_p	Violence (all forms) to all businesses including shipping firms, vessel owners, cargo owners and other maritime businesses
Material interest	Serious	Rarely	Rarely	Shipowners	L_p	Major Property Damage (to vessels) specifically impacting the shipping industry
	Moderate	Occasionally	Rarely	Shipowners	L_p	Violence (kidnappings) - ransom payments, captivity pay and other expenses specifically impacting the shipping industry
	Marginal	Occasionally	Rarely	Shipowners, cargo owners	V/L_p	Deprivation of Property (theft/robbery of ship property and stores; vessel seizures) specifically impacting the shipping industry and cargo owners
	Marginal	Rarely	Rarely	Shipowners, cargo owners	V/L_p	Deprivation of Property (theft/seizure of cargo including petty siphoning of oil cargos) specifically impacting the shipping industry and cargo owners
	Marginal	Occasionally	Rarely	Shipowners	V/L_p	Minor Property Damage (to vessels and vessel equipment) specifically impacting the shipping industry

Harms to government, specifically to its:

Functional integrity	Moderate	Persistently	Rarely	Government of Nigeria	L_g	Corruption (grand)
	Marginal	Persistently	Rarely	Government of Nigeria	V/L_g	Corruption (petty)

Material interest	Marginal	Rarely	Rarely	Navy, security forces	V/L$_g$	Property Deprivation (attacks on government security vessels resulting in theft/robbery)
	Marginal	Rarely	Rarely	Government of Nigeria	V/L$_g$	Property Deprivation - specifically the loss of tax revenues resulting from oil, stolen during cargo thefts and petty siphoning, being sold on the "black market"
Reputation	Moderate	Persistently	Rarely	Government of Nigeria	L$_g$	Corruption (grand)
	Marginal	Continuously	Rarely	Government of Nigeria	V/L$_g$	All primary, accompanying and enabled activities (i.e., inability to enforce laws; inability to prosecute perpetrators; failure to implement SUA treaty or domestic anti-piracy legislation which has led to the spread of piracy throughout the region)
	Marginal	Persistently	Rarely	Government of Nigeria	V/L$_g$	Corruption (petty)
Harms to environment, specifically to its:						
Functional integrity						
	Grave	Persistently	Rarely	Fishing communities in the Niger Delta	M/L$_e$	Violence (all forms including threats) specifically impacting the social environment in rural artisanal fishing settlements in the Niger Delta

[a]Rating of the within activity incidence of harms.

[b]Rating based on the overall assessment of the incidence of Nigerian-based piracy as "rarely".

Notes: severity ratings for assaults and batteries based on Paoli & Greenfield (n.d.).

Source: Adapted from Greenfield, et al., 2016, pp. 168-170.