

 Research Article

# Effect of Maritime Sector Reforms and Strategic Manpower Reorganization on Maritime Business Performance in Nigeria

University Ovuokeroye Edih<sup>1</sup> , Mina Enaikpobomene Irejeh<sup>1</sup> 

<sup>1</sup>Department of Maritime Economics and Finance, Nigeria Maritime University, Delta State, Nigeria

## Abstract

Reforms are deliberate initiatives designed by the government or top management of an organization to effect some strategic improvements in the state or that particular institution. From a sectoral perspective, maritime reforms are geared towards facilitating the operational standards and developing the maritime sector to meet global benchmarks in efficient operations and management. Reforms are strategic policy thrusts consciously mobilized to grow the capabilities and core competencies of an economy. However, critical action plans have not been developed to attract investments in the maritime sector, and it has been discovered that the Nigerian maritime sector is grappling with several challenges that can only be addressed by strategic reforms. The objectives of the study are to boost government revenue, attract foreign direct investments (FDIs), sustain bilateral trade relations, and generate employment opportunities for the Nigerian population. The study considered measures that would assist the government and port administrators in overhauling the maritime sector, enhancing service delivery, attracting investments, and ensuring a secure environment for enterprising maritime businesses. It employed multiple regression analysis to analyze the primary data generated by administering a set of questionnaires. Multiple regression analyses were significant for the study because they accommodate more than one variable and do not alter the effects or results of individual variables. Findings revealed that maritime sector reforms and manpower reorganization have a positive and significant relationship with maritime performance. It was also affirmed that several challenges are impeding the performance of the industry in Nigeria, such as overbearing political interference, poor conditions of ports, a dearth of infrastructure, port congestion, and so on. The study recommends aggressive, strategic maritime reforms and a concrete manpower reorganization plan because the business world is fast-growing without considering nations that refuse to catch up with the dynamics associated with the growth process. Moreover, the growth process is accelerated by improved human knowledge and technological advancements.

**Keywords:** Industry Performance, Manpower Reorganization, Maritime Reforms, Maritime Sector, Nigeria

✉ Correspondence  
University Ovuokeroye Edih  
oweilade123uni@gmail.com

**Received**  
November 17, 2025

**Accepted**  
March 14, 2026

**Published**  
July 1, 2026

**Citation:** Edih, U. O., & Irejeh, E. M. (2026). Effect of maritime sector reforms and strategic manpower reorganization on maritime business performance. *Journal of Research in Environmental and Science Education*, 3(2), 164–180.

DOI: [10.70232/jrese.v3i2.62](https://doi.org/10.70232/jrese.v3i2.62)

© 2026 The Author(s).  
Published by  
Scientia Publica Media



This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial License.

## 1. INTRODUCTION

Reforms are deliberate initiatives developed by governments and/or organizations to improve the status quo in terms of economic growth and development. Every nation that desires steady and sustainable growth must necessarily develop viable policies and implementable reforms that will enhance such a national vision. Growth and development are macroeconomic variables that explain the desires of nations to attain progressive experiences from less desirable economic and political situations to a more desirable and encouraging standard of living for their citizens, as well as the entire population. These socio-economic concepts are discussed with respect to the current economic state, current human status, and how resources are put to use. However, there are scholarly arguments that there can be no growth without development and/or that there can be no development without growth (Jinghan, 2008; Leonard, 2000). Arguably, the standard of living of a people and the overall development of a country are largely proportional to or

predicated on the implementation of major reforms and manpower reorganization - economic, technological, socio-cultural, and socio-political reform agendas, etc. Reforms can take different dimensions, such as economic /financial sector reform, political sector reform, maritime sector reform, and even private organizational reform.

Maritime sector reforms represent a comprehensive initiative usually specific to countries and/or international organizations that are constructively designed to improve legal frameworks, enhance efficiency, ensure safety, and foster sustainable maritime transactions. Furthermore, reforms are developed to attract private sector investments, facilitate global trade and commerce, and create a secure and friendly ecosystem for businesses. According to the Portable Document Format (PDF) of UNCTAD, IMO, World Bank, and national government agencies, the key initiatives of maritime sector reforms include legislative and regulatory updates, digitalization and technology, safety, security, environmental stewardship, and economic and operational efficiency (private sector participation, cabotage regimes, etc.).

Several countries engaged in maritime trade and commerce (i.e., maritime nations), such as America, Singapore, India, and South Africa, have carried out robust reforms to transform their maritime economies and management. Specifically, India's government embarked on key maritime reforms through legislation: the Indian Ports Act, 2025, the Merchant Shipping Act, 2025, and the Coastal Shipping Act, 2025. Other initiatives include Maritime India Vision 2030, Amrit Kaal Vision 2047, and the Sagarmala program. These legislations are necessary to meet global maritime standards (modernization), promote ease of doing business (efficiency), encourage green shipping and environmental compliance (sustainability), and boost shipbuilding, port infrastructure, and maritime trade (economic growth). Notable areas of the maritime reforms in America and South Africa are discussed in section 2.1 below.

Recently, some countries in Africa have been reinventing coups d'état, such as the Niger Republic, Mali, and Burkina Faso, to topple democratically elected governments in pursuit of more responsible leadership and good governance across the continent in the 21st century. Perhaps coups d'état have become one of the tools for reforming or restructuring the African continent economically or politically. Farazmand (2002) argues that reform or reorganization is conceived on political grounds. Reform actions generally mean mobilization for national independence, anti-corruption crusades, elite consolidation, expansion of economic markets and opportunities, foreign interests, and enriching powerful elites (whether civilian or military government). The government of Nigeria has, for the umpteenth time, carried out political sector reform, better called political restructuring, by amending the 1999 Constitution and the Electoral Act of 2010.

Again, maritime reforms and manpower reorganization are some of the many sectoral reforms required to speed up economic growth in Third World countries that are naturally endowed with coastal features. The importance of the maritime industry to the Nigerian economy cannot be overemphasized because it complements the oil sector by boosting revenue performance and providing economic opportunities (Omoke et al., 2019; Osadume and University, 2020; Imide et al., 2022). Nonetheless, it is bedeviled by numerous recurrent natural or human disasters posing major threats to economic activities, security of life, and property (Edih et al., 2023). The maritime world is prone to disasters and challenges occasioned by either natural or anthropogenic forces; whichever it is, the specific cause ought to be addressed either temporarily or permanently. In this study, challenges and disasters are synonymous terms (used interchangeably). Critical challenges need critical reform measures. Disasters are unexpected calamities (Faghawari and Edih, 2023), but when such events become recurrent, they metamorphose into predictable challenges. Generally, shipping and port operations are not insulated from disasters or challenges (Edih et al., 2023), and scholars have suggested humanitarian and logistical services as quick response measures to curtail or minimize the damage caused by disasters (Holgum-Veras et al., 2012; Overstreet et al., 2012).

The nature of disasters as well as challenges may create direct or indirect consequences on port infrastructures and the economy - disruptions of maritime transport, maritime tourism, and hospitality (Bell et al., 2005; Edih et al., 2023; Horspool and Fraser, 2010). Some challenges or disasters are peculiar to certain regions. The 2010 Chile earthquake and tsunami disrupted a commercial power station at San Antonio. The Kamaishi port, Japan, was damaged by three tsunamis: the 1896 Meiji Sanriku earthquake, the 1993 Shōro Sanriku earthquake, and the 2010 Chilean tsunami. In the USA, 80 major tsunamis occurred within 230 years, resulting in the loss of USD 80 million in ports, vessels, and properties (PIANC, 2010;

Turnbull and Hughes, 2017). It is obvious that tsunamis and earthquakes can shut down port operations and navigation by ships (Admire et al., 2014; Edih et al., 2023a; Noko, 2017).

However, the recurring challenges of the shipping business in Nigeria are different from earthquakes and/or tsunamis. Recession, being a double-edged sword, is a major disturbance to the global maritime industry (Edih et al., 2023a). Global economic recession usually slows down economic activities (including maritime affairs) (Shauna and Halima, 2024). It is a period characterized by declining economic activities, a drop in real GDP, real income, employment, etc. (Gnuschke, 2010). Many changes have taken place and are still occurring in the global maritime sector, which demand drastic actions from the stakeholders, especially in developing economies (OECD, 2011). The growth of GCE Blue Maritime Clusters was affected by the inferno of the Covid-19 pandemic (Erick et al., 2020, as cited in Edih et al., 2023a).

The Nigerian maritime industry is exposed to cyclical changes, political and financial crises, which are hindrances to the dire need for expansion and consolidation, as well as international trade (Edih et al., 2023a; Romina, 2020). Both external and internal pressures are compelling the closure of shipping companies and ports across the globe (Pocuca and Zanne, 2009). The Nigerian maritime sector is confronted with similar pressures, resulting in the redundancy of five or more ports/terminals out of the eight designated ports. Those moribund or redundant ports have exacerbated the rates of unemployment and crime across the country. Specifically, studies have identified recurrent challenges hampering the growth of maritime business performance in Nigeria, such as poor funding, a dearth of infrastructure, unsecured waterways, congestion of ports, delays in port calls, and poor infrastructure situated in maritime institutions (Nigeria Maritime University, Okerenkoko), among others (Edih et al., 2022; Hadiza, 2017).

Imide et al. (2022) contend that a repeat of a pandemic or epidemic is inevitable. This position is corroborated by Edih et al. Edih et al. (2022a) state that the Nigerian maritime industry is in dire need of “structural re-engineering and strategic reforms.” Furthermore, James and Gylfi (2007) had earlier put forward that improving the capacity and efficiency of port operations is a critical element in gearing up the Nigerian transport logistics networks, and a poor transport network limits economic activities and development. Though the need for maritime reforms has been merely recommended, such studies did not carry out data analysis or verify the empirical relationship between maritime reforms and strategic manpower reorganization vis-à-vis the Nigerian maritime sector’s performance (James & Gylfi, 2007). Hence, to cover the identified gap, two empirically testable hypotheses were addressed in the study:

H01: There is no positive and significant relationship between maritime reforms and maritime business performance in Nigeria.

H02: There is no positive and significant relationship between strategic manpower reorganization and maritime business performance in Nigeria.

## 2. LITERATURE REVIEW

### 2.1. Global Maritime Reforms

Basically, global maritime reforms are largely driven by International Conventions and Organizations, IMO (International Maritime Organization), and UNCLOS (United Nations Convention on the Law of the Sea). International Maritime Law is the embodiment of SOLAS (International Convention for Safety of Life at Sea), MARPOL (International Convention for the Prevention of Pollution from Ships), STCW (Standards of Training, Certification, and Watchkeeping for Seafarers), and MLC, 2006 (Maritime Labour Convention). These laws and conventions provide uniform standards for safety, environmental protection, training, and working conditions in the shipping industry. Every convention deals with specific aspects of maritime sector reform, safety protocols, prevention of pollution, seafarers, and labor conditions on vessels (Waltz et al., 2024).

#### 2.1.1. Maritime Sector Reforms in America

America, which is designated as a maritime nation like Singapore, China, and others, depends on safe, open, and reliable access to the oceans. It was observed by four congressmen that China dominates the world’s maritime trade because of decades of neglect by the U.S. government of its maritime industry.

The call to revitalize the maritime power of America was strategically reinforced by the statements attributed to the four congressmen:

*“We must now, before it is too late, make a once-in-a-generation investment in the future of America’s maritime power.”* - Congressman Mike Waltz.

*“Revitalizing the American maritime industry will supercharge our economy and strengthen our national security.”* - Senator Mark Kelly.

*“The competition between the United States and Communist China will define the 21st century, and nowhere is the conflict more potent than in the maritime domain.”* - Senator Marco Rubio.”

*“Since 2013, I have worked to revitalize the U.S. maritime industry so we can continue to project American sea power abroad during peacetime or war.”* - Congressman John Garamendi (Washington Core, 2025).”

The Trump administration is poised to develop the U.S. maritime sector through the following key areas: shipping, shipbuilding, and port operations. This move was necessitated by the strong resolve that maritime dominance is a national asset and a critical pillar for national security. The robust reforms were strengthened by deliberate government policy, executive actions, and legislative proposals. Other definitive measures include understanding geopolitics at sea (countering China and securing global chokepoints), reviving shipbuilding (industrial policy should meet strategic alliances), energy security and the Arctic Frontier; logistics, ports, and supply chain security; and international partnerships with Japan and South Korea. The strategic objectives proffered by the four Congressmen to position America beyond China are: one) measures to achieve maritime prosperity, two) ensuring maritime security, three) seeking allied and partner cooperation, and four) prioritizing American values, maritime independence, freedom of the seas, and the resilience of the oceans, seas, and inland waterways.

### 2.1.2. Maritime Sector Reforms in South Africa

The South African government embarked on comprehensive and ambitious maritime sector reforms, and the key initiatives demonstrated by the national action plan include (Tran, 2025).

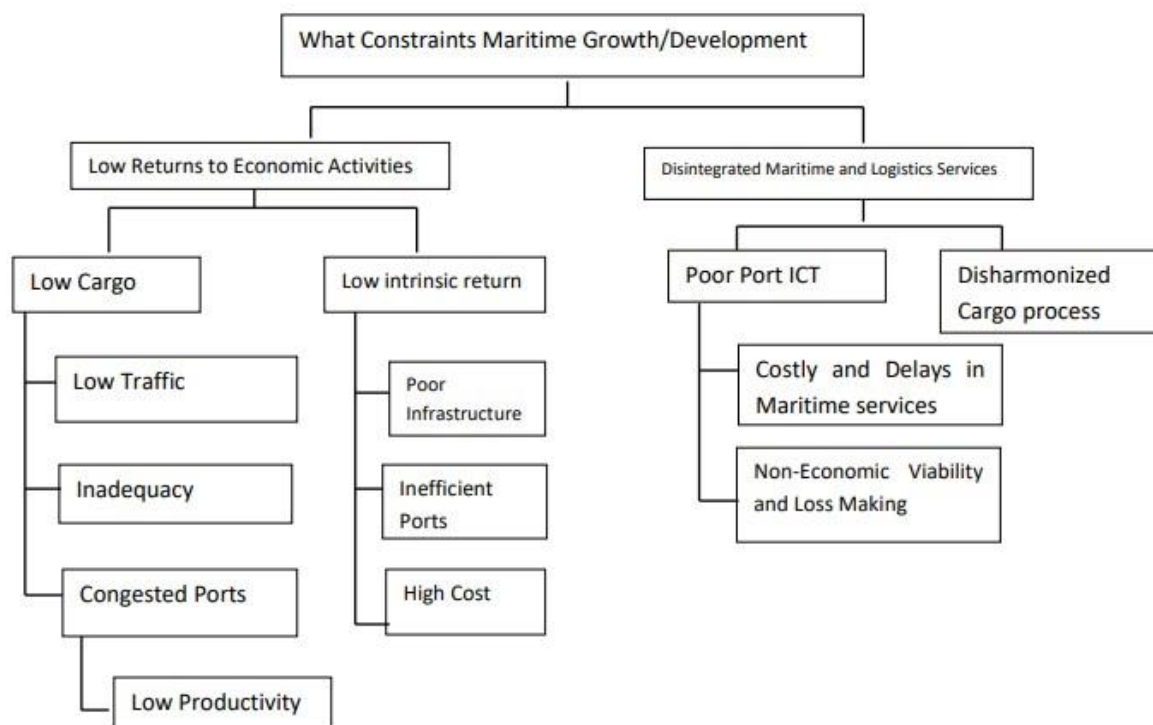
1. Decarbonization and green shipping: pragmatic efforts were made toward aligning maritime policies with the IMO’s Net-Zero Framework to reduce carbon emissions in the shipping subsector. In doing so, a national action plan was developed to: one) provide strategies for fuel transition, two) introduce green hydrogen (PtX fuels), and three) ensure low-carbon fleets. In addition, there were plans to improve port infrastructure and digital systems.
2. Ship registry and international competitiveness: In order to improve competitiveness and maintain efficiency with special reference to Singapore, the South African Ship Registry (CASR) sought radical and transformative reforms. Singapore’s maritime reforms served as a model in developing the national action plan.
3. Integrated coastal and marine management: The reform plan includes the formulation of a legal framework for the sustainable management of coastal zones and the establishment of the Marine Spatial Planning Framework to harness the economic, social, and environmental objectives for marine resources.
4. Other areas focused on by the massive reform are maritime security, economic empowerment, and international cooperation (Comprehensive Maritime Transport Policy, CMTP).

## 2.2. Importance and Challenges to Growth of the Maritime Industry in Nigeria

Ports have been portrayed several times as gateways to international trade and commerce (USAID, 2010; Okechukwu, 1994; Edih, 2022; Kahyarara and Simon, 2018; Omoke et al., 2019; Osadume and University, 2020). This connotes that port infrastructure is critical to maritime transportation and trade development across the globe and that the largest share of international trade passes through the ports. The International Chamber of Shipping estimated that 90 percent of global trade in goods is transported by ships. Moreover, containerization is a major boost to maritime transportation, leading to a reduction in freight costs. In 2016, UNCTAD’s review indicated that maritime trade expanded by 2.5 percent, and seaborne trade surpassed 10 billion tons.

Maritime trade has helped governments in achieving the threefold pillars of the Sustainable Development Goals (SDGs)- Economic, Social, and Environmental Pillars (Kahyarara and Simon, 2018). The volume and type of cargo have a direct bearing on shipping costs, and understanding the theories of economies of scale and management, both at sea as well as in the ports, is germane to effective port performance. Failure to do so may result in port congestion and diseconomies of scale in the ports. Kahyarara and Simon (2018) revealed that freight rates are far higher from China to North America than from North American exports to China. Similarly, freight rates for containerized imports into Africa are higher than those for its exports. It sounds unimaginable to compare freight rates to and from the route with varied charges. The differences in freight rates depend on trade direction, and such imbalances can be corrected by market mechanisms and reforms. Based on the connection between ports and maritime transportation, any disruptions to port management and operations affect global trade and the economy.

The study by Kahyarara and Simon (2018) examined opportunities and growth diagnostics of maritime transportation in Eastern and Southern Africa and found a range of factors that led to port inefficiency. The identified constraints are longer container dwell times, delays in vessel traffic clearance, lengthy documentation processing, and container dwell times per crane hour. Additional factors include inefficient rail and road networks, insecurity, port congestion, delays at checkpoints, and diversions arising from frequent maintenance, among others. The authors developed a growth diagnostics framework that revealed different categories of constraining factors to maritime growth and development.



**Figure 1.** Constraints of Maritime Growth

*Source:* Kahyarara and Simon (2018). The authors recognize the above-mentioned constraints to maritime growth as the “Growth Diagnostic Framework for Maritime Development.”

Okpara and Enyioko (2022) highlight a comprehensive list of factors affecting seaport cargo operations in Nigeria, which are: a reduction in the number of vessels calling at the ports due to a stringent revenue generation formula, poor data collection on port operations, a poorly computerized system, port congestion, high container dwell time, and high turnaround time for vessels and trucks. Also mentioned are inadequate port facilities for berthing, inefficiency, and poor logistics arising from the lack of standard port facilities, lack of capital/mismanagement of capital, poor incentives for investments, poor transport networks, lack of innovation and creative technologies, inadequate shipping management skills, and inadequate superstructures. The study did not fail to identify government interference and the usual bureaucratic resistance, endemic corruption, subversion of international conventions, rules, and regulations

of operations, piracy in the waterways, as well as the dominance of foreign vessels, deficient policy on exports, and lack of regulatory oversight.

According to Stopford (2016), “for 100 years ships improved by evolution but the system did not. The liner and tramp service continued unchanged and needed a different system - a revolution”. The above quote is a deliberate desire to effect transformational changes and workable reforms since 1966. Many challenges have evolved after 50 years, such as shipping cycles growing bigger, a persistent slow growth rate of sea trade, the need for regional trade transformation, shipyard capacity management, the zero emissions agenda, harnessing digital technology, and developing business models. Comparing the transformation in the maritime world with respect to the participation of OECD nations and their inputs, Stopford (2016) posits that in 1966, the maritime world was dominated by OECD members, whose imports accounted for 75% of cargo, raw materials, and exported manufactures. Industrial shipping was developing, driving the need for specialized ships and chartering of fleets, with liners graduating into containerization, while cargo handling costs escalated. However, in 2016 (an interval of 50 years), OECD member nations imported only 37% of cargo, while non-OECD nations accounted for 63%, with a prediction to move to 75%. Non-OECD member nations have six times the population of OECD nations, even as bulkers and liners struggle with mature technology. Due to the rapid changes encouraged by globalization, the world economy needs new services driven by shipping investors with a new vision and drive for smart services.

Rhetorically, Stopford (2016) asked that since Yamaha has a zero-emission bike, can there be a technology that will guarantee a zero-emission ship cargo? Predictively, by 2066, seaborne trade would amount to 46 billion tonnes or more, presupposing higher carbon emissions in the already heated atmosphere. Stopford proposed three ways of changing the maritime business model: building smart ships equipped with much better QA and efficiency standards; a smart fleet that will manage the smart ships as a transportation factory (like a BMW factory); and smart global logistics integrating the whole process from door to door.

### **2.3. Maritime Reforms and Economic Development**

The Maritime Security Sector Reforms (MSSRs) guide (USAID, 2010) is a comprehensive analytical tool designed to: one, map and assess the maritime sector; two, assess existing security sector capabilities and gaps, and three, enable, collaborate, coordinate, and improve maritime safety and security. The guide discusses the structure of maritime security, maritime governance, maritime civil and criminal authorities, maritime defense, maritime safety, maritime response and recovery, and the maritime economy. According to the MSSRs guide, “the maritime realm encompasses oceans, seas, lakes, coastlines, and harbors that are vulnerable to a range of threats such as unreported illegality, unregulated fishing, environmental degradation, smuggling, trafficking in persons, narcotics trafficking, piracy, proliferation of weapons of mass destruction, and terrorism.

It is contended that the maritime sector, as a microcosm of the nation, shares its characteristics. If the nation has a deficit of political will, public consensus, and administration over governance, political competition, and capabilities, it will in turn affect the maritime sector. Therefore, any improvement in maritime governance and/or administration, law enforcement, and safety will generate progressive ripples across the national economy. Maritime security has a nexus with national security. It is intertwined with the criminal justice sector, civil justice system, and commercial sector of the economy. In fact, maritime reforms are fundamental to national defense, law enforcement, and the social and economic goals and objectives of coastal and landlocked states. A vibrant maritime economy is a necessary promotion of the national economy, because even landlocked countries are negotiating access to the coastlines through neighboring maritime nations.

It has been argued that state-owned enterprises (SOEs) in West Africa have become dumping grounds for political cronies. The sea-ports of such countries, Ghana, Nigeria, and India, epitomize bureaucratic red tape, pilfering, bribery, and corruption, leading to high prices for imports and inflation. The author identified the unstable political economy of developing nations as a major impediment to development and reforms. He states as follows, “The privatization of maritime state-owned enterprises (SOEs) in West Africa is unlikely to result in increased efficiency because the region’s maritime problems stem not necessarily from ownership but from interactions between the structural constraints in world

shipping and the management style and the domestic and regional politics of these countries” (Okechukwu, 1994).

As observed by James and Gylfi (2007), the Nigerian government attempted ambitious port reforms in the 1990s. The need for extensive reforms in the ports was compelled by a low level of efficiency, long turnaround times for ships, increased container dwell times, and too many weeks for unloading and reloading of ships, instead of the 48-hour standard time in other regions, such as Asia. In addition, an overstaffed and unproductive workforce (a pointer for training, motivation, and a revised recruitment policy), theft of cargo, and excessive port charges were concerns. The worst scenario is the level of infrastructure decay of the ports. The Haskoning Study classified “the Nigerian port administration system as an example of a tool port approach”.

The tool port approach means a combination of both the public sector controlling authority and private companies’ operational and management styles. This model is sustained by short and medium-term contracts. The study recommended the “Landlord Approach” for the management of the Nigerian port system. In the Landlord Approach, the public sector has the role of planning and regulating the port system in tasks related to safety, security, and the environment. It also maintains ownership of port-related land and basic infrastructure. While the private sector is responsible for marine and terminal operations, construction, purchase, and ownership of superstructures and equipment.

The study of James and Gylfi (2007) further extends the landlord model to include institutional reforms such as;

- The federal government of Nigeria, through the Ministry of Transport, should develop and improve maritime policy.
- Divide the Nigerian Port Authority NPA into several autonomous authorities.
- Make private companies responsible for port operations and services.
- It should undertake concession contracts to structure the relationship between public sector landlords and private sector terminal operators.

According to the Haskoning Study, the Bureau for Privatization of Enterprises (BPE) and the Nigeria Port Authority (NPA) executed 20 concession agreements in 2006. The first and biggest of these concession contracts for the Apapa Container Terminal in Lagos was signed in September 2005 with APM Terminal (owned by the Danish Shipping Company, A.P Moller-Maersk Group).

In Igbodo (2018), there exists a positive relationship between ship haulage, berthing, and customs duties with the balance of payments, external reserves, and total revenue, respectively. The study noted that the maritime sub-sector has not been fully explored, exploited, or galvanized for improved growth of the Nigerian economy. It is suggested that the government should embark on formulating policies for revitalizing the sector, enhancing investments, controlling customs duties, stopping invasions, and boosting indigenous participation. There are hidden and untapped maritime treasures due to the enormous expanse of coastline and navigable waterways, as Nigeria has over 823 kilometers of coastline and about 4,000 kilometers of navigable waterways (Afolabi, 2015; Chizea, 2018). According to the quote in [40], “whoever commands the sea, commands trade, and whoever commands trade, commands the riches and by implication, commands the world itself.” This means that the maritime world is akin to world trade and commerce. Madueke (2005) opines that the maritime industry is the artery of the Nigerian economy, while Finitell (2014) states that it is the catalyst for socio-economic development and international competitiveness in a dynamically globalized economy.

“Any reduction in customs levies and tariffs will lead to a boost in the world’s trade and deregulation of the port sub-sector, resulting in an increase in competition. Prior to port reforms, competition between ports was nonexistent. Deregulation has a number of benefits - increased competition between sub-regional and national levels, competition in port markets, dismantling of liner conferences, competition across modes of transportation, etc (African Bank, 2010). Weak institutions pose threats to trade through different channels: poor management, delays at the borders, high taxes and customs fees, extortion along the import and export chain, and inefficient regulation and control. The African port sub-sector has embraced institutional reforms but has yet to adopt global best practices. The results are disparities in measures of assessing port efficiency. In North Africa, average costs for 20-ft containers are 370 in Casablanca, 210 in

Rades-Tunis, and 70 in Alexandria. Average port transit delays in Alexandria are 15 days, and 9 days in Casablanca and Tunis African Bank, 2010; Kostianis, 2005).

According to the African Bank (2010), the focus of port reforms covers the following broad areas: expansion and modernization of container handling capacity, stimulation of economic growth, reduction of government expenditures, increased private participation, and improved general infrastructure. The combination of two essential characteristics of ports makes port reforms complicated, from the public goods perspective (coastal protection works/services) and the private goods (cranes, quays, and other hard infrastructures). The interplay between the public and private sectors demands a proper understanding and coordination by the supervisory authorities. The port authorities in Nigeria, which are the Nigerian Ports Authority (NPA) and the Nigeria Maritime Administration and Safety Agency (NIMASA), are shouldered with pivotal responsibilities in harnessing the symbiotic relationship between the public and private sectors in maritime administration and operations. The provision of public goods creates positive externalities and social benefits that cannot be provided by commercial operators due to high budgets.

The report/review of the African Bank (2010) suggests some policy measures by demonstrating a clear vision before privatization; coordination between port institutions, customs, transport ministers, and labor unions; ensuring pro-competitive policies, reducing documentation, and implementing single window processing to drive efficiency and encourage autonomy for port authorities, as well as simplifying and harmonizing procedures between countries. Farazmand (2002) considers administrative reforms a worldwide phenomenon. Reform movements of the 20th century were centered mainly on building institutions, bureaucratization, nationalization, and organizational capacity building for economic growth and development. However, the current global trend of reforms is to promote private and corporate-driven markets. The new ideology is anchored in privatization, commercialization, marketization, and promoting a number of institutional changes. These reforms are directly influenced by the United States and Western donors - the World Bank, IMF, and the World Trade Organization (WTO). Such a vigorous push has compelled developing economies to hurriedly embrace globalization and promote the interests of globalized corporate elites. The need to reorganize traditional governance structures is to improve administrative capabilities, eliminate duplication of functions and waste, and ensure the productive use of public resources.

Farazmand also argues that many countries, notably those in Latin America and some nations in Asia, have realized the fallacy of the "supreme marketplace ideology." Therefore, there is a sincere cause to establish a satisfactory balance between the provision of both public and private goods to the global market. This reveals the adoption of the principles of prudence and pragmatism in government administration (Farazmand, 2002).

According to Mushtaq (2008), the interdependent good governance reform agenda includes: one, policies to improve government accountability; two, improved accountability reforms and decentralization; three, policies to counter corruption and rent seeking; four, anti-corruption policies, liberalization, WTO restrictions on subsidies, and IMF fiscal requirements.; five, policies to stabilize property rights across the board; and six, policies to improve the rule of law, reduce expropriation risk, and strengthen the judiciary.

Ferdinand (2013) examines donor practices in the use of budgetary aid to promote economic and structural reforms in developing countries, especially in Africa. It was observed that the increase in budgetary aid had a limited impact on the design and execution of economic reforms in developing economies. To remedy this deplorable situation, budgetary aid should be repositioned as a catalyst for structural transformation, reorganization, and the creation of job opportunities in recipient nations.

#### **2.4. Manpower Reorganization and Economic Growth**

No organization can exist without the inputs and competence of the personnel who are in charge of managing it. Manpower resourcing, recruitment, selection, training, and placement are vital and critical decisions taken by a team of managers or management to enhance organizational growth. The management or body of administrators should shoulder the responsibility of fashioning recruitment strategies or models that can deliver qualified and competent employees for the firm or institution. The productivity of a firm is a direct consequence of the quality, competence, and morale of the workforce. The failure of the workforce means the failure of the organization, and the inept and lackadaisical attitudes of these employees

will result in poor performance, liquidation, and the eventual winding up of the company and/ or agency. Based on the central and indispensable roles played by the directors, managers, and other workers of an agency or organization, it is apt to say that there is a need for manpower reorganization in the maritime sector due to the pressures from competitors and the effects of globalization on maritime services.

It is most worrisome that NIMASA and NPA, the government-established agencies empowered to control the maritime sector, are filled with political cronies. These, in turn, recruit workers based on nepotism at the grave expense of merit and competence, showing adverse effects on their performance. No wonder there is alleged corruption and low productivity in the maritime sector corridor. Therefore, a comprehensive manpower reorganization model for any enterprise must factor in the following: principles of motivation, training, recruitment policy, placement, commission, general emoluments, and exposure to internationally acclaimed maritime businesses in the world, etc.

## 2.5. Impact of Maritime Reforms, Manpower Reorganization on Identified Specifics

Maritime reforms in infrastructure are the backbone of security management. Infrastructure reforms energize and build up human capital, enhance environmental stewardship, and promote sustainable maritime operations. Strategic manpower reorganization also improves the competencies of maritime personnel, enhances the use, adherence, and enforcement of professional ethics and conduct, and creates environmental awareness through the educational learning process and training schedules for industry stakeholders. On specific and measurable impacts, below are detailed relationships:

1. **Security Management:** There is a mutual cohesion between maritime infrastructure and security reforms (MSSR), which includes the modernization of ports, improvement and enforcement of cybersecurity, promotion of maritime governance and administration, enhancement of maritime safety, demonstrating efficiency, and economic viability. MSSR is a means of executing integrated approaches to combating threats such as sea piracy, cyberattacks, and illegal activities, thus creating resilience and efficient maritime trade and security.
2. **Human Capital Development:** Maritime reforms are measures for developing human capital or knowledge required for sustainable maritime operations in the 21st century. Skilled professionals are key to driving and implementing new reforms and policies in the maritime sector. In this respect, research on human capital development focuses on building expertise through formal education (Maritime University, Academy, or Institute), special training, and mentoring programs. The knowledge gained will propel innovations, creativity, agility, competitive stamina, and overall productivity in the maritime sector. Such a knowledge-driven workforce will boost economic growth and development. Gerald, Ndikom, Nwachukwu, and Nwokedi (2019) suggested that the federal government of Nigeria develop robust human capital development strategies by educating and training personnel (seafarers) on new skills, rules and regulations, laws, etc.
3. **Capacity Building in Environmental Stewardship:** Maritime operations take place in the environment; hence, there should be compatibility between them. The environment is nurtured and sustained by promoting green technology. This focus is driven by an increase in efficiency, digitalization, and decarbonization, which entails the global sustainability standard. In order to achieve this standard, reforms should focus on port modernization, infrastructure, green technology, and compliance with environmental regulations. Other measures include dredging operations, smart ports, port rehabilitation, and multimodal connectivity. Regulatory and institutional reforms should incorporate private sector participation, strengthen compliance, and foster regional cooperation, etc. Chad (2025) argues that the maritime sector and its operations impact the environment through carbon emissions, waste, and other activities. To curb these negative and harmful effects on the environment, maritime administrators should employ a regulatory framework to balance the equation between environmental stewardship, sustainability, and maritime operations. The IMO and NIMASA's regulatory frameworks are desirable for maintaining environmental stewardship.
4. **Sustainable Maritime Operations:** No doubt, maritime reforms are intended to boost maritime operations in all their ramifications. Maritime reforms are inclusive measures to strategically position the maritime sector in promoting national economic growth and diversification. The Nigerian Maritime Administration and Safety Agency, NIMASA, is poised to consolidate on the 2025 gains to advance maritime operations in 2026. It is intended to generate about 10,000 new opportunities in the maritime

sector through deliberate reforms. Port reforms and ocean resource management have recorded huge revenues and other gains, and the Nigerian Local Content is taking steps to reshape the maritime sector for more indigenous participation and capacity building.

## 2.6. Theory of Reforms and Reorganization

Theoretically, Farazmand (2002) reflected on the body of knowledge in organizational theory to buttress the need for collective action required for implementing reforms, whether administrative, maritime, or political reforms, etc. The author studied and dissected various but connected theories to unravel the explicit meanings and approaches for developing and executing reforms or reorganizing the unsatisfactory socio-political and socioeconomic states of a nation. The combined knowledge and understanding of classical theories, formal theories of organization, change, and development in contemporary market theory, and the newest organizational elite theory (which demands a fundamental change and reform in the structures and processes of administrative systems) will foster the formulation and execution of reforms and the reorganization of manpower.

According to Peters (1992), administrative reforms and reorganization are categorized into three broad areas, namely: purposive model (top-down approach), environmental model (bottom-up), and institutional model. He identified three basic importance of these models to governance/or modern administration. First, the models serve as useful tools for understanding and explaining the methods and purposes of reform and reorganization embarked on by the government. Second, the models represent frameworks and guides for organizational analysis and restructuring government. Third, they assist the government or policymakers in understanding the connection between reform and revolution in contemporary political, economic, and administrative environments. These specifics and somewhat separate models are designed to solve a particular problem or purpose. Nonetheless, the combination of the trio will necessarily achieve huge success, where some distinctions between reorganization, structural changes, and reforms have been adequately clarified.

Drawing from the insights of Farazmand (2002), Peters (1992), and Pollitt (1984), it is thus stated that reforms can be initiated from two perspectives: one, by the government or its agents, in line with the outlined short-term, medium-term, and long-term objectives or set goals. Two, due to the prevailing market competition, economic and political changes in a country. However, both forms of initiatives are complementary to the overall development of the nation. This study is carried out based on the latter perspective, which involves the environmental pressures necessitating holistic maritime reform (s) and manpower reorganization for national development.

## 3. MATERIALS AND METHODS

The study generated primary data by administering a set of questionnaires to 350 respondents selected from NPA, NIMASA, and 15 private maritime companies. The primary data were analyzed using correlation and multiple regression analyses. The two hypotheses were structured econometrically using two models, and the independent variables, which are maritime reforms and manpower reorganization, were proxied with six sub-variables. Maritime reforms were represented by the instruments of public-private partnership (PPP), improved maritime infrastructure (MIF), and maritime security threats (MST), while manpower reorganization was represented by regular manpower training services (RMT), improved technology and data analysis (DTC), and networking with maritime organizations (PMO).

### 3.1. Model Specifications

In line with the general multiple regression formula, the model specified for the study is as follows:

$$MBP_1 = f(MRs) \quad \text{eqtn1}$$

$$MBP_2 = f(MPRO) \quad \text{eqtn2}$$

Initiating the econometric process to transform equation (1) to (3), and equation (2) to (4) respectively, we arrived at;

Hypothesis one model:

$$MBP_1 = a_0 + b_1 (PPP)_{t-1} + b_2 (MIF)_{t-2} + b_3 (MST)_{t-2} + e_{t-n} \tag{eqtn3}$$

Hypothesis two model:

$$MBP_2 = a_0 + (b_1 (MPT)_{t-1} + b_2 (PMO)_{t-2} + b_3 (DTC)_{t-3} + e_{t-2} \dots \tag{eqtn4}$$

Where;

MBP<sub>1</sub> and MB<sub>2</sub> mean improving maritime business performance. MRS means the maritime reforms proxy with Public-Private Partnership (PPP), Maritime Infrastructures (MIF), and Maritime Security (MST).

MPRO refers to the manpower reorganization proxy with Manpower Training (MPT), a partnership with the World Maritime Organization (WMO), and the adoption of full-scale technology/data computation (DTC).

*e* means the error term

b<sub>1</sub>- b<sub>3</sub> are the coefficients

“<sub>t-1 - t-3</sub>” is the period of time

### 3.2. A Priori Expectation

There will be a positive and significant relationship between maritime reforms, manpower reorganization, and the Nigerian maritime business performance.

## 4. RESULTS

This section explains the statistical analysis of data using tables, and the findings are interpreted in this section. Results from the correlation and multiple regression analyses are shown in Tables 1, 2, and 3 below.

**Table 1.** Correlation Analysis of the Six Sub-Variables

Var.	PPP	MIF	MST	RMT	PMO	DTC	MBP
PPP	1.000						
MIF	0.4575	1.000					
MST	0.5372	0.4261	1.000				
MPT	0.5119	0.6242	0.4444	1.000			
PMO	0.5251	0.5880	0.5179	0.6451	1.000		
DTC	0.4689	0.5038	0.4402	0.5132	0.6132	1.000	
MBP	0.5413	0.4362	0.5511	0.6121	0.6035	0.5641	1.000

Source: SPSS Computation, 2025

**Table 2.** Analysis of the Effect of Maritime Reforms on Maritime Business Performance

Source	SS	Df	Ms	Number of obs	345	
Mode 1	144.6487	3	48.2162	F (3,246	224.19	
Residual	52.9072	246	0.21507	Prob > F	0.0000	
Total	197.5559	249	0.7933	r-squared	0.7322	
				Adj R Squared	0.7289	
				Root MSE	0.4637	
MBP	Coef	Std. err.	T	P > /t/	(95% confidence	Interval.
PPP	0.11000	0.03878	2.84	0.005	0.03361	0.18639
MIF	0.12652	0.03735	3.39	0.001	0.05295	0.20009
MST	-0.70180	0.03987	17.6	0.000	0.62326	0.78034

Source: SPSS Computation, 2025.

Table 1 shows the correlation between the two independent variables (maritime reforms and manpower reorganization) and the dependent variable (maritime business performance). Each of the two independent variables was proxied with three sub-variables. The correlation analysis revealed a positive relationship among the six sub-variables and the dependent variable (maritime business performance). MBP

correlates with PPP, MIF, MST, MPT, PMO, and DTC at  $r = 0.5413, 0.4362, 0.5511, 0.6121, 0.6035,$  and  $0.5641,$  respectively.

**Table 3.** Analysis of the Effect of Manpower Reorganization on Maritime Business Performance

Source	SS	Df	Ms	Number of obs	346
Model 1	106.7346	3	35.7072	F (3,341)	10883
Residual	80.4213	341	0.3269	Prob F	0.0000
Total	187.1559	344	0.7516	Square	0.5651
				Adj R Squared	0.5651
				Root MSE	0.5717
MBP	Coef	Std. err.	T	Pr/t/	95% conf. interval
MPT	0.2841	0.4803	5.92	0.000	0.1895
PMO	0.2838	0.0464	5.69	0.000	0.1724
DTC	0.3080	0.0504	6.11	0.000	0.4395

Source: SSPS Computation, 2025.

## 5. DISCUSSION

The study analyzed the two hypotheses using Tables Two and Three above. In Table 2, the impact of maritime reforms on maritime business performance was demonstrated by three sub-variables, namely: public-private partnership (PPP), maritime infrastructure (MIF), and maritime security threats (MST).

According to Table Two, “PPP” showed a positive and significant effect on “MBP” ( $B = 0.11; p = 0.005 < 0.05$ ); “MIF” had a positive and significant impact on “MBP” ( $B = 0.1265; p = 0.001 < 0.05$ ), and “MST” revealed a negative and significant effect on “MBP” ( $B = -0.7018; p = 0.000 < 0.05$ ). The adjusted R-squared of the model is 0.7289, which implies that a 72.89% change in maritime business performance is brought about by strategic and transformative maritime reforms, and the remaining 27.11% may represent other factors, such as a stable transitory government, good governance, and the rule of law, etc., not tested in the study. It is also interpreted that since the F-statistic (0.0000) is less than the level of significance (0.05), at least one of the sub-variables, “PPP,” “MIF,” and “MST,” is a significant predictor of “MBP.”

These findings are in line with the previous studies (Imide et al., 2022; Edih et al., 2022a; James and Gylfi, 2007; Kahyarara and Simon, 2018; Stopford, 2016; USAID, 2010; African Bank, 2010; Farazmand, 2002). Imide et al. (2022) and Edih et al. (2022a) emphasized the dire need for maritime re-engineering in the 21st century, while James and Gylfi (2007) outlined measures that will ensure the efficiency of maritime services. Stopford (2016) supported the maritime revolution (implementation of human resources reforms). USAID (2010) highlighted the need for maritime sector security reforms to address the multidimensional security challenges. Additionally, African Bank (2010) supported port and institutional reforms, modernization of container handling capacity, etc., and Farazmand (2002) suggested administrative reforms anchored in privatization, commercialization, marketization, and promotion of institutional changes. Furthermore, Kahyarara and Simon (2018) and Okpara and Chinuwa (n.d.) provided a comprehensive list of factors that affect maritime business performance as a pointer to maritime reforms.

Also, Table three revealed the effects of manpower reorganization (MPRO) on maritime sector performance (MSP). The effect of “MPRO” on “MBP” was tested using three sub-variables, namely, regular manpower training (MPT), partnership with maritime organizations (PMOs), and deployment of technology and data computation (DTC). The regression analysis showed that “MPT” had a positive and significant effect on “MBP” ( $B = 0.284; p = 0.0000 < 0.05$ ); “PMOs” had a positive and significant impact on “MBP” ( $B = 0.2838; p = 0.0000 < 0.05$ ), and “DTC” revealed a positive and significant relationship with “MBP” ( $B = 0.3080; p = 0.0000 < 0.05$ ). The adjusted R-square (0.565) showed that a 56.5% change in maritime business performance is caused by maritime reorganization (MPT, PMO, and DTC). The remaining 43.5% indicates other probable factors that were not considered in the study recruitment process, motivational factors, etc., while the F-statistic ( $0.0000 < 0.05$ ) means that the tested variables are significant predictors of likely changes in maritime business performance.

These results are supported by studies conducted by Imide et al. (2022), Stopford (2016), and Peters (1992). The importance of restructuring the maritime industry and reorganizing the human resources component was canvassed by Imide et al. (2022) and Stopford (2016). Also, Peters (1992) theorizes that

administrative reforms and reorganization entail the combination of purposive, environmental, and institutional models, which advocate for holistic and comprehensive reform initiatives.

### **5.1. Implications of Maritime Reforms and Findings**

Generally, the implications of maritime reforms are to boost maritime infrastructure, synergize security, improve operations, meet international standards, and sustain economic growth and development. However, the implications of this study on the identified specifics are as follows:

1. **Policymakers:** Reforms are products of decisions made by policymakers and the government. Better-informed decisions are initiated through research on further reforms and reorganization. This study would create deeper and broader awareness of the need to implement the advocated reforms in the maritime sector.
2. **Maritime authorities:** Maritime authorities such as NIMASA, NPA, and the Ministry of Maritime and Blue Economy would be empowered by the findings and recommendations provided in the study to address key strategic issues and areas in the maritime sector. This will position the maritime sector for improved performance in the trajectory of sustainable growth and development.
3. **Industry stakeholders:** Improved infrastructure will enhance competitiveness and better performance. It will boost morale, innovation, and productivity. Stakeholders will be aware of and implement maritime ethics and regulations. Thus, it will meet global maritime standards.
4. **Environmental Education:** The maritime sector and its operations cannot be separated from the environment. The issues of carbon emissions, waste, and other harmful activities would be urgently and thoroughly addressed through enlightenment. Education and regular training imbue stakeholders with the ability to comply with rules and regulations.
5. **Researchers:** Research is a continuous and planned process of investigation in order to address a specific problem or issue. Every research project provides room for another complementary research study. This particular study will motivate researchers to conduct further research in the suggested areas or widen the scope of other identified gaps.

## **6. CONCLUSION AND RECOMMENDATIONS**

It is evident that progressive reforms are pillars for economic rejuvenation, growth, and development in any given country. Based on the nature of sectoral reforms, they are designed to achieve specific objectives; however, such sectoral restructuring will definitely impact the overall growth of the economy. The intention of maritime sub-sector reform, deployment of effective management skills, and manpower reorganization is to create huge investment opportunities, develop an effective and efficient workforce, and enlarge the revenue performance base of the Nigerian maritime sector. Therefore, a holistic maritime reform agenda should consider the following concerns;

First, the Nigerian government is advised to eliminate the political bias that has been hindering the progress of the maritime sub-sector. The appointment of political cronies to manage the NPA and NIMASA, and the abandonment of ports in certain regions of the country, are man-made factors retarding the prospects of the sector.

Second, the government should construct new ports in strategic locations along the coastline and refurbish the existing Warri and Calabar clusters of ports. This will help decongest the Lagos cluster of ports. These innovations will, in turn, provide huge job opportunities for the teeming unemployed youth in the country.

Third, the waterways should be dredged to allow large ships to dock at the Nigerian ports. The shallow waterways are a huge challenge for the transport business, preventing the docking of major ships at these ports and resulting in a significant loss of investments and revenue to the national treasury.

Fourth, more private sector participation should be encouraged by providing concessions, building maritime infrastructure, and ensuring maritime security along the coastline and waterways. The government should partner with private maritime security services in conjunction with neighboring littoral countries to enhance security synergy.

Fifth, the federal government should enact admiralty laws that will strengthen and liberalize the maritime sector, amend existing laws to accommodate current international standards and demands, and abolish outdated laws.

Sixth, the government should also fund and boost the infrastructural needs of the two maritime institutions in Nigeria. For effective capacity building in the sector, both lecturers and administrators of these institutions should be paid a special salary or allowance to boost their morale for teaching and training employable workers for the maritime sector.

Seventh, the need for collaboration and partnership with the World Maritime Organization (WMO) cannot be overstated. Such relationships will facilitate networking with other nations across the globe engaged in maritime trade and commerce.

Eighth, the government should build a road and rail network to and from the ports that will facilitate the processes of decongesting the ports and avoid the issue of recurrent demurrage.

Ninth, the automation or computerization of port operations and the documentation process will reduce container dwell time.

Tenth, a reduction of tariffs, import duties, and other charges will attract ships calling at the ports.

Finally, manpower reorganization is key with respect to the regular training of workers in the use of modern technologies and providing efficient services while networking with maritime organizations.

### 6.1. Suggestions for Further Studies

The scope of the study is limited to the six subvariables that were tested, namely maritime reforms proxy with public and private partnership, maritime infrastructure, and maritime security, while the subvariables for manpower reorganization are training, partnership with world maritime organizations, technology, and data computation adoption. The authors relied on the quantitative data generated from the field and interpreted it based on results from the multiple regression analyses. Therefore, further studies may be carried out in testing the following variables: compliance with environmental standards, adoption of green technologies, sustainability-oriented decisions, and UNESCO's ESD agenda, among others.

**Acknowledgments:** We acknowledge the management of the Nigeria Maritime University, Okerenkoko, for providing this platform. We also acknowledge the staff of NIMASA, NPA, and the selected private companies for their responses to the questionnaire.

**Research Ethics.** Ethical procedures were maintained in this study.

**Data Availability Statement:** All data can be obtained from the corresponding author.

**Conflicts of Interest.** There are no conflicts of interest.

**Funding:** This study received external funding from the Tertiary Education Trust Fund (TETFund) of Nigeria.

## REFERENCES

- Admire, A. R., Dengler, L. A., Crawford, G. B., Ushi, B. U., Greer, S. D., & Wilson, R. I. (2014). Observed and modeled currents from the Tohoku-oki, Japan and other recent tsunamis in Northern California. *Pure and Applied Geophysics*, 171, 3385–3403. <https://doi.org/10.1007/s00024-014-0797-8>
- Afolabi, T. O. (2015). Building economic capacity through maritime infrastructure development. *A 3 day annual exhibition and conference- Nigeria. Regenerating economic growth through the maritime sector, Nigeria maritime expo, NIMAREX, 2015 at Eko Hotel and Suites, Victoria Island, Lagos, 2015.*
- African Bank (2010). *Reforms and the regulatory framework of African ports.* [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/African%20Development%20Report%202010\\_CH%203.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/African%20Development%20Report%202010_CH%203.pdf)
- Bell, R., Cowan, H., Dalziell, E., Evans, N., O'Leary, M., Rush, B., & Yule, L. (2005). Survey of impacts on the Andaman coast, southern Thailand following the great Sumatra-Andaman earthquake and tsunami of

- December 26, 2004. *Bulletin of the New Zealand Society for Earthquake Engineering*, 38(3), 123–148. <https://doi.org/10.5459/bnzsee.38.3.123-148>
- Chad, F. (2025). *The relationship between maritime environmental regulations and NIMASA's regulatory framework*. [https://www.researchgate.net/publication/390740633\\_The\\_Relationship\\_Between\\_Maritime\\_Environmental\\_Regulations\\_and\\_NIMASA's\\_Regulatory\\_Framework](https://www.researchgate.net/publication/390740633_The_Relationship_Between_Maritime_Environmental_Regulations_and_NIMASA's_Regulatory_Framework)
- Chizea, C. N. (2015). *Development of the maritime industry: issues and challenges*. Cited in Igbodo, R. O. (2018). *Performance of the maritime sub-sector and economic growth in Nigeria, 1995-2015* [Dissertation, Nnamdi Azikiwe University, Awka].
- Edih, I. O. (2020). Communal participation and good governance in Nigeria. *International Journal of International Relations, Media and Mass Communication Studies*, 6(1), 35-56.
- Edih, U. O. (2022). Critiquing the impact of Chapter 2 of the 1999 Constitution on good governance in Nigeria. *Academic Journal of Current Research*, 9(10), 42-65. URL:[www.cirdjournal.com/index.php/ajcr/index](http://www.cirdjournal.com/index.php/ajcr/index)
- Edih, U. O., Dbright, A. O., Nwafili, A. K., & Faghawari, N. D. (2023). Effect of emergency management humanitarian services and transport logistics on port operations in Nigeria: empirical assessment. *Journal of Maritime Research*, 20(1), 37-48. <https://www.jmr.unican.es/index.php/jmr/article/view/680>
- Edih, U. O., Igemohia, F. & N.D. Faghawari, N. D. (2022a). Prospects and challenges of maritime business in Nigeria. *Direct Research Journal of Management and Strategic Studies*, 13(1), 8-13. <https://doi.org/10.26765/DRJMSS20967731>
- Edih, U. O., Igemohia, F., & Faghawari, N. (2022). The effect of optimal port operations on global maritime transportation: a study of selected ports in Nigeria. *Journal of Money and Business*, 2(2), 173-185. <https://doi.org/10.1108/JMB-07-2022-0037>
- Edih, U. O., Onoriode, H. O., & Faghawari, N. D. (2023a). Global recession and shipping revenue performance in Nigeria: a focus on the Covid-19 pandemic. *Journal of Maritime Research*, 20(2), 162-170. <https://www.jmr.unican.es/jmr/article/view/758>
- Faghawari N. D. & Edih, U. O. (2023). Disaster management and relief operations in a volatile environment: a survey of the Niger-Delta region. *Scientific Journal of Accountancy, Management and Finance*, 2(4), 283-291. <https://doi.org/10.33258/economic.v2i4.820>
- Farazmand, A. (2002). *Administrative reforms in developing nations*. Bloomsbury Academic
- Ferdinand, B. (2013). *Promoting economic reforms in developing countries rethinking budgetary aid?*. Working Paper Series N° 167 African Development Bank, Tunis, Tunisia.
- Finitell, D. W. (2014). Government investment policy on transport and economic growth: the Nigerian experience. In *Nigeria economic society- rekindling investments for economic development in Nigeria* (pp. 243-255). The Nigerian Economic Society.
- Gerald, J.T., Ndikom, O., Nwachukwu, T.C., & Nwokedi, T. C. (2019). Challenges of local human capacity development in Nigeria's maritime industry. *International Journal of Scientific and Engineering Research*, 10(3), 932-1004.
- Gnuschke, J. E. (2017). *Economic development and regional growth*. Routledge
- Hadiza, B. U. (2017). The ports as strategic bases for economic development: A presentation by the Managing Director, Nigeria Port Authority, Hadiza B. Usman, at the nation's newspapers economic forum on Thursday, May 4. <https://nigerianports.gov.ng/wp-content/uploads/2017/06/PortStrategic.pdf>
- Holgum-Veras, J., Jaller, M., N. Van-Wassenhove, L. N., Perez, N., & Wachtendorf, T. (2012). On the unique features of post disaster humanitarian logistics. *Journal of Management Operations*, 30(7), 494-506. <https://doi.org/10.1016/j.jom.2012.08.003>
- Horspool, N. A., & Fraser, S. (2016). An analysis of tsunami impact on lifelines. *GNS Report*, 2350-3424. <https://www.eqc.govt.nz/assets/Publications-Resources/1605-Analysis-of-tsunami-impacts-to-lifelines.pdf>
- Igbodo, R. O. (2018). *Performance of the maritime sub-sector and economic growth in Nigeria, 1995-2015* [Dissertation, Nnamdi Azikiwe University, Awka]. <https://phd-dissertations.unizik.edu.ng/onepaper.php?p=792>
- Imide, O. I., Edih, U. O., Faghawari, N. D., & Osadume, R. C. (2022). Maritime business performance, economic diversification, and real gross domestic product growth in emerging economies: a study of the Nigerian maritime sector. *Journal of Maritime Research*, 19(1), 26-35. <https://www.jmr.unican.es/index.php/jmr/article/view/702>

- James, L., & Gyfi, P. (2007). Port reform in Nigeria: upstream policy reforms kick-start one of the world's largest concession programs. <https://documents.worldbank.org/pt/publication/documents-reports/documentdetail/896041468288986977>
- Jinghan, M. L. (2008). *Advanced economic theory: micro and macro economics* (12th ed.). Vrinda Publication Ltd, India.
- Kahyarara, G. & Simon, D. (2018). Opportunities and growth diagnostics of maritime transportation in Eastern and Southern Africa. In *Maritime Transport in Africa: Challenges, Opportunities, and an Agenda for Future Research. UNCTAD Ad Hoc Expert Meeting*, 11 September 2018, Mombasa, Kenya. [https://unctad.org/system/files/non-official-document/dtdlbtbs-AhEM2018d1\\_Kahyarara\\_en.pdf](https://unctad.org/system/files/non-official-document/dtdlbtbs-AhEM2018d1_Kahyarara_en.pdf)
- Kostianis, D. (2005). Main issues and challenges for ports and port operations. Presentation at the *Training Seminar on Port Reforms*, Euromed, Marseille.
- Leonard, O. O. (2000). *Economic policy and economic development in English-speaking Africa*. Malthouse Press Limited, England.
- Madueke, O. (2005). *Maritime sub-sector and the Nigerian economy*. Maritime Forum.
- Morales, J. (n.d) *Four pillars of IMO*. <https://www.scribd.com>
- Mushtaq, H. K. (2008). *Governance and anti-corruption reforms in developing countries: policies, evidence, and ways forward*. G-24 Discussion Paper Series. No. 42 November 2008. [https://unctad.org/system/files/official-document/gdsmdpbg2420064\\_en.pdf](https://unctad.org/system/files/official-document/gdsmdpbg2420064_en.pdf)
- OECD Policy Roundtables. <https://www.oecd.org/daf/competition/48837794.pdf>
- Okechukwu, C. I. (1994). The limits of public sector reforms: evidence from the maritime sector. *Journal of Developing Areas*, 28(3), 393-424. <http://www.jstor.org/stable/4192360>
- Okpara, G., & Enyioko. N. (2022). *Seaport cargo operations: issues and challenges in Nigeria as a developing economy*. <https://doi.org/10.2139/ssrn.4165726>
- Omoke, V., Aturu, A. C., Nwaogbe, R. O., Ajiboye, A. O., & Diugwu, I. (2019). Analysis of the impact of port operations on Nigeria's economy: a focus on Apapa seaport. *Port Harcourt Journal of Social Sciences*, 7, 278-287. [http://irepo.futminna.edu.ng:8080/jspui/bitstream/123456789/7641/1/Analysis%20of%20the%20Impact%20of%20Port%20Operations%20on%20Nigerian%20Economy\\_A%20Focus%20on%20Apapa.pdf](http://irepo.futminna.edu.ng:8080/jspui/bitstream/123456789/7641/1/Analysis%20of%20the%20Impact%20of%20Port%20Operations%20on%20Nigerian%20Economy_A%20Focus%20on%20Apapa.pdf)
- Organisation for Economic Co-operation and Development. (2011). *Competition in ports and port services*.
- Osadume, R. C. & University, E. O. (2020). Port revenue performance and economic growth: the Nigerian Port Authority experience, 2010-2019. *Logi-Scientific Journal of Transport and Logistics*, 11(2), 1-11. <https://doi.org/10.2478/logi-2020-0010>
- Overstreet, R. E., Hall, D., Hanna, J. B., & K. Rainer, R. K. (2011). Research in human logistics. *Journal of Humanitarian Logistics and Supply Chain Management*, 1(2), 1-5. <https://doi.org/10.1108/20426741111158421>
- Peters, B. G. (1992). Government reorganization: a theoretical analysis. *International Political Science Review*, 13(2), 199–217. <http://www.jstor.org/stable/1601532>
- PIANC. (2010). *Mitigation of tsunami disasters in ports* (MarCom Report 112). <https://www.pianc.org/publication/mitigation-of-tsunami-disasters-in-ports/>
- Pocuca, M. & Zanne, M. (2009). The impact of the global economic crisis on the dry bulk shipping industry. *Pomorstvo*, 23(2), 477-493. <https://hrcak.srce.hr/file/70351>
- Pollit, C. (1984). *Manipulating the machine: changing the pattern of ministerial departments, 1960-83*. Allen & Unwin.
- Romina, A. (2020). Maritime challenges in crisis times. *Pomorski Zbornik*, 59(1), 51-60. <https://hrcak.srce.hr/file/362793>
- Shan'una, L & Halima, M, (2024). Impact of economic recession on Nigeria's macroeconomic performance. *International Journal of Operational Research in Management Social Sciences and Education*, 10(2), <https://doi.org/10.48028/ijprds/ijormsse.v10.i2.05>
- Stopford, M. (2016). Workshop on maritime clusters and global challenges. *50th anniversary of OECD WP6*. [https://thecoalhub.com/wp-content/uploads/attach\\_820.pdf](https://thecoalhub.com/wp-content/uploads/attach_820.pdf)
- Tran, T. M. (2025). The status of the marine economy in south africa forward to sustainable development and implications for Vietnam's maritime strategy. *Journal of Research in Environmental and Science Education*, 2(1), 48-56. <https://doi.org/10.70232/jrese.v2i1.12>

- Turnbull, J. M., & Hughes, M. W. (2017). *Anticipating tsunami impact in Marlborough*. Research report, 2017-04. Civil and National Resources Engineering, University of Canterbury, New Zealand.
- USAID. (2010). *The maritime security sector reforms (MSSRs) guide*. <https://2009-2017.state.gov/documents/organization/154082.pdf>
- Waltz, M., Kelly, M., Rubio, M., & Geramendi, J. (2024). Congressional guidance for a national maritime strategy: reversing the decline of America's maritime power, April 30. <https://www.kelly.senate.gov/wp-content/uploads/2024/05/Congressional-Guidance-for-a-National-Maritime-Strategy.pdf>
- Washington Core (2025). *Reviving America's maritime power*. <https://www.wcore.com/reviving-americas-maritime-power/>