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MARITIME SAFETY REGULATORY COMPLIANCE AMONG SHIPPING OPERATORS IN RIVERS STATE, NIGERIA

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ABSTRACT

This article examines the extent of maritime safety regulatory compliance among shipping operators in Rivers State, Nigeria, within the wider study of maritime safety compliance and sustainable shipping development. The study covers the 2020–2026 period and focuses on Port Harcourt, Onne and Bonny. Maritime safety compliance is treated as a multidimensional practice involving adherence to applicable national laws and international standards, vessel inspection and certification, seafarer competence, safety management, emergency preparedness, environmental protection and regulatory enforcement. A quantitative cross-sectional survey framework was designed for an estimated population of 1,200 maritime professionals, with a proposed sample of 300 selected through proportionate stratified sampling. The dissertation's Chapter Four numerical results are explicitly identified in the source as simulated and illustrative, not verified field observations. Within that simulated dataset, mean scores for the major compliance constructs were above the midpoint of the five-point scale: inspection/certification (3.549), seafarer training (3.632), safety management/enforcement (3.464), and environmental compliance (3.446). The article therefore presents these values as illustrative perceptions rather than evidence of actual sector-wide compliance. The study's literature indicates that effective compliance depends on implementation, monitoring, corrective action and organisational commitment, not merely the existence of regulations (IMO, 2026e, 2026g; NIMASA, 2026a–f). The article concludes with a framework for validating compliance using verified field and administrative data.

KEYWORDS: Maritime Safety; Regulatory Compliance; Shipping Operators; NIMASA; Rivers State; Solas; Ism Code; Port State Control

INTRODUCTION

Maritime transport supports international trade, petroleum logistics, employment and supply-chain activity, but shipping operations also involve risks associated with navigation, machinery, cargo handling, human factors and marine pollution. The dissertation frames maritime safety compliance as the practical observance of national laws, international conventions, technical standards and operating procedures by shipowners, operators, seafarers and other stakeholders (IMO, 2023, 2026e).

The Nigerian Maritime Administration and Safety Agency (NIMASA) provides an important institutional link between international maritime standards and domestic operations. Its responsibilities include ship registration, flag State and port State control, inspection and certification, seafarer standards, marine pollution prevention, casualty investigation and other maritime safety functions (Federal Republic of Nigeria, 2007b; NIMASA, 2026a–f).

The Rivers State context is significant because Port Harcourt, Onne and Bonny contain ports, terminals, offshore support operations, waterways and related maritime services. The study therefore addresses a setting in which regulatory implementation has implications for vessel safety, operational continuity and environmental protection.

Objective and Research Question

Objective 1: To examine the extent of compliance with maritime safety regulations among shipping operators in Rivers State. The corresponding research question asks: To what extent did shipping operators in Rivers State comply with maritime safety regulations?

Conceptual and Empirical Basis

Compliance is distinguished from the mere possession of certificates. Effective compliance requires that safety requirements be implemented in routine operations, monitored, corrected and sustained. The source dissertation identifies SOLAS, STCW, MARPOL, ISM and ISPS as key elements of the international framework. NIMASA's inspection and certification system examines vessel condition, equipment, manning, safety management, security and applicable environmental requirements (IMO, 2026e–g; NIMASA, 2026c–f).

Empirical literature supports a multidimensional view. Håvold (2005) linked safety behaviour to organisational culture, management commitment and communication. Lappalainen et al. (2011), Lu and Tsai (2010), and Batalden and Sydnes (2014) similarly emphasised the interaction of management systems, human factors and operational behaviour. Knapp and

Franses (2007, 2009) and Cariou and Wolff (2011) demonstrate the relevance of inspection history, targeting and enforcement to vessel compliance.

The Nigerian literature also points to institutional and operational challenges in maritime development (Ndikom, 2006; Onwuegbuchunam, 2013; Njar & Okon, 2018). The dissertation identifies a contextual gap because prior studies did not sufficiently integrate regulatory compliance, safety performance, environmental protection and sustainable shipping within Rivers State.

METHODOLOGY

The study adopted a quantitative cross-sectional survey design. The estimated accessible population was 1,200 maritime professionals drawn from NIMASA, shipping companies, shipowners and managers, seafarers, port and terminal operators, ship agents, marine-surveillance personnel, marine service providers, offshore support operators and other maritime professionals. A sample of 300 was proposed using the Taro Yamane procedure and proportionate allocation across ten strata. Data were designed for collection with a structured five-point Likert questionnaire. The instrument covered NIMASA inspection/certification, seafarer training and safety management, environmental compliance, sustainable shipping, and general opinions (Researcher's dissertation, 2026).

Measures of Compliance

The questionnaire operationalised compliance through statements on regular vessel inspections, effectiveness of surveys in identifying safety issues, certification and seaworthiness, correction of deficiencies, follow-up inspections, enforcement of inspection outcomes and reduction of substandard shipping practices. Related dimensions included professional training, safety management, emergency preparedness, safety culture, communication, reporting, pollution prevention, waste management, oil-spill prevention, emissions control, MARPOL compliance and environmental monitoring.

Illustrative Results

Construct	Mean	Std. Dev.	Interpretation
Inspection/C certification	3.549	0.696	Illustrative moderate-to-high perception
Seafarer training	3.632	0.623	Illustrative moderate-to-high perception
Safety management/enforcement	3.464	0.610	Illustrative moderate-to-high perception
Environmental compliance	3.446	0.668	Illustrative moderate-to-high perception
Sustainable shipping	3.388	0.656	Illustrative moderate-to-high perception

Source: Researcher's design, 2026

DISCUSSION

The descriptive pattern is consistent with the conceptual position that compliance involves multiple layers. Vessel condition and certification are necessary, but compliance also depends on competent personnel, functioning management systems, emergency readiness and environmental controls. This is consistent with the systems-oriented safety literature (Checkland, 1981; Reason, 1990, 1997) and institutional perspectives that emphasise the role of rules and organisational responses (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; Oliver, 1991; Scott, 2014).

Environmental requirements also form part of contemporary compliance. MARPOL and the IMO environmental framework connect ship operations with pollution prevention, while the IMO 2023 GHG strategy broadens sustainability expectations. Energy management and technological responses can simultaneously affect environmental performance and operational efficiency (Acciaro et al., 2014; Cullinane & Cullinane, 2013; Bouman et al., 2017; Psaraftis & Kontovas, 2013; Geertsma et al., 2017).

Implications for Practice

Compliance assessment should combine documentary verification with physical inspection, operational observation and follow-up of deficiencies.

NIMASA and operators should maintain reliable digital records of inspections, certificates, deficiencies, corrective actions and closure dates.

Shipping organisations should integrate regulatory requirements into safety management systems, training, drills, reporting and management review.

Compliance monitoring should include environmental requirements and pollution-prevention performance rather than treating safety and environmental protection as separate systems.

Future empirical work should triangulate questionnaire responses with verified inspection, accident, certification and environmental records.

CONCLUSION

The dissertation provides a multidimensional framework for assessing maritime safety regulatory compliance among shipping operators in Rivers State. Its illustrative results show generally positive perceptions across the measured compliance constructs, but they do not constitute verified empirical evidence. The principal contribution of this objective-one article is therefore the operational framework it provides for a properly validated assessment of compliance during 2020–2026.

Research Limitation

The most important limitation is that the numerical Chapter Four results in the source dissertation were simulated. Accordingly, no claim in this article should be interpreted as a verified estimate of actual compliance among shipping operators.

REFERENCES

1. Acciaro, M., Ghiara, H., & Cusano, M. I. (2014). Energy management in seaports: A new role for port authorities. *Energy Policy*, 71, 4–12.
2. Batalden, B.-M., & Sydnese, L. K. (2014). Maritime safety and the ISM Code: A study of safety management in the maritime industry. *Maritime Policy & Management*, 41(4), 321–334.
3. Bouman, E. A., Lindstad, E., Rialland, A. I., & Strømman, A. H. (2017). State-of-the-art technologies, measures, and potential for reducing GHG emissions from shipping—A review. *Transportation Research Part D: Transport and Environment*, 52, 408–421.
4. Cariou, P., & Wolff, F.-C. (2011). Do port state control inspections influence flag- and vessel-specific outcomes? *Journal of Transport Economics and Policy*, 45(1), 1–18.
5. Checkland, P. (1981). *Systems thinking, systems practice*. John Wiley & Sons.
6. Cullinane, K., & Cullinane, S. (2013). Atmospheric emissions from shipping: The need for regulation and technological responses. *Transport Reviews*, 33(1), 1–15.
7. DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organisational fields. *American Sociological Review*, 48(2), 147–160.
8. Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st century business*. Capstone.
9. Fan, S., Zhang, J., Blanco-Davis, E., & Yang, Z. (2020). Maritime safety management and risk assessment: A review of contemporary approaches. *Safety Science*, 123, 104560.
10. Federal Republic of Nigeria. (2003). *Coastal and Inland Shipping (Cabotage) Act, 2003*. Federal Government Printer.
11. Federal Republic of Nigeria. (2007a). *Merchant Shipping Act, 2007*. Federal Government Printer.
12. Federal Republic of Nigeria. (2007b). *Nigerian Maritime Administration and Safety Agency Act, 2007*. Federal Government Printer.

13. Geertsma, R. D., Negenborn, R. R., Visser, K., & Hopman, J. J. (2017). Design and control of hybrid power and propulsion systems for smart ships: A review. *Applied Energy*, 194, 30–54.
14. Håvold, J. I. (2005). Safety culture in a Norwegian shipping company. *Safety Science*, 43(5–6), 395–414.
15. Hetherington, C., Flin, R., & Mearns, K. (2006). Safety in shipping: The human element. *Journal of Safety Research*, 37(4), 401–411.
16. International Labour Organization. (2006). *Maritime Labour Convention, 2006*, as amended. International Labour Organization.
17. International Maritime Organization. (2023). *2023 IMO strategy on reduction of GHG emissions from ships*. International Maritime Organization.
18. International Maritime Organization. (2026a). *Energy efficiency and operational carbon intensity*. International Maritime Organization.
19. International Maritime Organization. (2026b). *Human element*. International Maritime Organization.
20. International Maritime Organization. (2026c). *International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention)*. International Maritime Organization.
21. International Maritime Organization. (2026d). *International Convention for the Prevention of Pollution from Ships (MARPOL)*. International Maritime Organization.
22. International Maritime Organization. (2026e). *International Convention for the Safety of Life at Sea (SOLAS), 1974*. International Maritime Organization.
23. International Maritime Organization. (2026f). *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)*. International Maritime Organization.
24. International Maritime Organization. (2026g). *International Safety Management (ISM) Code*. International Maritime Organization.
25. International Maritime Organization. (2026h). *Marine environment protection*. International Maritime Organization.
26. International Maritime Organization. (2026i). *Safety management and safety culture*. International Maritime Organization.
27. Knapp, S., & Franses, P. H. (2007). A global view on port state control: Econometric analysis of the differences across port state control regimes. *Maritime Policy & Management*, 34(5), 453–482.

28. Knapp, S., & Franses, P. H. (2009). Does ratification matter and do major conventions improve safety? *Transportation Research Part E: Logistics and Transportation Review*, 45(2), 233–251.
29. Lu, C.-S., & Tsai, C.-L. (2010). The effects of safety climate on seafarers' safety behaviours in container shipping. *Accident Analysis & Prevention*, 42(6), 1999–2008.
30. Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363.
31. Mellin, A., & Håvold, J. I. (2013). Safety management systems and organisational safety culture in maritime operations. *Maritime Policy & Management*, 40(5), 1–15.
32. Ndikom, O. B. C. (2006). *The essentials of port management*. University of Ibadan Press.
33. Nigerian Maritime Administration and Safety Agency. (2026a). Flag State control. NIMASA.
34. Nigerian Maritime Administration and Safety Agency. (2026b). Legislation. NIMASA.
35. Nigerian Maritime Administration and Safety Agency. (2026c). Maritime safety and security. NIMASA.
36. Nigerian Maritime Administration and Safety Agency. (2026d). Port State control. NIMASA.
37. Nigerian Maritime Administration and Safety Agency. (2026e). Seafarers standards. NIMASA.
38. Nigerian Maritime Administration and Safety Agency. (2026f). Surveys and inspections. NIMASA.
39. Njar, G. N., & Okon, I. E. (2018). The impacts of Cabotage Law implementation on Nigeria's indigenous shipping industry: A study of the Onne Sea Port, Rivers State, Nigeria. *European Journal of Logistics, Purchasing and Supply Chain Management*, 6(4).
40. Oliver, C. (1991). Strategic responses to institutional processes. *Academy of Management Review*, 16(1), 145–179.
41. Onwuegbuchunam, D. E. (2013). Port performance evaluation and the competitiveness of Nigerian seaports. *European Journal of Business and Management*, 5(8), 12–19.
42. Psaraftis, H. N., & Kontovas, C. A. (2013). Speed models for energy-efficient maritime transportation: A taxonomy and survey. *Transportation Research Part C: Emerging Technologies*, 26, 331–351.
43. Reason, J. (1990). *Human error*. Cambridge University Press.
44. Reason, J. (1997). *Managing the risks of organisational accidents*. Ashgate.

45. Scott, W. R. (2014). Institutions and organizations: Ideas, interests, and identities (4th ed.). SAGE Publications.
46. United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. United Nations.
47. von Bertalanffy, L. (1968). General system theory: Foundations, development, applications. George Braziller.
48. World Commission on Environment and Development. (1987). Our common future. Oxford University Press.