Qualification of port state control inspectors in Nigeria: a critical analysis

Faith Chibuoge Azubike

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QUALIFICATION OF PORT STATE CONTROL INSPECTORS IN NIGERIA: A CRITICAL ANALYSIS

by

FAITH CHIBUOGE AZUBIKE
(Nigeria)

A dissertation submitted to the World Maritime University in partial fulfilment of the requirements for the award of the degree of

MASTER OF SCIENCE in MARITIME AFFAIRS (MARITIME LAW AND POLICY)

2021
Declaration

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

(Signature):........................................

(Date): ................................................

20 September, 2021

Supervised by: Maximo Q. Mejia Jr., PhD

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                     Director, PhD Program
                     World Maritime University
Acknowledgements

First and foremost, I would like to thank the Lord for his grace and strength to experience a hitch free academic year throughout this academic pursuit.

I would like to express my deepest appreciation to my supervisor Maximo Q. Mejia Jr., PhD, for his insightful supervision, tremendous support, guidance and continuous patience through this academic research. Your insightful feedback pushed me to hone my thinking and transformed my work to a higher level.

I would also like to extend my deepest gratitude to NIMASA for giving me this opportunity to undertake this journey in the Worlds’ Centre of Maritime Excellence (WMU), this was a wonderful experience that has broadened my horizon and given me a pedestal to the maritime world.

Special thanks to my husband who has always stood by me-my rock, supporting all my dreams and aspirations, guiding me and loving me always. My son - my little prince, my handsome bobo who is always in my corner-cheering me on, in his words, “Mummy it’s time to go back to your books.” I love you, you guys are my world!

My heartfelt appreciation goes to my parents, my siblings and friends, whose encouragement, support and most of all prayers kept me going.

Many thanks to all of the members of staff in WMU for their kind support during my studies. Also, I extend my thanks to all my colleagues at NIMASA and WMU for their continuous encouragement and support. Finally, to all my WMU friends with whom I shared my high and low moments, I would always cherish those memories.
Abstract

Degree: Master of Science

The success of every port state control (PSC) regime is largely dependent on the competence of PSC inspectors. One of the main challenges faced by port state control officers (PSCO) is the continuous addition of further higher qualification requirements. Also, the complexity of port State inspection and the different tasks to be conducted by PSCOs require a great deal of capacity building and this capacity building is cost intensive, therefore, developing countries oftentimes are unable to afford these trainings. The differences in States economic development position determines their affordability to train the inspectors individually; this is clearly an issue for PSC and its implementation. The objective of this study is to analyze PSCOs qualification process in Nigeria and to assess its impact on the efficiency of PSC inspections. This thesis employed a qualitative research method, questionnaires and interviews were conducted to obtain relevant data. The researcher found that there is need for improvement in the qualification process because if there is no improvement then the efficiency in PSC inspections will be severely affected thereby further affecting maritime safety and the Nigerian marine environment.

KEYWORDS: Port state control, port state control officers, Abuja MoU, qualification, training and inspection.
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<th>Full Form</th>
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<tbody>
<tr>
<td>APMIAS</td>
<td>Asia-Pacific Maritime Information and Advisory Services</td>
</tr>
<tr>
<td>ARPA</td>
<td>Automatic Radar Plotting Aid</td>
</tr>
<tr>
<td>CBT</td>
<td>Computer Based Training</td>
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<td>CoC</td>
<td>Certificate of Competency</td>
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<td>COLREG</td>
<td>Convention on the International Regulations for Preventing Collisions at Sea</td>
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<tr>
<td>ECDIS</td>
<td>Electronic Chart Display and Information System</td>
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<tr>
<td>FAO</td>
<td>Food and Agricultural Organization</td>
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<td>GISIS</td>
<td>Global Integrated Shipping Information System</td>
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<td>GMDSS</td>
<td>Global Maritime Distress and Safety System</td>
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<tr>
<td>HMD</td>
<td>Head-Mounted Display</td>
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<tr>
<td>ILO</td>
<td>International Labour Organization</td>
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<td>IMO</td>
<td>International Maritime Organization</td>
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<tr>
<td>IMSSEEA</td>
<td>International Maritime Safety Security and Environment Academy</td>
</tr>
<tr>
<td>LOADLINES</td>
<td>International Convention on Load Lines, 1996, as amended</td>
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<td>MARAD</td>
<td>Maritime Administration</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships, 1973, as amended</td>
</tr>
<tr>
<td>MLC</td>
<td>Maritime Labour Convention, 2006</td>
</tr>
<tr>
<td>MoU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>MOWCA</td>
<td>Maritime Organization of West and Central Africa</td>
</tr>
<tr>
<td>MSA</td>
<td>Merchant Shipping Act, 2007 (Nigeria)</td>
</tr>
<tr>
<td>NIMASA</td>
<td>Nigerian Maritime Administration and Safety Agency</td>
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<tr>
<td>PSC</td>
<td>Port State Control</td>
</tr>
<tr>
<td>PSCO</td>
<td>Port State Control Officer</td>
</tr>
<tr>
<td>REC</td>
<td>Research Ethics Committee</td>
</tr>
<tr>
<td>RO</td>
<td>Recognized Organization</td>
</tr>
<tr>
<td>SOLAS</td>
<td>International Convention for the Safety of Life at Sea, 1974, as amended</td>
</tr>
<tr>
<td>SOPEP</td>
<td>Shipboard Oil Pollution Emergency Plan</td>
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</table>
TCC  Technical Cooperation Committee (IMO)
TONNAGE  International Convention on Tonnage Measurement of Ships, 1969
UN  United Nations
USCG  United States Coast Guard
US-NOAA  United States National Oceanic Atmospheric Administration
WMU  World Maritime University
1. Chapter One: Introduction

1.1. Background

Historically, the shipping industry has been the main form of transportation for international. It is the safest, most efficient, economic and environmental friendly way to transport raw material, semi-finished goods and finished goods around the globe (Fayle, 2005; Mejia 2020). Maritime transport is the backbone that links global supply chains; supports trade, globalization, and also enables the participation in global value chain (Yan et al., 2021). UK DoT, (2021) released a report at the end of 2020 indicating that there were around 62,100 vessels globally and this accounts for 2033 million total dead weight tonnage (DWT) in the world.

Although sea transport is considered the safest, most efficient and economical way for international trade, for many decades, the global safety of ships has been a concern for the maritime industry and the world as a whole. Recently, Lloyd’s list reported 322 incidents that took place in the maritime industry from 2017 to 2020; this list was compiled by IMO’s Global Integrated Shipping Information System (GISIS) (Lloydslist, 2021). Furthermore, the IMO safety and shipping review 2021, reveals that the international shipping industry has lost over 876 ships in the past 10 years. This review remains the prevalent publication on risk of safety in the maritime domain, despite the fact that in 2020 the numbers reported are less than those reported in 2019, the safety of life at sea, ships, and environment remain a serious concern for the industry (AGCS/IMO, 2021).

The International Maritime Organization (IMO) as a United Nations (UN) is a body that is responsible for the safety and security as well as prevention of environmental pollution by ships; IMO is responsible for the regulation of the shipping industry (Tran & Nguyen, 2020). However, stakeholders in and outside the shipping industry consider the regulator to be reactive rather than proactive in the discharge of this mandate. Oftentimes it takes an incident for the IMO to either develop or adopt certain legislations or conventions. One of the many demonstrative references is the 1978 Liberian flagged oil tanker Amoco Cadiz that ran aground off the French coast and spilled over 220,000 tons of oil into the sea destroying the marine ecosystem, its seabirds and various marine species leading to a public an outcry (Cariou et al., 2008). The investigation conducted by
the United States National Oceanic Atmospheric Administration (US-NOAA), as stated by Hess, (1978) revealed that a breakdown of the steering gear of the tanker, improperly trained seafarers, technical condition of the oil tanker, lack of safety management on board the ship were among the major causes of the accident (Kara & Oksas, 2016). Only then did the IMO accelerate the implementation of the port state control (PSC). According to IMO, “PSC is the inspection of foreign ships in national ports to verify that the condition of the ship and its equipment comply with the requirements of international regulations and that the ship is manned and operated in compliance with these rules” (IMO, 2020). Another PSC related incident is the Erika, an incident that occurred as a result of a heavy storm which broke the vessel into two and she sank. This incident lead to calls by various stakeholders in the shipping industry for IMO to tighten the effectiveness of PSC, however, it took IMO till the occurrence of the 2002 heavy fuel spillage’ by M.V Prestige, a single hulled vessel to accelerated the phasing out of vessels with single hull (Bipul & Varveris, 2019).

The existing regime of PSC traces its origins from a memorandum between some maritime authorities in Western Europe in the Hague in 1978. The memorandum dealt mostly with enforcement of shipboard working and living conditions of seafarers as required by ILO Convention no. 147 (Cariou, et al., 2008). Also, in 1982, 14 European countries signed the Memorandum of Understanding (MoU) on PSC in France, this memorandum entered into operation in the same year, official acceptance of a memorandum confers the right on a country to inspect foreign ships calling at her ports. Paris MoU was the first regional PSC. As a result of the success of the Paris MoU, there was also the formation of 8 other regional MoUs including the United States which constitutes its own PSC region, (Ozcayr, 2008).

The PSC regime has had an effect in implementing relevant Conventions in promoting the value level of shipping and the national law determines the extent of application of the PSC in a specific country, which means the requirement of a PSC in a particular State, is usually dependent on the ratification and adoption of international instruments by the port State. Hence, in a regional MoU, it is important that all member states on the MoU are briefed on the importance of having uniform treatment towards PSC regime by ratifying the international conventions developed by the IMO and International Labour Organization (ILO) (Bang & Jang, 2012).
The international instruments which provide for PSC are all covered by the IMO and ILO and the essence of these instruments are to protect the marine environment from pollution, improve the safety of ships to and to ensure that seafarers training, health and accommodation on board ships is up to standard (Abuja MoU Website). The Conventions are but not limited to the United Nations Convention on Law of the Sea 1982 (UNCLOS), International Convention on Load Lines, 1966, as amended (LOAD LINES 66), the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS 74/78), International Convention Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW 78), International Convention for the Prevention of Pollution from Ships, 1973, as amended (MARPOL 73/78), International Convention on Tonnage and Measurement of Ships 1969 (TONNAGE 69), Convention on the International Regulations for Preventing Collisions at Sea 1972 (COLREG 72) and Maritime Labour Convention 2006 (MLC) e.t.c (Cariou, Mejia Jr, et al., 2008).

Flowing from the resolution of the IMO’s Resolution A 682(17) of 1991 which called for a regional framework which will deal with the inspection of ships at ports, some States in the West and Central African region at a ministerial conference that was held in Abuja on the 22nd of October 1999 signed an MoU which was called the Abuja MoU with the ultimate aim of eliminating the operation of substandard ships in the region. In this context, IMO Resolution A11138(31) defined substandard ship as “A ship whose hull, machinery, equipment or operational safety is substantially below the standards required by the relevant convention or whose crew is not in conformity with the safe manning document.” The elimination of substandard ships will ensure maritime safety, ensure better living and working conditions for its seafarers and facilitate regional cooperation amongst member States (Abuja MoU, 2018). The West and Central Africa region is made up of 22 States, 18 states make up the membership of the Abuja MoU for which Nigeria is a part of. Abuja MoU has several observers including the 9 regional MoUs on PSC.

It is clear that the implementation of the Abuja MoU is reflected in the great strides made by its member States in ensuring that the region is a safe maritime domain. In an evaluation report on the performance of the Abuja MoU in 2018 evaluating its performance for the period between 2010 and 2018 revealed great improvements by member States in getting rid of substandard ships in their waters, there have also been improvements in the welfare of seafarers and a radical decrease in marine pollution in the region (Abuja MoU, 2018).
It was argued that some States are unable to develop their own PSC due to economic development levels, PSC standards and PSCO capacity, which differ from country to country, due to unclear qualification process of PSCOs and a standard global PSCOs qualification process (Zhang, 2016).

1.2. Problem statement

According to Zhou (2006), one of the main challenges faced by port state control officers (PSCO) is the continuous addition of further higher qualification requirements. In addition, the complexity of port state inspection and the different tasks to be conducted by PSCOs require a great deal of capacity building and this capacity building is cost intensive therefore, developing countries oftentimes are unable to afford these trainings. The differences in States economic development position determines their affordability to train the inspectors individually, this is clearly an issue for PSC and its implementation.

The ultimate aim of the Abuja MoU is to promote uniformity and collaboration of control. States are obliged to report and share information of their actions, however, the deficiency of reliable networks does not allow for the effective implementation of this aim. All the States in this region are developing States and the level of economic development is not uniform, hence this has caused the PSC inspectors of some of these States to have a looser net, and fail to detect substandard ships in their ports. Also these States lack regional co-operation hence, lack capacity for developing a good PSC regime. (Zhang, 2016).

Many States encounter PSC implementation challenges due to the lack of common standard qualification procedures among different States in the Abuja MoU region, there are different prerequisite conditions set among different States for the recruitment, retention, training and certification of PSCOs and these are reflected on the implementation of the PSC. Since the inception of PSC in 1978, the global maritime communities have been faced with different challenges regarding the standard PSC inspection qualification process; there has been the issue of unclear qualification processes for PSCOs and in some cases, insufficient training and knowledge to carry out the PSC inspection processes.
The success of every PSC regime is largely dependent on the competence of PSC inspectors, the effectiveness of PSC is further achieved by an effective regional inspection regime with a harmonized control procedure and information sharing system among member States, thereby making it difficult for substandard ships to get away from the region’s safety net.

PSCOs in the Abuja MoU region in some cases are unable to completely carry out inspection due to lack of competence and knowledge on what to inspect and what not to inspect and a lack of grasp of the relevant regulations, which the ships are expected to comply with. The consequences of this lack of competence results in improper inspection, which can lead to marine pollution, maritime safety and safety issues for seafarers.

This study will seek to examine qualification processes of PSCOs in Nigeria while analyzing its potential impact on PSC inspections, as well as explore possible measures for improvement.

1.3. Aims and objectives

The aim is to assess the process of training and qualification of the PSCOs and its relevance with the applicable international standards.

The objective of this study is to analyze the PSCOs qualification process in Nigeria and to assess its impact on the efficiency of PSC inspections.

1.4. Research questions

1. What is the current process of qualification of PSC Inspectors in Nigeria?
2. How does the qualification of PSCO affect the efficiency of PSC inspections?
3. How can the Nigerian Maritime Administration and Safety Agency (NIMASA) improve the current PSC inspector recruitment and qualification process?

1.5. Significance of the study

A more professional and qualified corps of PSCOs will strengthen Nigeria’s PSC inspection regime and thereby leading to further mitigation and prevention of accidents and oil spills in the country’s ports, harbours, waterways, coastal areas, and other maritime zones.
The study seeks to support the decision making of the competent authority in Nigeria in order to optimize training of PSCOs, so that they can perform better when carrying out their duties.

1.6. **Dissertation structure**

This dissertation is structured into five chapters, in chapter two emphasis will be laid on the literature review of PSC and details related to it. Chapter 3 will describe the Research method and data collection. Chapter 4 is the results of the findings and data analysis of the research and chapter 5 will conclude the research and provide recommendations.
2. Chapter Two: Literature review

2.1. History and development of port state control

The existing regime of PSC traces its origins after some major accidents took place that caused serious damage to the marine environment. Some of the major incidents are, the 1966, *Heraklion* accident that left 234 people dead off the Greece coast (Papanikolaou et al., 2014), the *Torrey Canyon* oil spill incident which occurred in the 1967 off the coast of England spilling over 120,000 tons of crude oil, followed by another incident of the grounding and explosion of *Urquiola* in 1976 off the coast of Spain, spilling over 100,000 tons of Persian Gulf crude oil (Prabowo & Bae, 2019).

Due to these accidents, an MoU was signed between eight north sea States in the Hague in 1978 however, as the memorandum was about to enter into effect in March 1978, a serious maritime accident then occurred (Cariou et al., 2008), the Liberian flagged oil tanker *Amoco Cadiz* that ran aground off the French coast, over 220,000 tons of oil spilled into the sea destroying the marine ecosystem seabirds and various species leading to a public outcry (Cariou, et al., 2008). Upon investigation, it was discovered that the incident was caused by a breakdown of the steering gear of the tanker, the seafarers were not properly trained, technical condition of the oil tanker and lack of safety management on board the ship (Kara & Oksas, 2016).

In further response to these incidents, some countries decided to put mechanism in place to prevent foreign vessels that lacks flag state control from polluting the sea, a number of countries in Europe made an agreement on the onboard vessel labor conditions audits to ensure compliance with relevant international conventions (ILO 147). According to Article 94 of UNCLOS (Duties of flag state), It is the responsibility of flag state to ensure that ships that are flying their flags at all times comply with the provisions of the conventions, however, PSC was established as a reaction to the failure of flag states in carrying out these obligations (Graziano, et al., 2018).

In 1982, fourteen European countries established PSC through an MoU, which is referred to as Paris MoU, Ozcayr (2009) stated that Paris MoU mainly dealt with enforcement of shipboard working and living conditions of seafarers as required by ILO Convention no. 147 (Fotteler et al., 2020). As a result of the success of Paris MoU, 8 other MoUs emerged including the United States which constitutes its own PSC regime (Yang et al., 2020).
IMO Resolution A.682(17) adopted on the 6th of November 1991 (Regional cooperation in the control of ships and discharges) encouraged the regional agreements conclusion. Additionally, the essence of regional cooperation by the IMO is to improve the efficiency of inspection, to avoid repetitive inspection of vessels, to avoid unduly delays of ships and to avoid competition among states in the same region.

2.2. Port state control

PSC is one of the major prerogatives given to coastal states by the international instruments that govern the maritime domain (Ventura, 2020). The implementation of that responsibility is complex thus requiring well-trained officers to efficiently carry it out. In this regard, PSC deals specifically on maritime security, maritime safety, and marine pollution and to ensure that all foreign ships are manned in compliance with applicable international laws (Xiao et al., 2021). Therefore, PSC is the inspection of foreign ships calling at the port of a foreign country or offshore terminal to determine the level of compliance of the ships, its equipment and crew to international Conventions, regulations and codes (Xiao et al., 2021). The purpose of this inspection is to ensure that ships sailing within the territorial waters of another state jurisdiction do not pose the risk of marine accidents, and pollution of marine environment (Yan et al., 2021).

Thus, PSC does not substitute the exercise of flag state responsibilities because the obligation to secure the ocean against substandard ships lie exclusively on flag states, the failure of some flag states to meet these obligations necessitated the development of PSC, consequently, control measures taken by PSC is complementary and there to assist administrations (Plachkova, 2019). Moreover, PSC matches the efforts of the flag state in compelling compliance of ships thereby aiding in the identification of substandard ships that will not be possible without the commitment of a flag state (MGBOLU & AMAH, 2020). Even though the international responsibilities lie on States individually, they perform better through a regional collaboration. (Yang et al., 2020).

Paris MOU was built on perseverance and determination (Bang & Jang, 2012). The successful implementation of the Paris MoU on PSC has raised awareness that the best way to eradicate the operation of substandard ships could be by setting up regional MoUs on PSC, by doing so, there will be a medium for sharing information and data by member states thereby ensuring a safe maritime region (Gismondo, 2009). However, the result is not good enough so far in the
elimination of substandard ships (Falk, 2016). A report is being generated for every PSC inspection, which contains detailed information on number of deficiencies noted in the course of inspection, and with important ship particulars like the type of vessel, IMO number of the vessel, the year the vessel was built, flag of registry and date of last inspection (Cariou et al., 2008).

In this respect, States that are within different regions have assembled under different MoU concerning PSC. Regional regimes of PSC are developed to eliminate port shopping, information sharing, decrease repetitive inspection of foreign ships, ensure and encourage uniformity and to improve the efficiency of port state inspections by way of harmonization between port states (McDorman, 2000).

As the world maritime regime recognized the regional bodies, the legal aspect of the common implementation of PSC is no longer an obstacle. Furthermore, PSC is effective when it is carried out on a regional basis, thus, PSC procedures and legality are clearly developed. The development of regional PSC MoUs is an effective way of getting rid of dangerous ships, substandard and unseaworthy ships (Cariou & Wolff, 2015). The PSC regime has had an effect in the implementation of relevant Conventions as it relates to promoting the value level of shipping.

In the African maritime domain, the implementation of the PSC is left to individual States to control, which sometimes are implemented in a disorganized manner, this led to calls by relevant maritime stakeholders in Africa for a regional implementation design to simplify the process by allowing one control at a time (Falk, 2016). Thus, a regional coordinated inspection is carried out on ships traveling to different countries in the same region, and the inspection focuses on substandard ships and it prevents multiple inspection of ships by all States in the region (Cariou et al., 2008).

The International Maritime Organization’s Resolution A 682(17) of 1991 called for a regional framework which will deal with the inspection of ships at ports, some States in the West and Central Africa on the 22nd of October signed an MoU called the Abuja MoU with the ultimate aim of eliminating the operation of substandard vessels in the region which will ensure maritime safety in the region, ensure better working and living conditions for its seafarers and facilitate regional cooperation amongst member States (Abuja MoU, 2018).
The West and Central Africa region is made up of 22 States, out of the 22 States making up this region, the membership of the Abuja MoU is made up of 18 for which Nigeria is a part. There are also several observers of the MoU including the 8 existing MoUs (Abuja MoU, 2018).

It is clear that the implementation of the Abuja MoU is reflected in the great strides made by its member States in ensuring that the region is a safe maritime domain (Bang & Jang, 2012). In an evaluation report on the performance of the Abuja MoU in 2018, evaluating its performance for the period between 2010 and 2018, revealed great improvements by member States in getting rid of substandard ships in their waters, there have also been improvements in the welfare of seafarers and there have also been a radical decrease in marine pollution in the region (Abuja MoU, 2018). Under the MoU there is collaboration between countries in terms of how they cooperate to carry out PSC inspection in terms of equipment, harmonization of the national jurisdiction in order to carry out their international responsibilities together.

The literature review on PSC is broad, publications especially as concerning two aspects: the policies for pollution prevention and reducing ship safety deficiencies and the implication for maritime law.

Publications like Özçayir (2004) provided a comprehensive analysis of the legal implication of implementing the several PSC regimes. Kidman (2003), on the other hand, are more technical and practical than legal in nature, describing vessel inspections and how these should be done. Another article by Aguilar (2008) talked about the regime of sanctions in relation to the early development of the PSC regime.

According to Chatzirigopoulou (2010), he wrote a general study, although it was narrowed down to updating the legal bases of the PSC system. The IMO (2001) issued a periodically updated manual as part of a PSC model course and complemented it with added procedures since 1995 (IMO 2012).

There have been significant contributions to different aspects of the PSC regime. For instance, Franses (2008); Knapp (2004) have spearheaded the application of econometrics to more precisely quantify PSC success all around the world, using binary logistic regression to effectively
differentiate between several PSC regimes. These same researchers in 2007, suggested that it was expedient to make changes on the number of times inspections are being carried out according to the vessel risk profile and their recommendation was eventually adopted and implemented by the Paris MoU with the new inspection regime (Ravira & Piniella, 2016).

Knapp and Bijwaard (2009) proposed standardizing inspection procedures in a study conducted on the functions of inspectors, they recommended that PSC officers should be trained and the databases of various regimes integrated, with a view to advance the Global Integrated Ship Information System (GISIS).

On the other hand, (Cariou et al., 2008) utilized data from the Swedish Maritime Administration (1996-2001) to establish the influence ship characteristics have on the interval between two successive PSC inspections and the number of deficiencies identified in the next inspection. They established that a ship's age, flag of registry, and type were important predictors (Cariou et al., 2008).

Li & Zheng, (2008) studied the effectiveness of PSC and the methods used in PSC agreements in regions for the selection of ships for inspection; their findings established the implementation of PSC is efficient in enhancing ship safety level in maritime transport. Li et al.(2014) and Bang (2012), recently explores the relationship between PSC inspections and a ships involvement in accidents and the occurrences using Bayesian networks based on accident, data and inspection with two stand-in algorithms.

Additional significant progress in this field in 2013 includes the documents issued by the Paris MoU secretariat (Paris MoU 2008 to 2013) and the effort of the subcommittee on the implementation of IMO instruments (IMO 2014).

It is important to note that very few authors have conducted an analysis on the process of qualification and the impact of the professional profile of inspectors and the results of inspections (Ravira & Piniella, 2016).
2.3. Legal framework of PSC

The legal framework on the conduct of ships at sea has been developed mainly through international Conventions of specialized agencies of the UN, the IMO conventions and ILO instruments saddled with the responsibility of safety and security, the prevention of marine pollution, and the welfare, living and working condition of employees (IMO, 2019). This provides relevant guidelines for PSC inspections and the relevant instruments for the Abuja MoU region on PSC. The application of port state jurisdiction is firmly attached in international maritime law, States have sovereignty over their territory and jurisdiction over their ports as reflected in the UNCLOS, 1982 (Mejia, 2020). Here, territorial sovereignty is known as port state jurisdiction, indicating that when foreign ships enter a foreign port of a State it is in the territorial sovereignty of that State. Therefore, a foreign vessel calling at a state port must comply with the national laws and regulations of that State, there are some exceptions to this rule, where the vessel calls at a port due to force majeure or emergency (Payoyo, 1994).

Article 94 of UNCLOS provides for the duties of the flag state, this article shows the important role played by port states in the control and regulation of flag states who are negligent of their duties in carrying out control over vessels that are flying their flag in line with the provisions of Article 94 of UNCLOS.

Article 218 paragraph 1 of the convention provides thus, port states can undertake investigations that relates to any discharge from vessels that is either outside the internal waters or territorial sea or exclusive economic zone of the port state that violates applicable international standards and rules. Article 219 of UNCLOS establishes that sanctions should be issued in cases of violation of applicable international standards and rules to vessels calling at the State port or offshore terminals that relate to a vessel's seaworthiness and is a threat to the marine environment. In this situation, administrative measures should be taken in order to prevent the vessel from sailing. States may allow the vessel to proceed when corrective measures have been taken, then permit the vessel to continue immediately (Mejia, 2020). As specified in Article. 231, the port state shall inform the flag state of any measures that have been taken against foreign ships and will submit to the flag state all official reports regarding such measures. It is also vital that this information be
communicated with immediate effect to the maritime authority of the flag state, consular officers, or diplomatic agents.

According to Art. 226(1) port state shall not unduly delay foreign vessels except for investigations, physical inspection of vessels shall be limited to the examination of certificates and related documents, as the vessel is obligated to abide by the relevant international standard, a more detailed inspection should be carried out after such an examination.

In light of the foregoing, PSC plays an important role for the interest of not only the port state, but the international community at large which includes the protection of the marine environment for sustainable marine biodiversity, marine species, marine living resources and the safety of life at sea.

Article 61 of SOLAS convention 1914, noted the first provision of PSC in the International convention and these are found in Regulation 19 Chapters I, Regulation 4 Chapter XI-1, Regulation 9 Chapter XI-2 and Regulation 6.2 Chapter IX of SOLAS Convention as amended by the 1988 Protocol of SOLAS. Regulation 19 chapter 1 provides thus;

“Every ship when in a port of another Contracting Government is subject to control by officers duly authorized by such Government in so far as this control is directed towards verifying that the certificates” (Mejia, 2020). The International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 relation thereto, (MARPOL 73/78), provisions of PSC are established in, Articles 5 and 6, Regulation 16.9 Annex II, Regulation 8 Annex V, Regulation 8 Annex III, Regulation 11 Annex 1, Regulation 10 Annex VI and Regulation 13 Annex IV, which ensures that all requirements relating to MARPOL and its annexes are met where ships are subject to PSC (Ida Ngo, 2019).

Furthermore, provisions of PSC are seen in Article 12(1) of the International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE 69), provides thus:

“A ship flying the flag of a State the Government of which is a Contracting Government shall be subject, when in the ports of other Contracting Governments, to inspection by officers duly authorized by such Governments. Such inspection shall be limited to the purpose of verifying:
(a). that the ship is provided with a valid International Tonnage Certificate (1969); and
(b). that the main characteristics of the ship correspond to the data given in the certificate.”

In another development, the STCW 78, stipulates in Article X provides that foreign ships “are subject, while in the ports of a Party, to control by officers duly authorized by that Party to verify that all seafarers serving on board who are required to be certificated by the Convention are so certificated or hold an appropriate dispensation.” (Mejia, 2020). In addition to the aforementioned, foreign vessels calling at a port are subject to the control of designated authorized officers for the verification and authentication of the documents of all crew onboard and to make sure they are certified as regards to the international Convention to serve onboard. In addition, provisions of PSC are established in Regulation 6 and 7, Part II (Control Procedures) and Section 138 of the Act talked about powers conferred to the inspector/officer.

The MLC 2006, as amended, Regulation 5.2.1 (Inspections in port) provides that inspection will be carried out on foreign vessels calling in the port of a State party “for the purpose of reviewing compliance with the requirements of this Convention (including seafarers’ rights) relating to the working and living conditions of seafarers on the ship.” It further stated that, each member shall agree on the declaration of maritime labour compliance and the maritime labour certificate mandated under Regulation 5.1.3 requirements of this Convention as well as seafarers’ rights. Appropriately, the inspection in its ports shall be limited to an evaluation of the certificate and declaration except in situations that are specified in the Code (Mejia, 2020), while Standard A5.1.4, Guidelines B5.1.4 and Regulation 5.1.4 gives details on inspection and enforcement.

The aforementioned Conventions, provisions and guidelines give a framework for procedures and standards channeled for the development of universal coordinated and harmonized PSC. However, some States in the region have ratified the applicable Conventions but have not implemented them yet, for instance, the implementation of SOLAS requires new technology and devices, and digitalization and some States in the region cannot afford the implementation of this equipment.

2.4. National legal instruments

By virtue of apportioned to Article 94 of UNCLOS which provides for, duties of flag states, this article shows the important role played by port States in the control and regulation of flag States who are negligent of their duties in carrying out control over vessels that are flying their flag in line with the provisions.
In Nigeria, the competent authority saddled with PSC responsibilities is NIMASA and NIMASA carries out these responsibilities through the following instruments:

- The Merchant Shipping Act (MSA) 2007 (Nigeria)
- NIMASA Act 2007

The Merchant Shipping Act (MSA) 2007 – a review of the MSA 2007 shows that some of the relevant IMO Convention such as MARPOL protocol and its amendments were not enacted into the national regulation. However, Part XII (Safety of Life at Sea) section 215 provided thus:

“As from the commencement of this Act, the following Conventions, Protocols and their amendments relating to Maritime Safety shall apply, that is

(a) International Convention for the Safety of Life at Sea, 1974 (SOLAS);
(b) Protocol Relating to the International Convention for the Safety of Life at Sea, 1988 and Annexes I to V thereto;
(c) International Convention on Standards of Training Certification and Watch Keeping of Seafarers, 1978 (STCW) as amended;
(d) International Convention on Maritime Search and Rescue, 1979 (SAR);
(e) International Labour Organisation Convention (No. 32 of 1932) on Protection Against Accident of Workers Employed in Loading or Unloading Ships (Dockers Convention Revised 1932);
(f) International Convention on Maritime Satellite Organisation, 1976 (INMARSA T) and the Protocol thereto;
(g) The Athens Convention Relating to the Carriage of Passengers and their Luggage by Sea, 1974 and its Protocol of 1990;
(i) International Convention on Salvage, 1989;
(j) Placing of Seamen Convention, 1920;
(k) International Ship and Ports Facility Security (ISPS) Code; and
(l) International Convention for Safe Containers, 1972.”
From the foregoing, it can be deduced that section 215 of MSA forms the basis for the application of the above mentioned Conventions and protocols adopted by IMO member States in Nigeria.

Part XII from the general provision 216 (I) of the MSA “special measures to enhance the memorandum on port state control.” Moreover, section 226(I) of the MSA is basically to encourage ease of doing business and cross border transaction in port state.

**NIMASA Act 2007** – one of the objective of the Act is to “regulate and promote maritime safety, security, marine pollution and maritime labour.” Which is in line with the IMOs objective.

One of NIMASA’s function and power as a maritime administration (MARAD) is to ensure that port state obligations are inspecting foreign ships visiting its ports that is embedded in the NIMASA Act 2007, Part IV, Section 22, sub section 1(m). This obligation is fulfilled by the Surveyors of NIMASA by performing PSC inspections, so NIMASA is solely in charge of PSC inspection. The PSCOs carries out the obligation of inspecting the vessels on behalf of the MARAD.

In addition, Part IX, Section 40, sub section 3 on the (Ship Safety and Security) provides thus “Notwithstanding the provisions of any other law, where the Agency has reason to believe that any ship, being in any port or place in Nigeria, is an unsafe ship and a security risk, and is, by reason of any of the matters mentioned in subsection (2) of this section, unfit to proceed to sea without serious danger to human life having regard to the nature of the service for which it is intended, such ship is liable to be detained.”

From the aforementioned, it is apparent that one of NIMASA’s role is to perform PSC duties.

**2.5. Port state control officers (PSCOs)**

The IMO Resolution A.1138(31) requires that PSC should be carried out by national agents; these tasks have to be performed by an adequate number of qualified and trained officers that are authorized by the competent authority. The PSC inspections, in order to address the complexity of the task, need to be carried out by professionals who are adequately trained (Xiao et al., 2020). Therefore, a PSCO is a qualified person that is authorized to carry out controls and inspections in
accordance with the relevant conventions and national laws of the port state (Yan et al., 2021). Moreover, PSCOs should be experienced officers qualified as flag state surveyor, a master, or a naval architect, or chief engineer and should have seagoing experience, and or have qualifications from a recognized institution by the competent authority specialized training to ensure adequate competence (Ozcayr, 2008).

Throughout their qualifications and training, PSCO should conduct controls in accordance with IMO Resolution A.1138 (31) and Resolution A.1052 (27) (Ida Ngo, 2019). Therefore, it is important to note that in an event or situation where a specific aptitude is required, PSCOs may consult relevant experts to seek advice in order to make appropriate decisions in a complex situation. They may also refer to the national and international instruments that are applicable.

From the legal perspective, it is vital for PSCOs to renew their accreditation, in this regard, credits are awarded when they have successfully completed their activities and this certification is solely for inspectors that carry out inspections regularly and are informed with the amendments to the MoU (Cariou et al., 2007).

Most importantly, PSCOs should be knowledgeable about shipping activities and the provisions of the relevant international conventions and national laws to carry out their responsibilities and conduct a PSC inspection including considering the recent IMO PSC courses, including communicating in English with the crew and reviewing documents that are written in English.

Additionally, it is vital for PSCO to update their knowledge on relevant instruments that are related to PSC as this will determine the effectiveness and efficiency of the PSC inspection (Xiao et al., 2020).

2.5.1. Qualification and training of PSCOs

At the time of conducting this study, there was no trace of any documented PSC qualification process. Drawing from NIMASA PSC recruitment criteria, PSCOs should be experienced officers qualified as flag state surveyor, they should have a bachelor degree from a recognized institution in relevant specialization such as Mechanical/Marine Engineering, Ship Science and Naval
Architecture etc. A PSCO is a highly qualified government official, therefore, they are required to have a sufficient degree to inspect and detect ships with deficiencies.

In Nigeria, the flag state is responsible for employing of PSCOs, the functions and responsibilities of the PSC are carried out by the flag state, this is carried out through NIMASA by PSCOs in the of the agency, and have met the criteria to be called PSCO. Most of these inspectors are ex seafarers, it is vital to note that these functions are not outsourced, inspectors are issued a relevant badge as a PSCO once employed as a means of identification (Abuja MoU, 2019).

Moreover, an inspector will also be required to have the ability to combine both specialist and general engineering knowledge and acknowledge to apply both existing and new technology that emerge. Additionally, they should be able to apply appropriate practical and theoretical methods to design, construct, manufacture, develop, commission, operate and maintain engineering products, services and processes. Thus, being a good team player with the capacity to carry out his/her own initiative to meet business and personal objectives with the ability to communicate fluently in English, both spoken and written (Falk, 2016).

PSCOs should be familiar with all relevant international Conventions related to PSC such as the ISM Code and STCW conventions, MLC 2006 etc. Moreover, IMO through its Technical Cooperation Committee (TCC) offers training to these PSCOs, some of the training fully funded by the IMO in collaboration with regional MoUs and beneficiary member States of the Abuja MoU (Abuja MoU). From the foregoing, it is clear that the qualification and training requirements for PSCO is crucial due to the complex structure of shipping as explained by Hjorth (2015), to ensure sufficient competence and skill in the inspection process, thereby ensuring safety measures and environmental protection and they should be empowered by states.

2.5.2. Types PSC inspection

PSC inspections for the West and Central African region can be categorized into two different levels, namely an initial inspection and a detailed inspection.

- Initial inspection – According to Graziano et al., (2018), PSCOs inspect and or examines the vessel's certificates and documents, and general inspection of different areas onboard (which includes the bridge, engine room, accommodation, and the general hygiene of the vessel) ensuring that the overall condition of the vessel complies with the requirements of
the certificate. In addition, they check if the outstanding deficiencies from previous inspections have been fixed pursuant to IMO Resolution A.1138(31) chapter 2.

- **Detailed inspection** – This stage of inspection goes beyond the initial inspection, in absence of valid certificates/documents or clear ground that the ship's condition does not meet the international standards, a more in-depth examination will be carried out.

### 2.5.3. PSC inspection process

The efforts made by port states have immensely contributed to improve maritime safety, safety and prevention of marine pollution (MGBOLU & AMAH, 2020). Thus, PSC inspections need to be consistent to identify deficiencies of a vessel, its crew, its equipment and all applicable PSC procedures. Ensuring that there is a continuous update of the procedure for PSC carried out by the working group and correspondence on measures to harmonize PSC procedures and activities in the globe (Cariou et al., 2012).

Every 2 years, an Assembly Resolution that contains an updated version of the procedures for PSC is being adopted, additionally, there are different categories of inspections;

- **Physical/external inspection of the hull** – PSCOs carry out a physical check of the vessel to see if it complies with the international requirements based on the Convention, and documents to show compliance, the PSCOs checks the Certificates, documents, classification certificates and also checks if the ship meets those minimum requirements (S et al., 2012).

- **Inspection of the bridge** – The PSC inspectors must make sure all equipment are functional like the, they check that all nautical publications and charts are up to date and the detailed voyage planning. PSCO should endeavor to make sure that drills take place regularly (Hjorth, 2015; Von Ellenrieder & Wampler, 2016)

- **Deck and Cargo Spaces inspection**: PSCOs should make sure that all the spaces on deck and the cargo spaces are in order. The cargo holds and the alarms for water ingress in these holds are checked for operation (Turna & Öztürk, 2021). The mooring and windlass, the paint and the Shipboard Oil Pollution Emergency Plan (SOPEP) lockers, the emergency fire pump rooms and other safety appliances on deck including the lifeboats and the life rafts (Guo et al., 2012). Also the firefighting fixed systems, portable firefighting systems and fire mains provided. The quick closing valve controls and CO2 operating controls are also found in these stations (Bonnin-Pascual
& Ortiz, 2019). The officer must check the individual lifejackets and the immersion suits which might be used in case of an emergency or abandon ship situation.

Engine room inspection – The PSCO is accompanied by an Engineer for this inspection. The general appearance of the engine room must be clean and tidy. The PSCO checks for obvious leaks, checks the oily water separator and other alarms and trips of the main and auxiliary equipment onboard to know if it is well maintained and if it works well. They check the functional emergency steering gear, the emergency generator, the incinerator and other emergency equipment onboard (Fadhil, 2019). Also the firefighting equipment in the engine room can be verified for their maintenance and inspection by the crew. The ventilation flaps and funnel flaps are inspected for closing and sealing of engine room spaces (Pitana et al., 2020).

Accommodation spaces inspection: The PSCO checks the living condition of the crew, also the firefighting equipment in the accommodation can be verified for their maintenance and inspection by the crew (Hjorth, 2015).

The galley inspection – The PSCO checks the meat fish and vegetable rooms for their temperatures and also if the food is properly stored and if there is enough for the next voyage (Jianbin et al., 2020). Garbage segregation at the galley level and the knowledge of the crew regarding the same can be verified by the PSCO. They check if the equipment for fighting fire is readily available. The PSCO randomly asks questions to the crew on board the vessel to know if they have sufficient knowledge of the safety, environment protection and operations onboard (Cahyani et al., 2021).

2.6. Regional MoUs on PSC

States that are within different regions grouped and came together under MoUs with respect to PSC and there are categorically 9 regional MoUs and they are; The Paris Memorandum of Understanding on PSC (Paris MoU), the Acuerdo De Viña del Mar, Agreement on PSC (Latin American Agreement), the Memorandum of Understanding on PSC in the Asia-Pacific Region (Tokyo MoU), the Memorandum of Understanding on PSC in the Caribbean Region (Caribbean MoU), the Memorandum of Understanding on PSC in the Mediterranean Region (Mediterranean MoU), The Memorandum of Understanding on PSC For the Indian Ocean Region (Indian Ocean MoU), the Memorandum of Understanding on PSC in the Black Sea Region (Black Sea MoU) the
Memorandum of Understanding on PSC in the Gulf Region (Riyadh MoU) and the Memorandum of Understanding on PSC for West and Central African Region (Abuja MoU) and the United States Coast Guards (USCG) which is the 10th PSC regime (Kara & Oksas, 2016).

The clue of regional MoU on PSC traces its origins from the Hague in 1978 that was signed between eight Northern sea States right after the Amoco Cadiz incident which is presently known as the Paris MoU (Cariou et al., 2008).

In order to be efficient, PSC should be conducted across maritime borders, thus a regionally coordinated inspection is more adequate and productive than separated individual state controls. In this regard, regionalization and institutionalization came in as a reaction to the increasing frustration with several flag states Mejia (2020), “unable to adequately perform their mandated duties of ensuring that ships flying their flag comply fully with international safety standards formulated under the auspices of the International Maritime Organization (IMO) and the International Labour Organization (ILO)” (Cariou et al., 2008).

It is important to note that MoU does not have any legal binding force on the parties involved but it is an agreement between States involved intended for their common interests and to strengthen cooperation (Ida Ngo, 2019). Regional PSC regimes were developed to reduce repetitive inspections of foreign vessels, to improve the efficiency of port states inspections by harmonization as well as uniformity between port states, sharing and exchanging of information, and to eliminate port shopping thereby avoiding misleading competition between ports in the region (Bang & Jang, 2012).

2.7. Abuja MoU on PSC

Abuja MOU is one of the nine regional MoUs; on the 22nd of October 1991 Abuja MoU was established as an intergovernmental organization which consists of maritime administrations of the regional States. The official acceptance of the memorandum grants the countries the right to inspect foreign ships visiting her ports. However, it is obligatory that such a country shall have all the relevant international Conventions ratified and adopted into its national laws before carrying out PSC processes (Abuja MoU, 2018).
Official acceptance of the memorandum confers the right on a country to inspect foreign ships visiting her ports, making sure that the ship, its equipment and crew, their living and working conditions are in compliance with the requirements of international regulation (IMO, 2019). The national law determines the extent of application of the PSC in a specific country, that means the requirement of a PSC in a particular state is usually dependent on the ratification and adoption of international instruments by the port state, hence in a regional MoU. It is important that all member States on the MoU are briefed on the importance of having uniform treatment towards PSC regime by ratifying the international Conventions developed by the IMO and ILO (Bang & Jang, 2012).

There are 22 Central and West African States within the region of the Abuja MoU and 18 have ratified and adopted the relevant international convention, 4 countries in the region are yet to do so, the full member States under Abuja MoU are Benin, Cape Verde, Congo, Côte d’Ivoire, Gabon, Ghana, Guinea, Mauritania, Namibia, Liberia, Nigeria, Senegal, Sierra Leone, South Africa, the Gambia, Angola, Togo and the Republic of Cameroon being the 18th (Abuja MOU, 2018).

Moreover, there are 15 observers to the Abuja MoU, 8 existing MoUs on PSC observers and other observers, which includes Burkina-Faso, Mali, IMO, Maritime Organization of West and Central Africa (MOWCA), ILO, Asia-Pacific Maritime Information and Advisory Services (APMIAS) of the Russian Federation, and Food and Agricultural Organization (FAO) (Abuja MoU, 2018).

According to a report on Abuja MoU on PSC between 2018 and 2020, it showed that there is a constant improvement in the region by the MoU member States to get rid of substandard ships, to improve the living and working condition of seafarers and to reduce marine pollution in the maritime domain of this region.

2.8. Research gap

Throughout the literature review, we covered the main aspect of PSC in general from the legal dispositions to the regional architecture to implement the State’s responsibilities from the African perspective, Abuja MoU gives the framework to West and Central African countries to effectively carry out controls. Regarding the complexity of the PSC, it is crucial for countries to train their officers to be efficient. The possibility of joint effort on PSCOs qualification or a uniform procedure for recruitment, retention, qualification and certification of PSCOs on a regional level were not discussed in any of the literature.
Therefore, in this study, the researcher will focus on looking at the uniformity of qualification of PSCOs in Nigeria. There is no study published on the PSCO recruitment and qualification process in Nigeria. This study aims to fill the research gap.
3. Chapter Three: Data collection and research methods

3.1. Introduction

This chapter explains different research methods that were used after the collection of data that are relevant to the study. This will give reasons for the research choice that is used to answer the research questions. This explains the research method approach applied to look at the qualification of PSCOs and how it affects the efficiency of the PSC inspections in Nigeria. It is important to get the opinion of PSCOs through survey and interview in order to validate the assumption gotten from the literature review. The research methods is organized in the following sections such as the Research ethics, research design and data collection.

3.2. Research methods

Jamshed (2014) defined research method as “a strategy or architectural design by which the researcher maps out an approach to problem-finding or problem-solving.” The researcher would seek answers to the questions of why, how, and what of the research topic and contribute to the pool of knowledge in the research area. The researcher intends that the findings would bring about innovation and practical solutions to the problems identifies.

In this research method, the researcher will also employ triangulation, triangulation in this context is the use of survey, and interview and documentary review in order to obtain as accurate information as possible, which will serve to validate each other.

For the purpose of this paper, the qualitative research method is used to answer the research questions, because it allows good assess to personal experiences, which makes it feasible to interact closely with data collection, analysis, and then answers the research questions. Qualitative research forms its principles on inductive reasoning. The question the researcher tries to explain and answer comes from the observational element.

From the survey, interview and documentary review, the researcher will highlight the most significant results of the survey, to get a glimpse into the process of qualification, training and update of PSCOs in Nigeria, how this factor applies in inspection performance and how it can help
to optimize the efficiency of PSC. Moreover, the researcher will look at the improvement overtime and determine the most important factors and their effectiveness, and the answer will help the researcher determine the most important factors, the characteristics, how they help to optimize the process, and then highlight issues that relate to those factors and how to optimize and update them in order to make the PSCO training more efficient.

3.3. Research ethics

Ethical cogitation is one of the most critical parts of a research. If ethics is not part of this study, it may be considered a failure. The study starts with World Maritime University (WMU) Research Ethics Committee (REC) scrutinizing the survey and interview questions and approved it. Additionally, according to Bell et al., (2018) the following points constitute the most important principles related to ethical consideration in dissertations such as confidentiality, data protection, anonymity, and flexibility of participants to withdraw from participation were adhered to, in other to protect the privacy of research participants.

For addressing Ethical considerations in my research in a constructive way, the researcher would be considering the following points:

- Privacy and confidentiality of respondents are of utmost importance.
- Recognition of works or materials used in any part of my research work with reference and respect to WMU ethical standards.
- The use of indecent, obnoxious, discriminatory, and other unwelcomed languages would be avoided especially in the preparation of interview questions and questionnaires.

Respondents would participate based on informed consent. Informed consent comprises of researchers providing adequate information and assurances about taking part to allow individuals to comprehend the implications of participation and to reach a fully informed and freely given decision about whether or not to do so, without the exercise of any pressure or coercion (Saunders et al., 2009; Saunders et al., 2012). Moreover, no fees were paid by or to the respondent to participate in the research and all inputs made by the participants were voluntary. Maintenance of maximum level of unbiased and objectivity in all analyses, conversations and discussions
throughout the entire research. Finally, no editions or alternations upon the received data and all data or information will be disposed of upon completion of the program.

3.4. Research design

The researcher would use an exploratory research design, because the research intends to explore the research questions and do an extensive study on the issues identified. This would be conducted in order to determine the nature of the problem and have a better understanding of the problem. When conducting exploratory research, the researcher should be prepared to change their direction as a result of the revelation of new insights and data (Saunders et al., 2012).

Exploratory research explores the research topic with differing levels of depth and forms the basis of more conclusive research. It can help to determine the data collection method, research design, and sampling methodology (Singh, K. 2007). Exploratory research “tends to tackle new problems on which little or no previous research has been done” (Brown & Brown, 2006).

3.5. Data collection

Data collection is the process of gathering and measuring information on targeted variables in an established systematic fashion, which then enables one to answer the relevant research questions and evaluate outcomes. In data collection, the integrity of data must be maintained and preserved so that errors made intentionally or unintentionally can be detected in the collection process.

Most et al., (2003) describe ‘quality assurance’ and ‘quality control’ as two approaches that can preserve data integrity and ensure the scientific validity of study results. Each approach is implemented at different points in the research timeline (Whitney et al., 1998). Quality assurance involves activities that occur before data collection begins while quality control speaks to activities during and after data collection.

The data collection was distributed through a self-administered survey, which was created on google form and sent electronically to the participants. The data for the interview was collected by using semi-structured interviews by PSCOs. Some other sources are NIMASA Act 2007, the MSA 2007, NIMASA’s website, the research participants were sourced via personal contact with PSCOs, and their responses were received in real time through the google form. The researcher
assured the participants of their anonymity, consent and confidentiality as per WMU Research Ethics Protocol.

My research questions were made to address PSCOs qualification and training and update, the efficiency of PSC inspections and how NIMASA can improve the PSC recruitment and qualification to make them more efficient.

This study will make use of primary and secondary sources of information and data collection. The primary sources of information will include personal interviews of PSCOS, questionnaires, data from Nigeria ports, and Abuja MoU regional office in Nigeria.

The research will refer to IMO instruments, ILO Conventions, codes, the national law of Nigeria such as the Merchant Shipping Act (MSA), NIMASA Act, and regional organization agreements and the Abuja MoU website.

The secondary sources of data collection will be journals, books, articles, websites of the Abuja MoU, newspaper publications, official documents, websites of international government and non-governmental organizations. In addition, the study will make use of Maritime Commons and WMU Library.

3.5.1. Questionnaire survey

Questionnaires are one of my data collection methods, this would contain open-ended questions and the answers obtained would be analyzed using qualitative methods, which include discussions and critical analyses. The advantages of questionnaires are accelerated speed of data collection, high level of objectivity, and little or no cost requirement.

The questionnaire was structured in such a way that, Part A of the research questions contains the respondents background and demographics, the Part B of the research question covers the specialization of the PSCOs, selection process, their background, the level of their training and update, mentoring and inspections.
The questionnaire was generated online using google forms and it consists of 13 questions aimed at answering research questions 1 and 2. The questions included choosing from options and additional open-ended questions to give the participants the chance to elaborate more. A total number of 30 questions were sent out, 15 responses were received from the respondents, which is a 50% response. The advantage of using the research questionnaire-based method is that the researcher has the ability to obtain data from an enormous sample of people which is timely and efficient (Rowley, 2014). Using this questionnaire-based method, the target of the researcher is to ascertain the current process of qualification of PSCOs in Nigeria, the effect of their qualification on the efficiency of PSC inspections and to ascertain how NIMASA can improve the PSCOs recruitment and qualification process in Nigeria.

The responses from the questionnaire were used for analysis, the main challenge was obtaining responses from the respondents, and this was reflected in the limited number of responses received from the participants. The researcher conducted interviews in other to address this limitation and answered some questions that were related to the questionnaire.

3.5.2 Interviews

Interviews can be defined as a qualitative research method, that involves “conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program or situation.” (Elisa, 2019).

Semi-structured interview would be the format of the interview used, the interviewer would prepare a set of questions to be answered by all respondents. Additional questions might be required during the interviews to elaborate and/or further elucidate certain issues.

The interview was generated in a semi-structured form and consists of 11 questions. A total number of two interviews were done which is a 100% response getting a more detailed insight by two senior inspectors in Nigeria which is crucial because they are the ones with expertise and more experience. The interviews were precisely aimed at getting a more detailed view of the process of qualification of PSCOs, gaining an in-depth understanding of how NIMASA’s recruitment and qualification process of PSCOs can be improved, and to finding out its impact on PSC inspections.
3.6. Conclusion

The researcher used a qualitative research method to collect and analyze data in order to understand the opinion, concept or experiences and to get a deep insight into an issue or generate new ideas for research. The data collection process in qualitative research has a great effect on the results or outcome. This chapter describes the data collection process, which gives a clear view of how the findings will be drawn.
4. Chapter Four: Findings and data analysis

4.1. Introduction

As explained in the previous chapter, the results gotten from the questionnaire and interviews were carried out by a particular means.

First, the general demographics of data gotten were illustrated. Secondly, details from questions were presented in a structured manner and it has six themes in sub-sections namely, background of inspectors, selection of inspectors, number of inspectors, team, qualification training and mentoring of inspectors, and inspection data. Lastly, the last part of this chapter will give a brief summary of these themes.

This chapter will present the results received by the respondents from both the survey and findings from interviews. The research method is qualitative in nature with a narrative and graphic method alternatively throughout the analysis of my findings. Based on the analysis, the research questions under listed will be answered.

- What is the current process of qualification of PSC inspectors in Nigeria?
- How does the qualification of PSCO affect the efficiency of PSC inspections?
- How can the NIMASA improve the current PSC inspector recruitment and qualification process?

4.2. National legal instruments

As presented in the literature review, the legislation states that responsibilities of the PSC remain with the MARAD, thus, it is vital that the competent authority authorizes an adequate number of trained officers. Sufficient powers should be given to the PSCOs under relevant domestic regulations and required expertise that is acceptable to the port state to carry out their responsibility.

In the MSA, it captures the relevant Conventions and protocols and its amendments that relates to maritime safety, NIMASA Act states that PSC is one of its function. The interviews conducted
revealed that officials referred the researcher to IMO, specifically IMO resolutions related to PSC and PSCO.

4.3. **Research respondent demographics**

In this section, the demographics and general information of the participants for the questionnaire and interview were shown accordingly.

4.3.1 **Questionnaire survey**

15 PSCOs out of the total number of 30 NIMASA PSCOs participated in the survey, all Nigerians. The following sections below will show the summary results of the respondents data such as their gender, age, ranks, sea service, and service years as PSCOs.

**Gender**

100% of the respondents were male while no female participant participated in the survey.

**Age Groups**

The age group of participants 30 to 40 represents the highest percentage of (64.3%). Followed by age groups 30 to 40 with 21%, 50 and above which is 14% respectively, no PSCO falls under the ages of 20 to 30 in Nigeria.
Rank

Marine Engineer represents 35% of the respondents, 28.6% are Chief Engineer, 21.4% Master and 14.3% specified are deck officers. Figure 1 demonstrates this breakdown.

Figure 1: Rank

Sea service Experience

PSCOs who have seafaring experience of 5, 8, and 20 years represent 20% each. On the other hand, the other years of sea experience occupy 10% each. Figure 2 shows the percentage for each.

Figure 2: Sea service experience
Service years as PSCO

Inspectors who have served as PSCO and have experience of 6 to 10 years occupied the highest percentage of 42.9%, while 5 to 10 and 11 to 15 years group had the least percentage of 7.1% respectively. Figure 3 shows the percentages of each group.

![Pie chart showing service years as PSCO](image)

*Figure 3: Years of service as PSCO*

4.3.2 Interview

Interviews were conducted of two senior PSCOs, which focused on six elements. Those experts provided very relevant input to the study, their high position and experience gave their responses a high level of confidence.

4.4. Themes

The outcome for the questionnaire and interviews are structured into six themes namely, background of inspectors, selection of inspectors, number of inspectors, team, qualification, training and mentoring of inspectors, inspection data and the consequences of improper inspections. For reference, the survey questionnaires and the interview questions are available as annexes at the end of this dissertation.
4.4.1 Background of inspectors

The background of the inspectors is vital in carrying out the complexity of PSC inspections. In this section, the background of PSCOIs are explored. Table 1 shows a brief summary of all questions for the data illustration.

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Questionnaire Survey part B No. 1</td>
</tr>
<tr>
<td>2</td>
<td>Interview No.3</td>
</tr>
</tbody>
</table>

*Table 1: Summary data for background of inspectors*

1. Questionnaire survey

Question No. 1 confirmed that the educational background of inspectors are paramount. 42.9% of the respondents holds a BSc and 14.3% holds a BSc in Marine Engineering, 42.9% class I certificate of competence (CoC), and 14.3% holds a master’s degree. Figure 4 shows the specific results.

*Figure 4: Background of inspectors*
2. Interview

Question No. 3 asked about the Minimum degree required to become a PSCO. They stated the following statements such as “A professional qualification (Certificate of Competency (CoC) Degree in Engineering or Navigation coupled with on the job experience/training or any person with required expertise incase PSCO is not available”’ and ‘Surveyors are ex seafarers, ‘’Those with Class I CoC are commissioned on employment as surveyors while those with Class II CoC are employed as junior surveyors but are trained by being given the opportunities to progress on their career till they become Class 1 CoC holders.’’

4.4.2. Selection of inspectors

The selection and recruitment of inspectors is crucial for the inspection of ships, thus, the researcher omitted that question in the questionnaire, rather asked the senior PSCOs in a personal interview. The information gotten was insightful. Table 5 shows a brief summary of all questions for the data illustration.

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Interview No. 5 and 9</td>
</tr>
</tbody>
</table>

*Table 2: Summary data for selection of inspectors*

1. Interview

Question No. 5 asked about the official process/procedure/Policy for the selection of PSCOs. They both highlighted some sentences such as “A PSCO must be a staff of Maritime Safety and Seafarer Standard Department (MSSSD) of the organization and selection is based on the resolution A.1138 (31)” and “Procedure on criteria for the recruitment and nomination of nominated surveyors and Abuja MoU Handbook” and “This is highlighted in NIMASA Human Resource policy and related Procedure on criteria for the recruitment and nomination of nominated surveyors”.

Question No. 9 asked if they follow resolution A.1138(31) for selection of PSCOs. They both answered yes.
4.4.3 Number of inspectors

The number of inspectors is relevant, in this section we will look at the number of registered inspectors in Nigeria and to know if the number is sufficient for conducting out PSC inspections. Table 3 highlights a brief summary of the question for the data description.

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Interview No. 1</td>
</tr>
</tbody>
</table>

*Table 3: Summary data for number of inspectors*

1. **Interview**

Question No. 1 asked about the number of registered PSCOs in Nigeria. The first participant responded, “Nigeria has 30 PSCOs” and the second respondent could not ascertain the number.

4.4.4 Team

The number of inspectors assigned for an inspection of a vessel makes a huge difference. Table 4 highlights all the questions for the data narrative.

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Questionnaire Survey part B No. 12</td>
</tr>
<tr>
<td>2</td>
<td>Interview No. 15</td>
</tr>
</tbody>
</table>

*Table 4: Summary data for team*
1. **Questionnaire survey**

Question No. 12 affirms that PSCOs are encouraged to work as a team during inspections. From the responses received, 92.9% said yes to teamwork, while 7.1% said maybe to teamwork. Figure 5 displays the percentages.

The number of PSCOs in a team, 64.3% said 3 inspectors work in a team, 28.6% choose 2 and 7.1% said 4. Figure 6 shows the percentages of specific results.
2. **Interview**

Question No. 15 emphasized that working in team is a vital element in performing PSC inspection. Both participants agreed with teamwork, the first respondent said, “Yes, about 3 inspectors work in a team” while the other stated that “Two or three work in a team”.

### 4.4.5. Qualification, training and mentoring of inspectors

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Questionnaire Survey part B No. 2, 3, 5, 6, 8 9 and 10</td>
</tr>
<tr>
<td>2</td>
<td>Interview No. 4, 8, 10, 12, 13 and 17</td>
</tr>
</tbody>
</table>

*Table 5: Summary data for qualification and training of inspectors*

1. **Questionnaire survey**

Question No. 2 expounded if PSCOs have received specific training related to performing their duties and the duration of the training. 85.7% of the respondents said yes, 14.3% said no to the statement. 40% of the respondents said the duration of the training is 2 weeks and the other respondents gave different time frame as shown in figure 7.

*Figure 7: Opinion on specific training and duration*
Question No. 3 stated that PSCO's underwent for mentoring in order to carry out their duties. Almost 80% of the respondents said yes, 21% said no. Figure 8 displays the result.

![Figure 8: Opinion on mentoring](image)

Question No. 5 stated that the training received is sufficient for a PSCO. 71.4% of the respondents agreed, 21.4% disagreed and 7.1% said maybe as shown in figure 9.

![Figure 9: Opinion on sufficient training](image)
Question No. 6 asked how often PSCOs update their knowledge in accordance with new regulations, 50% of the respondents said often and the other 50% said occasionally as shown in figure 10.

*Figure 10: Opinion on update on new regulations*

Question No. 8 asked if there are refresher courses for PSCOs, 76% of the respondent said yes and 21.4% said no as shown in figure 11 below.

*Figure 11: Opinion on refresher courses*
Question No. 9 represents the statement asked on how often existing PSCOs undergo refresher training. 35.7% of the respondents said every 2 years and the least is 3 years and above with 7.1%. Figure 12 represents the result of the percentages.

Figure 12: Opinion on refresher training for existing PSCOs

Question No. 10 stated that insufficient training impacts work during inspection, 85.7% agreed, 14.3% disagreed as shown in figure 13.

Figure 13: Opinion on insufficient training
Interview

Question No. 4 inquired about any specific training and certification with brief description. The first respondent stated that “There are no specific certification but PSCOs are made to attend several courses in International Maritime Safety Security and Environment Academy (IMSSEA), IMO organized trainings on PSC under technical cooperation” and the second respondent said that “The main training is on the Job experience coupled with refresher courses organized by the organization, periodic seminars, in-house training.”

Question No. 8 asserted about the length of training programs for different basic qualification. One participant stated that “Not clearly defined / structured training” and the other said, “Basic training should not take more than 1-2 weeks.”

Question No. 10 sought opinions of the sufficiency of training for the PSCOs. One of the participants said, “Yes, though unstructured” and the second participant stated that it is “Not decided.”

Question No. 12 asked if there are refresher courses for PSCOs. One participant responded “Yes” and the second participant stated that “No, no set of courses are tag refresher courses but PSCOs all attend any course that is being organized.”

Question No. 13 inquired about how often the existing PSCOs undergo refresher training. The participant who answered “Yes” in question no. 12 said “Annually” while the other participant said “No specific.”

Question No. 17 affirmed about pursuant to IMO Resolution A.682(17) of 1991, how much support do you get from your regional MoU. One participant said “Very supportive especially in organizing trainings and mentoring schemes” and the other stated that it is “Below average.”

4.4.6 Inspection data

In this section, the opinion of the respondents regarding the number of inspections performed, the procedure of inspection, the importance of proper inspection and consequences of lack of proper inspection. Table 6 shows an overview of the data description.
<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Questionnaire Survey part B No.10 and 13</td>
</tr>
<tr>
<td>2</td>
<td>Interview No.14</td>
</tr>
</tbody>
</table>

*Table 6: Summary data for inspections*

1. **Questionnaire survey**

   Question No. 10 asserted that insufficient training impacts their work during inspection, 85.7% of respondent agreed, while 14.3% said no, insufficient training does not affect inspection as shown in figure 14.

*Figure 14: Opinion on the impact of insufficient training during inspection.*
Question No. 13 refers to the number of inspections performed monthly. 35.7% of respondents said 0 to 10 and 21 to 30 represents another 35.7% inspections carried out monthly. Figure 15 depicts the outcome percentage.

![Figure 15: Opinion on number of inspection performed monthly](image)

2. **Interview**

Question No. 14 asked if PSCOs have manual with procedures and checklist. The two respondents both answered “Yes” and one respondent added that “The Abuja MoU PSCOs manual and procedures and checklists”

4.5. **Analysis of the data according to themes**

According to the results obtained from the analysis, all six elements namely, background of inspectors, selection of inspectors, number of inspectors, team, qualification training and mentoring of inspectors and inspection data are crucial and necessary for PSCOs to carry out efficient inspections and they are all interconnected with each other. Hence, they play a significant role in considering the current qualification process of inspectors in Nigeria, which can in turn influence the process of recruitment and qualification of inspectors in Nigeria. Majority of the respondents said yes that the qualification of PSCOs affect the efficiency of PSC inspections.
15 PSCOs participated in the questionnaire survey, and 2 interviews were done on the six themes. All participants were male which shows that there is an overwhelming gender inequality in the maritime industry, where women make up approximately 2% of the global workforce in maritime (ITF, 2020).

The age group of the respondent is between 30 to 50 years (85.7%) which is reflected to be between the working age group in the maritime industry. Additionally inclusion of different ranks and sea service experiences further improve the data gotten. The questionnaire extracts the basic general information from the respondents.

Personal interviews are vital for gaining an in-depth knowledge, the interviewees represent two senior PSCOs who are experts and experienced in over three decades in the maritime industry. The influence of the participants regarding the result of the survey was considered and the result of the research questions will be answered.

The summary of the research findings shows that selection of inspectors is based on the resolution A.1138 (31), the training of PSCOs is not sufficient and up to date, taking into consideration the impact of insufficient training in carrying out PSC inspections, the importance of mentoring and increasing the length of the mentoring program.

The subheadings below will highlight more on the research questions from the result of the themes.

**Background of inspectors**

From the outcome of the questionnaire, the background of the inspectors is very important in carrying out the complexity of PSC inspections. The majority of the officers have a seagoing background, most of them are ex-seafarers, and are qualified as Masters, Marine Engineers, and Naval Architects, etc. Therefore, an inspector’s background can have a huge impact on the result of inspections.

From the questionnaire responses, 42.9% of the respondents hold a BSc and 14.3% hold a BSc in marine Engineer, 42.9% Class I Certificate of Competence (CoC), and 14.3% holds a master’s degree.
According to Graziano, et al., (2018) a study carried out in the European Union shows that out of 845 PSCOs, 33.5% have seagoing (deck) background, while 23.4% have a seagoing (engine) background, 11.2% are engineers or architects, 19.1% have a university degree and 12.9% are in the unknown category. Additionally, at the country level, there is a large disparity in both the background and the total number of inspectors.

Selection of inspectors

The result from the interview regarding the selection of PSCOs states that there is an undefined recruitment criteria, although the administration selection of inspectors is based on resolution A.1138 (31). Lack of technical capacity was noted from the discussion, it was confirmed that Nigeria does not completely comply with IMO criteria for qualification and training of PSCOs.

From the interview response, the selection criteria for PSCOs was highlighted, PSCOs must be a staff of MSSSD of the organization and selection is based on the resolution A.1138 (31), in addition, and procedure on criteria for the recruitment and nomination of nominated surveyors and Abuja MoU handbook and it is highlighted in NIMASA human resource policy and related procedure on criteria for the recruitment and nomination of inspectors.

According to A. October, (2012) stated that authorities of MARADs will develop and implement required measures for the recruitment and retention of skillful inspectors in view of the level of expertise and importance of surveys and inspections to the administration of the flag state.

Number of inspectors

The number of PSCOs required in a state is very essential, and this number will solely depend on the vessel traffic in that State. For a good inspection to be carried out, the officers need not to be overworked or fatigued. Therefore, it is imperative to employ a good number of inspectors to carry out these obligations. In Nigeria, there are 30 registered PSCOs, during the interviews, the sentiment was shared that this number is sufficient for the job.

Ravira & Piniella, (2016) revealed that there neither was a direct connection between the numbers of officers allocated to ports nor were inspectors distributed equally by professional profile. They also revealed that neither the MoU guidelines nor the European Directive 2009/16 on inspections
made a distinction between the number of inspectors nor types of a professional profile that should form an inspection team (Ravira & Piniella, 2016).

Team

Majority of the respondent from both the interview and survey agreed that conducting inspections in teams is very efficient.

As stated by Graziano et al. (2018), there is a huge difference in the number of PSCOs assigned for an inspection, from the responses received from his research, 54% of inspections were carried out by lone inspectors, which amounts to more than half of the inspections. Two-person inspection teams carried out 35% of inspections, then three, and more inspectors for 11% of inspections.

More inspectors are assigned to carry out more detailed inspections and expanded inspections. For the initial inspections, the percentage with two inspectors is 29%, 40% for a more detailed inspection, and an expanded inspection for 45%.

The EU legislation does not take part in the decision making of the PSCOs working in teams onboard vessels, rather it is a decision solely made by the member State. According to Graziano et al. (2018), it is vital to note that the number of PSCOs will most likely have an effect on the PSC results or the outcome (Graziano, Cariou, et al., 2018).

Moreover, when inspectors work in a team, the inspection focuses on more specific areas within the same period of time spent onboard the vessel. For example, a single inspector with an engineering background may possibly spend 25 minutes inspecting the engine room and cargo spaces and then another 25 minutes to go through the life-saving appliances and navigation bridge. However, a team of three inspectors could use the same 50 minutes on a specific area or two specific areas, which leads to a detailed examination and hence, higher possibilities for noting deficiencies and may order detentions on vessels with major deficiencies (Graziano, et al., 2018).

Qualification, training and mentoring of inspectors

From the outcome of the questionnaire, majority of the respondent affirmed that the inspectors have received sufficient trainings in order to carry out inspections. However, from the senior officers believed that the trainings are not sufficient, they added that officers need to update their
knowledge with new regulations on PSC and the need for refresher and specific training for new and existing PSCOs. From the participants responses, it was observed that there is no specific qualification in Nigeria for PSC inspectors.

It is vital to establish a monitoring system that will take place for a minimum of 6 months unlike 2 weeks stated by the respondents in ensuring that the duties being carried out by the PSCOs are in conformity with the international and national requirements.

The success of any PSC regime is determined by the PSCOs that carry out the inspections. If the officers are not capable and qualified, the concept of PSC will be lost. An officer decides on if a ship is seaworthy or not, a wrong decision by the officer can lead to monetary loss for the ship owner as well as arbitration, undue delay, undue detention and it can give a bad name for the port and the credibility of the port state can be lost.

Therefore, it is crucial for a State to employ qualified officers, giving them adequate training, update their knowledge and mentoring to be able to conduct an efficient inspection. Yan & Wang, (2019) pointed out that the background and professional profile PSCOs influences the inspection results.

According to Mehrotra (2000), different backgrounds and education were grouped into 5 categories namely: Deck, engine, architect, engineering, university degree and others in order to carry out effective PSC, emphasis should be placed on the ability and competence of the officer that is carrying out the inspection.

The IMO through its TCC assists countries to carry out IMO's capacity building programs and has developed model courses in order to assist maritime-training institutions and human development by introducing new training courses and updating existing ones for improvement. For the aim of uniformity and compliance with the regulatory framework of the organization.

As stated by a senior officer of the administration, Abuja MoU has been on an average in providing training to PSCOs in Nigeria. Therefore, Abuja MoU should put more effort in providing or availing trainings within the region especially in Nigeria since Nigeria carries out more inspections than other States in the region. The PSCOs should be familiar with Convention ratified and adopted
by their State and knowledgeable with the relevant Conventions that are applicable in carrying out PSC inspections.

From the discussions of the interview, training and update of knowledge are done when opportunities are available at both the regional and national levels, however, in the selection of PSCOs for training opportunities, there seem to be bias and uneven opportunities in the distribution of these training in the administration. With some of the data gathered, the inspectors themselves feel that the qualification process is inadequate.

Inspection data

For a state PSC regime to be deemed successful, the PSCOs have a major role to play in achieving it. From the responses gotten from the interview and survey, almost all the officers have a seagoing experience and that is an advantage.

From the response gotten from the questionnaire, 35.7% of respondents said 10 to 30 inspections are carried out monthly. According to Şanlıer, (2020), he highlighted that the detected deficiencies of vessels and the detention records within 29,954 PSC inspections which were conducted in the Black Sea MoU region between 2012 and 2017. The age of the vessel was the main reason for the 1,325 detention cases obtained from the analysis. At the same time, other factors such as the flag of registry, type of vessel, inspecting authority and Recognized Organization (RO) have been found to be extremely effective in detentions.

Additionally, the inspection data of ships in 2020 in the West and Central African region is 2337 number of inspections carried out, the number of deficiencies is 937, number of detentions is 9 (Abuja MoU). The age of the vessel is also the main reason for most detention cases in the Abuja MoU region, including the type of vessel, the flag of registry, RO, and the inspecting authorities.

According to Yan & Wang, (2019), one of the critical issues in PSC inspection, is how to select ships for inspection, due to budget, limited time and human resources, not all foreign vessels that are coming to the port state will be inspected. In some situations, the time available to the inspector may not be sufficient to carry out a complete inspection, the officer should be able to make a decision immediately on whether a detailed inspection is necessary or not, and in some cases even
detention. However, if substandard vessels are not identified and the deficiencies are not rectified, the health and safety of the maritime environment will be damaged.

The consequences of improper inspections have a direct impact in the safety of navigation of vessels and the marine environment, Cao, (2016) stated that one of the impacts of improper inspection can lead to undue detention and delay, and result to time and financial loss to the shipowner. In addition, fuel cost, crew wages, money loss, port charge and the delay of delivery can result in liquidated damages for the ship owner (Xiong, 2015). (Zhanjun, 2016) pointed out that due to individual bias, political factors, economic and political conflict between States can lead to a ship being unduly detained. Fan et al., (2019) highlighted on the effect of improper inspection which affects the ship credibility, the image and reputation of the shipowner including the port state, stakeholders and other industry players.

Port states should improve on the professional quality of their inspectors, however, inadequate training of inspectors, weak qualification of inspectors and lack of updating of knowledge can result to an error in the application of international Conventions, which is bound to affect PSC inspection results (Zhanjun, 2016). The consequences of lack of proper inspection, in most situations lead to marine pollution, maritime safety and risking the life of seafarers.
5. Chapter Five: Conclusion and recommendations

5.1. Conclusion

The ultimate objective of this research was to analyze the PSCOs qualification process in Nigeria as well as its impact on the efficiency of PSC inspections. This objective was achieved and the formulated research questions were thoroughly addressed. Several literature addressing PSC, PSCOs qualification process and its impact on the efficiency of PSC inspection were reviewed and in addition, questionnaires were distributed and interviews were conducted with a view to getting insights from PSCOs and senior inspectors on the qualification process for PSCOs in Nigeria and its impact on the efficiency of PSC inspections.

The success of every PSC regime is largely dependent on the competence of PSC inspectors, the effectiveness of PSC is further achieved by an effective regional inspection regime with a harmonized control procedure and information sharing system among member states, thereby making it difficult for substandard ships to get away from the regions safety net (Cariou et al., 2009).

Furthermore, a cursory look at the results from the analysis of the data in the questionnaire as well as discussions during the interview sessions disclosed a worrisome trend that seem to suggest a poor standard of recruitment and qualification process for PSCOs in Nigeria, this can be linked to an inadequate training for PSCOs (Treaty, 2000). Although this analysis is not totally conclusive, there is enough in it to believe that there is a need for improvement in the training as well as recruitment process for PSCOs in Nigeria for an efficient PSC.

A further analysis of the received data disclosed that PSCOs in some cases are unable to completely carry out inspection due to lack of competence and knowledge on what to inspect and what not to inspect and a lack of grasp of the relevant regulations, which the ships are expected to comply with. The consequences of this lack of competence results in improper inspection, which can lead to marine pollution, maritime safety and safety issues for seafarers.
In the course of this research, the study also revealed that there was a lack of emphasis on the number of PSCOs allocated to ports and an uneven distribution of PSCOs to the different ports across the country, which have resulted in some ports being under-staffed.

This study concluded that there is need for improvement in the qualification process because if there is no improvement then the efficiency in PSC inspections will be severely affected thereby further affecting maritime safety and the Nigerian marine environment. Further research is encouraged and essentially required in order to validate the conclusion of this study.

5.2. Recommendations

NIMASA should consider some of the following in order to improve the level of training and qualification of PSCOs in Nigeria:

The introduction of computer based training (CBT) which will help in the initial phase of training, in addition, this can also be helpful in updating the training and data of PSCOs. One of the benefits of CBT is that the inspector can learn at their own pace, update their knowledge and an inbuilt testing to verify the intended learning outcome.

Simulator based training, the aim of the training is to create a ship environment virtually by providing a similar experience to the officers real shipboard inspection by interfacing with head-mounted display (HMD) devices. This practice was successful in Norway (Norwegian & Education, n.d.).

Respondents from the survey requested that some training should be added to their curriculum, such as to improve knowledge on LOADLINE and concentrated inspection campaigns.

Conduct of periodic workshops should be done on a regular basis where new rules and regulations, new Conventions, any changes to PSC regimes. The head of PSCO can discuss the Annual Report and seek areas to improve on.

Coalition of best practices from among inspectors, PSCOs should be encouraged to make presentations on ships inspected and the challenges and problems encountered during inspection.
COVID-19 pandemic has raised some new issues on PSC inspection of vessels (Doumbia-Henry, 2020; Nam & Kim, 2021). The training of PSCOs has to address the complexity of this new environment.

To increase the length of the inspectors mentoring program from 2 weeks to 6 months and above so that the inspector can get a better knowledge of the job before being allowed to conduct inspections alone.
Reference


Pitana, T., Prastowo, H., & Mahdali, A. P. (2020). The development of fire safety appliances


Annex A: Questionnaire survey

QUALIFICATION OF PORT STATE CONTROL INSPECTORS IN NIGERIA: A CRITICAL ANALYSIS

Survey Questions

PART A

1. Age
   (A) 20-30
   (B) 30-40
   (C) 40-50
   (D) 50 Above

2. Gender
   (A) Male
   (B) Female

3. Rank
   (A) Master
   (B) Chief Engineer
   (C) Naval Architect
   (D) Marine engineer
   (E) Others

4. Service years as a PSCO?
   (A) 1-05
   (B) 6-10
PART B

1. What technical qualifications do you possess that is relevant to your performance of the duties of a PSCO?

   (A) BSc. (specify your major _____________)
   (B) Masters (specify your major _____________)
   (C) Class I CoC
   (D) Class II CoC
   (E) Class III CoC
   (D) Sea service (specify number of years _______)
   (E) Others ________________

2. Have you received any specific training related to performing duties as a PSCO?
   (A) Yes (briefly describe.................................................................)
   (B) No

3. Did you undergo a mentoring process prior to exercising your duties as PSCO?
   (A) Yes (briefly describe)
   (B) No

4. Did you undergo a mentoring process prior to exercising your duties as PSCO?
   a. Yes (duration)
   b. No

5. Do you think the training you have received is sufficient enough for a PSCO?
   (A) Yes
6. How often do you update your knowledge in accordance with new Regulations?
   (A) Often
   (B) Rarely
   (C) Occasionally
   (D) Others...........

7. Are the PSCO specialized according to the PSC inspections specifications?
   (A) Yes
   (B) No

   What are these specializations?
   ………………………………………………………………………………………………

8. Are there refresher courses for PSCOs?
   (A) Yes
   (B) No

9. How often do the existing PSCO undergo refresher training?
   (A) Yearly
   (B) Every 2 years
   (C) 3 years and above
   (E) None

10. Do you feel that insufficient training impacts your work during inspection?
    ………………………………………………………………………………………………

11. If you have to add something to your training curriculum what will it be?
    ………………………………………………………………………………………………

12. Do you encourage the use of PSCO teams during inspection?
    a. Yes
    b. No
If yes, how many PSCOs are there in a team?
(A) 2
(B) 3
(C) 4
(D) 5 Above

13. On an average, how many inspections do you perform monthly?
........................................................................................................
Annex B: Interviews

Interview Questions

Good morning Sir,

My name is Faith Chibuoge Azubike, I am studying at the World Maritime University (WMU), Malmo, I am doing a research on the qualification on Port State Control Officers in Nigeria. In this regard, I am conducting interviews and surveys to maritime experts and actors.

1. What is the number of registered PSCOs in Nigeria?
   a. Nigeria has 30 PSCOs

2. Which National regulation regulates the selection of PSCOs/ Flag state surveyors?
   a. The Merchant Shipping Act 2007, this is implied in relevant sections on the enforcement of SOLAS, MARPOL and MLC 2006.

3. Minimum degree required to become a PSCO?
   a. This is highlighted in NIMASA human resource policy and related Procedure on criteria for the recruitment and nomination of nominated surveyors. Surveyors are ex seafarers employed by the agency and deployed to the maritime safety department. Those with Class 1 C oC are commissioned on employment as surveyors while those with Class 111 CoC are employed as junior surveyors but are trained by being given the opportunities to progress on their career till they become Class 1 CoC holders

4. Are there any specific training and certification PSCO? Give a brief description if any.
   a. There are no specific certification but PSCOs are made to attend several courses in International Maritime Safety Security and Environment Academy (IMSSEA), IMO organized trainings on PSC under Technical Cooperation Committee.

5. Is there an official process/procedure/Policy for the selection and qualification of PSCOs?
   a. Procedure on criteria for the recruitment and nomination of nominated surveyors
   b. Abuja MoU handbook, there is a section on the qualification of PSCOs

6. Do you have different trainings for flag state surveyors?
7. Have you observed an impact of the qualification/s of PSCO on PSC inspections?
   a. Yes absolutely. The skills shown by PSCOs with higher professional qualifications are more commendable.

8. What is the length of the training program for different basic qualifications?
   a. Not clearly defined / structured training

9. Do you follow A.1138 (31) or any previous IMO resolution for selection of PSCO in the country?
   a. Yes

10. Do you think the training is sufficient enough for the PSCOs?
    a. Yes, though unstructured.

11. Are the PSCO specialized according to the PSC inspections specifications? What are these specializations?
    a. No. however, effort is made to send PSCOs with relevant vessel specific experience whenever necessary

12. Are there refresher courses for PSCOs?
    a. No. no set of courses are tag refresher courses but PSCOs all attend any course that is being organized

13. How often do the existing PSCO undergo refresher training?
    a. No specific

14. Do you have PSCO manual with procedures and checklists?
    a. Yes, the Abuja MoU PSCOs manual and procedures and checklists

15. Do you encourage the use of PSCO teams during inspection? If yes, how many PSCOs are there in a team?
    a. Yes about 3

16. How do you set the PSCOs teams in terms of qualifications and experience at sea?
    a. Yes, in the cadre of seniors surveyors with accompanying junior or trainee

17. Pursuant to IMO Resolution A.682(17) of 1991, how much support do you get from your regional MoU?
    a. Very supportive especially in organizing trainings and mentoring schemes

Thank you for your time.
All the best.
**Interview Questions**

Good morning Sir,

Good morning

My name is Faith Chibuoge Azubike, I am studying at the World Maritime University (WMU), Malmo, I am doing a research on the qualification on Port State Control Officers in Nigeria. In this regard, I am conducting interviews and surveys to maritime experts and actors.

1. What is the number of registered PSCOs in Nigeria?
   
   There is no actual number of PSCOs in Nigeria.

2. Which national regulation regulates the selection of PSCOs/ flag state surveyors?
   
   Since NIMASA is the apex maritime authority, it has the audacity to checkmate the activities of ship surveyors. NIMASA only base her selection on the international requirement of the International Maritime Organization.

3. Minimum degree required to become a PSCO?
   
   Since NIMASA is the apex maritime authority, it has the audacity to checkmate the activities of ship surveyors. NIMASA only base her selection on the international requirement of the International Maritime Organization.

4. Are there any specific training and certification PSCO? Give a brief description if any.
   
   A professional qualification Certificate of Competency(CoC) degree in Engineering or Navigation coupled with on the job experience/training or any person with required expertise incase PSCO is not available

5. Is there an official process/procedure/policy for the selection and qualification of PSCOs?
   
   The main training is on the Job experience coupled with refresher courses organized by the organization, periodic seminars, in-house training.

6. Do you have different trainings for flag state surveyors?
   
   A PSCO must be a staff of Maritime Safety and Seafarer Standard Department (MSSSD) of the organization and selection based on the resolution A.1138 (31).

7. Have you observed an impact of the qualification/s of PSCO on PSC inspections?
   
   Yes. The impact will either be positive or negative.

8. What is the length of the training program for different basic qualifications?
Basic training should not take more than 1-2 weeks

9. Do you follow A.1138 (31) or any previous IMO resolution for selection of PSCO in the country?
   Yes.

10. Do you think the training is sufficient enough for the PSCOs?
    Not decided.

11. Are the PSCO specialized according to the PSC inspections specifications? What are these specializations?
    I think the specialization should be in the area of PSC and maritime related field like the competency though resolution A.1138 did not clearly state the specialization either.

12. Are there refresher courses for PSCOs?
    Yes

13. How often do the existing PSCO undergo refresher training?
    Annually.

14. Do you have PSCO manual with procedures and checklists?
    Yes.

15. Do you encourage the use of PSCO teams during inspection? If yes, how many PSCOs are there in a team?
    Yes, two or three in a team.

16. How do you set the PSCOs teams in terms of qualifications and experience at sea?
    Average

17. Pursuant to IMO Resolution A.682(17) of 1991, how much support do you get from your regional MoU?
    Below average

Thank you for taking out time out of your busy schedule to answer these questions, I appreciate. Thank you Faith, and all the best in your studies, hope this information will be of relevance to your research.