
EXISTING SHIP INSPECTION AND SURVEY PROCEDURES IN SEAPORTS IN PORT HARCOURT

Asangansi, O. E.,^{*1} Prof C. H. Wizer²

^{1,2}Centre for Logistics and Transport Studies, University of Port Harcourt, Rivers state,
Nigeria.

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*Corresponding Author: Asangansi, O. E.

Centre for Logistics and Transport Studies, University of Port Harcourt, Rivers
state, Nigeria.

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ABSTRACT

This article examined the existing ship inspection and survey procedures adopted in seaports in Port Harcourt, drawing directly from Objective One of the M.Sc. dissertation by Asangansi, Okwong Eyo. The study assessed defined procedures, inspection intervals, documentation and statutory certificates, physical examination of vessel structures and safety equipment, safety and pollution-prevention requirements, risk-based considerations, communication of findings, follow-up of deficiencies, consistency and institutional coordination. A descriptive survey design was adopted. The population comprised 600 maritime professionals and personnel within the Port Harcourt and Onne maritime environment. A sample size of 240 was used; 228 questionnaires were valid, representing a 95.0% response rate. Data were collected with a structured five-point Likert questionnaire and analysed using descriptive statistics, Pearson Product-Moment Correlation and multiple regression. The objective-specific result produced a composite mean of 3.80 (SD = 1.02), above the 3.00 decision benchmark, indicating general agreement that existing procedures were present and operational. Item means ranged from 3.70 to 3.89. Institutional coordination recorded the lowest mean (3.70), while appropriate inspection intervals recorded the highest (3.89). The finding indicates that the principal procedural components were established, but coordination and process integration remained comparatively weaker dimensions.

KEYWORDS: Ship Inspection; Ship Survey; Port Harcourt; Maritime Safety; Regulatory Compliance; Port State Control; Seaports.

1. INTRODUCTION

1.1 Background

Maritime transportation is a major component of international trade, and the dissertation cites UNCTAD (2024, 2025) in noting that more than 80% of global trade in goods is transported by sea. For Nigeria, shipping supports the movement of petroleum products, machinery, food, manufactured goods and industrial raw materials. The safety and efficiency of vessels operating in Nigerian waters therefore have implications for trade, energy security, industrial activities and economic development.

Ship inspection and survey are important regulatory mechanisms for determining whether vessels comply with national and international maritime requirements. The dissertation describes inspection as the systematic examination of vessel structure, machinery, equipment, documentation, crew arrangements and operational systems, while survey involves more detailed technical examination of hull structures, machinery, electrical systems, lifesaving equipment, fire protection, navigation and pollution-prevention systems (IMO, 2021, 2023, 2025b).

In Nigeria, NIMASA has statutory responsibilities relating to maritime administration, flag State inspection, Port State Control, ship registration, safety regulation, ship survey and certification. The dissertation also situates Port State Control within the Abuja Memorandum of Understanding framework for West and Central Africa (NIMASA, 2026a, 2026b).

Port Harcourt provides an important context because Rivers Port, Onne, terminals, jetties and offshore-support facilities accommodate different vessel types and oil-and-gas-related maritime activities. Effective inspection and survey therefore require competent personnel, adequate technical equipment, accurate information, effective scheduling and coordination among relevant stakeholders.

The dissertation identifies possible operational and institutional constraints including inspection scheduling, inadequate technical equipment, shortages of experienced surveyors, documentation delays, fragmented information systems, repeated information requests, inter-agency coordination difficulties, congestion and delays in correcting identified deficiencies. Optimization is consequently defined as improving efficiency without weakening regulatory thoroughness.

1.2 Statement of the Problem

The central problem is the potential gap between formal regulatory requirements for ship inspection and survey and the efficiency of their implementation in Port Harcourt ports. A system may contain appropriate inspection stages while still experiencing weaknesses in

scheduling, documentation, communication, coordination or follow-up. Conversely, inadequate inspection may allow deficiencies to remain unresolved. Objective One therefore establishes the actual presence and perceived operation of the principal inspection and survey procedures before broader optimization measures are considered.

1.3 Objective and Research Question

- Objective One: To examine the existing ship inspection and survey procedures adopted in seaports in Port Harcourt.
- Research Question One: What were the existing ship inspection and survey procedures adopted in seaports in Port Harcourt?

2. Literature Review

2.1 Ship Inspection and Survey

The dissertation conceptualises ship inspection as a systematic examination of vessel structure, machinery, equipment, safety arrangements, operational systems, certificates, records and crew-related requirements. It provides authorities with an opportunity to identify deficiencies and require corrective measures. Ship survey is treated as a more detailed technical assessment of structural condition, machinery, equipment, safety status and statutory compliance.

The reviewed literature demonstrates the importance of Port State Control and inspection in identifying deficiencies and improving maritime safety. Cariou et al. (2007a, 2007b, 2008) examined deficiencies, casualty risk and inspection effectiveness. Knapp and Franses (2009) provided evidence concerning the effect of Port State Control. More recent work reviewed in the dissertation uses dynamic inspection records, Bayesian approaches, machine learning and data-driven risk assessment to improve inspection selection and efficiency (Fan et al., 2022; Liu et al., 2022; Yang et al., 2023, 2024, 2025; Zhang et al., 2024).

2.2 Inspection Procedures

Inspection procedures include planning and scheduling, review of vessel documents and statutory certificates, physical examination, assessment of safety and pollution-prevention arrangements, documentation of findings, communication of deficiencies and follow-up. The dissertation also emphasizes risk-based targeting and information management. These elements are consistent with IMO procedures for Port State Control and survey and certification (IMO, 2024b, 2025c, 2025d, 2025e).

2.3 Digital Information and Coordination

Digitalization is discussed as a mechanism for improving access to vessel records, certificates, previous deficiencies, scheduling information and inspection histories. The IMO Maritime Single Window and electronic information exchange are identified as important developments (IMO, 2024a, 2026a). Port community systems and port-centric information integration are also discussed in the literature (Caldeirinha et al., 2020; Jiang et al., 2023; Nwogute et al., 2026).

2.4 Nigerian Port Context

The dissertation reviews Nigerian evidence on port efficiency and logistics, including studies by Nwanosike et al. (2016), Nze et al. (2020), Nnaukwu (2024), Nwaogbe et al. (2023), Adepoju (2024) and Dere et al. (2025). These studies provide wider operational context, while the Eyo study focuses specifically on ship inspection and survey processes.

3. Theoretical Framework

3.1 Systems Theory

Systems Theory, associated with von Bertalanffy (1968), views organizations and operational environments as interconnected systems. It is relevant because inspection performance depends on relationships among inspectors, surveyors, regulators, port authorities, recognized organizations, shipowners, agents and information systems. The theory supports attention to coordination and feedback.

3.2 Risk Management Theory

Risk Management Theory provides a basis for identifying, assessing, controlling and monitoring risks. In ship inspection it supports risk-based targeting, where vessel history, previous deficiencies, vessel type, age, flag performance and other indicators guide resource allocation. The dissertation draws on ISO 31000 and risk literature (ISO, 2009, 2018; Aven, 2016).

3.3 Institutional Theory

Institutional Theory explains how rules, norms and organizational expectations influence institutional behavior. Meyer and Rowan (1977), DiMaggio and Powell (1983) and Scott (2014) provide the basis for understanding coordination, formal responsibilities and regulatory conformity in maritime organizations.

4. METHODOLOGY

A descriptive survey design was adopted. The population was 600 maritime professionals and personnel in the Port Harcourt and Onne maritime environment. The sample size was 240, all 240 questionnaires were administered and 228 valid questionnaires were analysed. The response rate was 95.0%. A five-point Likert scale was used, with 3.00 as the decision benchmark. Descriptive statistics, Pearson Product-Moment Correlation and multiple regression were specified in the dissertation.

Table 1: Questionnaire Administration and Valid Response Rate.

Category	Frequency	Percentage
Administered	240	100.0%
Valid	228	95.0%
Excluded/incomplete	12	5.0%

Source: Uploaded Eyo M.Sc. dissertation, Table 4.1.

5. RESULTS AND ANALYSIS

Objective One examined the existing ship inspection and survey procedures. The dissertation reports a composite mean of 3.80 (SD = 1.02), above the 3.00 benchmark. All ten indicators were rated 'Agree'.

Table 2: Analysis of Existing Ship Inspection and Survey Procedures.

Item	Indicator	Mean	SD	Decision
B1	Procedures clearly defined	3.82	1.30	Agree
B2	Appropriate inspection intervals	3.89	1.28	Agree
B3	Documentation/certificates examined	3.82	1.33	Agree
B4	Physical inspection of structures/machinery/safety equipment	3.78	1.24	Agree
B5	Safety and pollution-prevention coverage	3.79	1.29	Agree
B6	Risk-based considerations	3.85	1.27	Agree
B7	Findings documented/communicated	3.79	1.24	Agree
B8	Follow-up inspections	3.82	1.26	Agree
B9	Consistent application	3.85	1.22	Agree
B10	Institutional coordination	3.70	1.32	Agree

Source: Uploaded Eyo M.Sc. dissertation, Table 4.7; Ship Inspection and Survey Optimization Questionnaire (SISOQ), 2026.

Table 3: Objective-One Composite Result.

Measure	Mean	SD	Interpretation
Existing inspection/survey procedures	3.80	1.02	Agreement

Source: Uploaded Eyo M.Sc. dissertation, Objective One discussion and Table 4.12.

6. DISCUSSION

The overall mean of 3.80 indicates that respondents generally perceived the existing inspection and survey framework as established and operational. This is consistent with the regulatory architecture described in the dissertation, in which inspection, survey, certification and Port State Control are connected elements of maritime safety administration (IMO, 2025b, 2025c, 2025d; NIMASA, 2026a, 2026d, 2026e).

The highest-rated item was the conduct of inspections at appropriate intervals ($M = 3.89$). Risk-based considerations and consistency of application followed at $M = 3.85$. These results suggest that recurring inspection and risk-oriented practices are recognized within the study environment.

Institutional coordination recorded the lowest mean ($M = 3.70$, $SD = 1.32$). This does not indicate absence of coordination; it identifies coordination as the least strongly endorsed of the ten procedural dimensions. The result is consistent with the dissertation's discussion of fragmented information systems, repeated documentation requests, unclear responsibilities and inter-agency communication as potential process constraints.

The result fits Systems Theory because ship inspection is not an isolated act. The process depends on the interaction of regulators, port authorities, classification organizations, shipowners, ship agents, terminal operators and technical personnel. Therefore, coordination can affect how effectively otherwise established procedures operate as a system.

The positive assessment of risk-based considerations is also consistent with the literature reviewed in the dissertation. Risk-based inspection seeks to concentrate regulatory resources where the probability or consequences of deficiencies are greater. The literature reviewed by Cariou and Wolff (2015), Fan et al. (2022), Liu et al. (2022) and Zhang et al. (2024) supports the use of information and risk indicators in inspection targeting.

7. Practical Implications

- Retain the established inspection framework while strengthening process integration.
- Improve inter-agency scheduling, documentation and communication.
- Continue developing risk-based inspection using reliable vessel histories and deficiency information.
- Expand digital inspection records and electronic information exchange.
- Strengthen follow-up of identified deficiencies and corrective actions.
- Monitor inspection completion time, deficiency closure time, repeat deficiencies and avoidable delays.

8. CONCLUSION

Objective One established that the principal ship inspection and survey procedures were generally present and operational in the Port Harcourt maritime environment. The overall mean of 3.80 exceeded the 3.00 benchmark and all ten indicators received an agreement decision. Coordination among relevant institutions was comparatively weaker and therefore represents a practical area for process improvement. Optimization should strengthen coordination, information management, consistency, risk-based targeting and follow-up without reducing regulatory thoroughness.

9. Contribution to Knowledge

- Presents the first objective as a standalone publication-oriented empirical assessment.
- Provides stakeholder-based evidence on the presence of inspection and survey procedures.
- Identifies institutional coordination as a comparatively lower-rated procedural dimension.
- Connects procedural evidence to Systems Theory, Risk Management Theory and Institutional Theory.

10. Source and Interpretation Note

All numerical results, item statements, sample information and references in this article were taken from the uploaded dissertation. The dissertation labels its Chapter Four analytical results as generated analytical data. No external dataset has been substituted.

11. Limitations and Future Research

Future studies can extend this objective by combining stakeholder survey evidence with administrative inspection records, vessel detention data, deficiency-closure histories and inspection completion times. Comparative studies could examine differences between Rivers Port, Onne and other Nigerian ports, while longitudinal research could assess whether digital inspection systems, standardized workflows and strengthened inter-agency coordination produce measurable changes in inspection timeliness and deficiency management. Such work would complement the present stakeholder-based evidence and further develop the optimization framework presented in the dissertation.

Publication note: The article preserves the terminology, objective wording, reported numerical results and complete reference trail of the uploaded M.Sc. dissertation. The added

discussion in this section is framed as a limitation and future-research interpretation of the source material and does not introduce a new dataset.

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