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Effects Of Revenue Leakages on Maritime Sector Growth in Nigeria

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ABSTRACT

This study examined the Effects of Revenue Leakages on Maritime Sector Growth in Nigeria. The objective of the study is to assess the scenarios that aid revenue leakages and its effect on maritime sector growth in Nigeria. The research work employed the Keynesian economic theory to explain the effect of leakage on capital in the economy. Theory believes that when capital becomes scarce, that the government may to inject money to stimulate the economy afresh. The study used primary data sources of stratified random sampling of 60 respondents and tested same using ANOVA/SPSS statistical tools at the 5% confidence level. The result indicates that the relationship between import waiver and maritime gross domestic product is negative and insignificant, implying that a 1% rise in import and duty waiver, will cause a corresponding fall in maritime gross domestic product. Similarly, there exist a positive and significant relationship between customs duty and maritime sector growth. This implies that for every increase in the maritime sector growth, there is an increase of about 32% in custom duty fraud within the year in view; while, the relationship between cargo diversion and maritime gross domestic product is positive (0.52). The implication of this is that for every increase in the maritime sector, leads to an increase of 52% in cargo diversion in Nigeria ports. It shows that revenue leakages in the maritime sector can be stopped by decreasing the percentage of cargo diversion in Nigeria port. The study recommends among others that the federal government should as a matter of necessity digitalize the custom inspection process to reduce vessel waiting time and demurrage incurred by shippers.

1. Introduction.

1.1. Background to the Study.

Nigeria, as an oil-producing and exporting country as well as a consumer country, has a sizable market for foreign goods due to its large population (Igbokwe, 2016). In this regard, the maritime industry, through the revenue generated on a yearly basis, holds the key to her growth and development. As a country that relies heavily on imported goods, the maritime sector is a critical industry with enormous potential that, if fully realized, could ultimately save Nigeria from the current economic crisis (Nigeria Maritime magazine).

Nigeria, with a coastline stretching over 850 kilometers and abundant natural resources, boasts immense potential for the maritime sector to emerge as a major driver of economic growth. The maritime industry encompasses a vast array of activities, including shipping, ports, logistics, shipbuilding, and fisheries. A thriving maritime sector can unlock a multitude of benefits for Nigeria, such as increased foreign direct investment, job creation, export diversification, and enhanced regional and international trade.

However, despite its inherent potential, the Nigerian maritime sector faces numerous challenges that impede its growth and development. One of the most critical issues plaguing the sector is revenue leakage. Revenue leakage refers to the loss of income that should rightfully be collected by government agencies or private companies involved in maritime operations. These leakages can occur through various means, including inefficiencies, corruption, and loopholes in regulations.

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1.2. Statement of the Problem.

The maritime industry is crucial to the import-dependent economy of oil producing Nigeria in that it provides the means for the transportation of passengers, exportation of crude oil, agricultural and finished products, importation of raw materials, equipment, petroleum products, finished goods etc. The maritime industry is also crucial to Nigeria's economy because it facilitates trade and commerce, promotes tourism, creates employment opportunities, generates revenue and develops related economic activities and industries, maritime institutions and infrastructure, apart from national pride, defense and security. To emphasize, given the current decline in Nigeria's oil revenue, the maritime sector has the potential to generate trillions of dollars and naira in government revenue through import and export duties, registration fees for ship ownership and mortgages, taxes, and levies paid to its maritime agencies, in addition to other contributions to the country's gross domestic product (Igbokwe, 2016).

The problem of revenue leakage in the Nigerian maritime sector is a significant barrier to its growth and development. Leakages deprive the sector of crucial resources that could be used for infrastructure development, capacity building, and improved service delivery. This, in turn, weakens the sector's competitiveness and attractiveness to international investors.

The specific aspects of the problem that this research aims to address include:

- Identifying the major sources of revenue leakage in the Nigerian maritime sector. Common sources include under-declaration of cargo, diversion of revenue, inefficiencies in cargo handling, and corruption within regulatory agencies.
- Quantifying the extent of revenue leakage by analyzing data from relevant government agencies and industry stakeholders. This will provide a clearer picture of the magnitude of the problem and its impact on the sector's potential.
- Understanding the impact of revenue leakage on maritime sector growth. Leakages lead to a shortage of funds for essential investments, hinder service delivery within ports and terminals, and create an unfair playing field for legitimate businesses.

By addressing these aspects, this research aims to contribute to a more comprehensive understanding of the challenges associated with revenue leakage in the Nigerian maritime sector. This understanding is crucial for developing effective strategies to curb leakages and unlock the sector's full potential for growth.

With the potential to generate approximately N7 trillion per year, the maritime industry plays an important role in any sector, particularly in a consuming nation like Nigeria, where the majority of our consumption is imported. Indeed, the Bureau of Statistics reported that the country's imports increased by 38.1 percent while exports increased by 63.3 percent in the second quarter of 2016. Despite these figures, shipping companies and terminal operators are complaining about low cargo handling (Adenubi,2018).

1.3. Objectives of the Study.

The focal point of this study is to scrutinize the scenarios that aid revenue leakages and its effect on maritime sector growth in Nigeria. The specific objectives of the study are:

1. To assess the effects of import duty waiver as a revenue loss on Nigeria maritime sector contribution to gross domestic product.

2. To determine the effects of cargo diversion to other nearby ports as a revenue leakage in Nigeria maritime sector contribution.

3. To evaluate the effect of custom duty frauds as a revenue leakage on Nigeria maritime sector gross domestic product contribution.

1.4. Research Questions.

1. How has import duty waiver affected revenue leakages in Nigeria's maritime sector growth?

2. To what extent has cargo diversion to other Neighbouring ports affected revenue leakages in Nigeria's maritime sector growth?

3. What effect does custom duty fraud has on revenue leakage in Nigeria's maritime sector GDP contribution?

1.5. Research Hypothesis.

H_{o1}: Import duty waiver has no significant effect on revenue leakages in Nigeria's maritime sector growth.

H_{o2}: Cargo Diversion to Other Neighbouring ports has no significant effect on revenue leakages in Nigeria's maritime sector growth.

H_{o3}: Customs duty fraud has no significant effect on revenue leakages in Nigeria's maritime sector GDP contribution.

1.6. Significance of the Study.

This research on the effects of revenue leakages on maritime sector growth in Nigeria holds significant importance for various stakeholders. Some of these significances include:

Policymakers: The findings of this research can provide valuable insights to policymakers when formulating strategies to address revenue leakages in the maritime sector. By identifying the primary sources and quantifying the extent of the problem, policymakers can develop targeted interventions to plug the leaks and improve revenue collection efficiency.

Regulatory Agencies: The research can equip regulatory agencies like the Nigerian Ports Authority (NPA) and Nigerian Maritime Administration and Safety Agency (NIMASA) with a deeper understanding of the vulnerabilities within their systems that enable revenue leakage. This knowledge can be used to strengthen internal controls, improve transparency, and enhance enforcement mechanisms.

Private Sector: A thriving maritime sector benefits private sector businesses involved in shipping, logistics, and other related activities. By mitigating revenue leakages, the research can contribute to a more efficient and competitive maritime environment. This fosters a level playing field and creates a more attractive business climate for private investors.

Academic Community: This research contributes to the existing body of knowledge on maritime sector development in Nigeria, particularly with regards to the challenges associated with revenue leakages. The findings can inform further research efforts on this topic and stimulate discussions on best practices for tackling revenue leakages in the maritime sector.

2. Literature Review.

2.1. Conceptual Review.

Studies by Eme et al. (2015) highlight the prevalence of revenue leakages in developing economies like Nigeria. These studies demonstrate how leakages can hinder economic growth and development across various sectors, including the maritime sector.

2.1.1. The Maritime Industry and Nigeria's Economic Growth.

Since 90% of all global trade is conducted by water, economists anticipate that Nigeria's maritime sector would significantly contribute to the GDP of the nation. The maritime sector is a vital lifeline for nations like Singapore, contributing around 7% to its GDP. Transportation of people and goods across water is a function of the maritime sector. It makes sure that Nigeria, a significant exporter of crude oil, engages in global trade. Along with on-shore operations like shipping, ship and port construction, and towing, it also encompasses offshore activities like fishing, the exploitation of seabed resources, and towing.

About 85% of the country's exports and imports go through its seaport, but Nigeria's marine industry struggles to compete with other nations on the continent and around the world. The industry's average GDP contribution to Nigeria is 1.6%, according to a snapshot of the sector. In the previous five years, the industry has expanded by an average of 3%, with Q4 2016 seeing the biggest growth in recent memory at 8%. In the final quarter of 2019, it increased by 1.87% just before COVID-19 affected global trade. The business faces a number of problems, many of which are man-made; nonetheless, despite efforts to improve things with measures like executive orders, the industry's poor growth persists. One of the main issues impeding Nigeria's maritime industry's expansion is port inefficiencies. Effective ports reduce the cost of transportation and make it easier for a nation to import and export goods. Unfair fees and formalities, as well as murky trade and transportation norms and regulations, have turned into significant trade barriers, which have a negative impact on investment and job development.

According to the Lagos Chamber of Commerce and Industry (LCCI), the country's GDP declines by 3% annually as a result of the lack of business-friendly seaports, terminals, and traffic. The deliberate delays imposed by government employees in Ministries, Departments, and Agencies (MDAs), for example, might be eliminated, which would increase the GDP contribution of Nigeria's marine sector. A 2018 analysis from the LCCI explained that actions by MDAs accounted for about 65% and 80% of import clearance and export processing time respectively.

Nigeria would become more competitive if its ports operated efficiently because traders would be motivated to do so. Since the high cost of processing them would no longer be passed on to customers, the price of goods and services would likewise decrease (Bob et al, 2015). The Integrated National Security and Waterways Protection Infrastructure, also known as "The Deep Blue Project," was officially launched by President Muhammadu Buhari of the Federal Republic of Nigeria on June 10, 2021, according to the 2021 Review of the Nigerian Maritime Industry by Ataimewon (2022). NIMASA, in collaboration with the Federal Ministry of Transportation and other security agencies such as the Nigerian Navy, Nigerian Air Force, Nigerian Army, Department of State Services, Nigerian Police Force, Marine Police, etc., was to implement the Deep Blue Project, which is Nigeria's operational strategy to combat piracy and maritime offenses in Nigeria's territorial waters up to the Gulf of Guinea ("GoG"). For the benefit of all parties involved in the Nigerian maritime industry, it is anticipated that the Deep Blue Project's successful execution will result in a decrease or elimination of the need for war risk insurance for ships operating in Nigerian waters.

Critical Dimensions of The Maritime Economic Contribution.

The significant importance of maritime transportation to the Nigerian economy can be categorized into the following areas, namely:

a) Seaborne Transportation: The geophysical characteristics of the region contributed to the development of waterborne transportation, but so did the region's economic reliance on the exportation of agricultural goods and crude oil, as well as the importation of machinery, equipment, and raw materials for its industries and finished goods for its densely populated consumers. Nigeria's economy would have suffered had it been a landlocked nation without access to the sea, making it difficult and expensive for its citizens to conduct local and international trade.

b) Export processing zones (EPZs) are renowned for luring a large number of export businesses (manufacturers), who in addition to generating income, offer jobs to locals.

c) Oceanic Extractive Resource Exploitation: Nigeria's offshore oil and gas resources are enormous and relatively unexplored when compared to onshore exploration. In this context, it is also underlined that fishing and aquaculture have enormous economic potential and are essential components of the maritime economic contribution.

d) Oceanic Assets Governance: One major obstacle to Nigeria's ability to map, identify, develop, and control its oceanic assets has been the country's inability to properly inventory its oceanic assets beyond its oil and gas resources. The ocean serves as a major source of food, energy, minerals, health, pleasure, and transportation for hundreds of millions of people, and this indicates a serious shortfall in ecological accounting, which combines hydrographic capacity and assets audit competence (Nigeria's Maritime Industry Forecast, 2018 - 2019).

2.1.2. Revenue Leakages in The Maritime Industry.

The loss of revenue from businesses, which frequently goes unnoticed, is referred to as revenue leakage. Although it is possible to stop revenue leaks, many companies fail to implement the necessary safeguards because they frequently go unnoticed. Long-term effects on a company's revenue will be more significant the more leaks that are concealed in an end-to-end revenue generation process. Revenue leaks can occur for a number of different reasons, and the causes differ from firm to business. However, the effects are always the same: slowed growth, lost revenue, and missed quotas. Even worse, it is virtually impossible to identify income leaks, particularly if the company continues to use manual procedures.

Revenue leakage is any unintended loss of money from a business. Unfortunately, the likelihood that this may cause an issue for organizations increases as a result of modern technology's sophistication and the availability of customer options. While leakages can occur on both the revenue and expenditure sides, the most frequent cause of revenue leakage is under- or not invoicing customers for the goods and services they get. These elements may contribute to the causes:

- enterprises' inability to keep up with the complexity of today.
- manual processing is used exclusively.
- Pricing mistakes.
- Data synchronization mistakes.

When it comes to revenue generation and the capacity to sustainably generate thousands of jobs, the maritime sector is ranked second only to the oil industry. According to experts, however, the Nigerian government is currently not in a position to fully benefit from the maritime sector due to a number of issues, including alleged significant revenue leakages, capital flight amounting to N2 trillion annually, inadequate infrastructure, inconsistent policy, and a lack of human capital, among others. Observers claim that the financial and employment losses are incalculable and that this trend is robbing the country of desperately needed funds for development. Experts urged the federal government to review all "bad policies," such as the Central Bank of Nigeria's (CBN) FOREX restriction on specific items, in order to buck the trend. They also urged the government to thoroughly look into any allegations of wrongdoing in shipping operations, including the alleged undervaluation of imports, under-declaration of goods, concealment, and fraudulent transactions on the Gross Registered Tonnage (GRT) of vessels by shipping lines (Ebosele,2016).

2.1.3. Corruption in The Maritime Sector.

Corruption and exercise of discretionary powers by the Nigeria Customs Service (NCS) and port officials has had huge implications for ease of doing business in Nigerian seaports and terminals, leading to revenue loss of as much as about N2.5 trillion corporate revenue in the ports industry annually, a report by Integrity Organisation Limited, GTE and its private sector facing arm, Convention on Business Integrity (CBi), has revealed. The report, which was jointly funded by ActionAid and UK Aid, revealed that negative operational elements had pushed many customers to now use ports and terminals of neighbouring countries, thereby leading to loss of foreign exchange earnings for Nigeria. According to the report, between 38 and 40 percent of the available capacity is being used, and 40 percent of the enterprises in the nearby communities of ports have either moved, scaled back, or shut down entirely. "Customs personnel have significant discretionary power and this can easily be misused for pecuniary gains like gratifications and bribes," the report claims. By virtue of their legal authority and role in the bureaucracy, customs agents and port officers can affect port operations and play either an enabling or a disabling role depending on the circumstances and their interests. For example, customs authorities can influence port operations if they so choose because they have complete knowledge of cargoes, shippers, and the authority to assess and value property. Customs agents and port managers work on the supply side of the system and have a significant impact on how the system is manipulated for or against the demand side of port users. Port personnel, such as port gate staff, stevedores, document clerks, and scanning agents, have influence on the demand side and have the ability to manipulate the system in ways that compromise efficiency, despite not having the same level of statutorily granted discretion as Customs officers (Eromosele, 2020)

Port and terminal officials are allowed to use a wide range of discretionary powers, even when such powers clash with the law. These discretionary rights can be arbitrary, cause bottlenecks in port processes, create a haven for corruption and graft, and make procedures complicated. Such discretionary use frequently opens the door to overt corruption and the extortion of port users. The ports and terminals become inaccessible to legal enterprises due to poor infrastructure, inefficiency, and delays in administrative and clearing procedures. Additionally, there is a perception of ineffective complaint/feedback procedures, weak investigative methods, and insufficient enforcement. The feedback/complaint methods are not entirely trusted by port users because they see the mechanisms as being a part of the problematic processes. The idea that the mechanisms will always have negative effects is another. Compliance, not pertinent rules, frameworks, or official orders and pronouncements, is the issue. Even when authorities implement pertinent policies, enforcement and compliance are weak. The system and port operations appear to be manipulated by port officers/officials who appear to be too tactically and creatively powerful to follow the regulations, even when doing so makes doing business at the ports challenging (Eromosele, 2020).

The Centre for International Private Enterprise (CIPE) estimates that corruption at Nigerian ports costs the country up to $1.95 billion USD in annual government revenue and $8.15 billion USD in private sector revenue. The economy of a nation that, as of May 2020, plans to borrow more than $14.1 billion USD to finance the 2020 budget bears the brunt of money lost due to illicit financial flows through ports. These losses severely limit government initiatives as well as the ability to build and upgrade urgently needed public infrastructure. However, corruption at the ports can act as a significant barrier to long-term gains from foreign direct investment.

2.1.4. The State of Nigeria's Exchange Rate Crisis.

A low exchange rate means that more local currency (in this case, the naira) can be obtained for just one unit of foreign currency, such as the US dollar. In a country with a low value currency, like Nigeria, a low exchange rate decreases the prices of exported products and services while raising the costs of imported goods and services for consumers. By making exports more affordable than imports to decrease importation of goods, the exchange rate depreciation increases the exportation of non-oil commodities. A nation's trade balance improves, and its foreign exchange earnings go up when it sells more goods. The depreciation of the naira in an effort to increase exports and decrease imports hasn't had the expected impact because the anticipated export of non-oil goods is still having trouble meeting domestic demand, let alone that of the international market. Increased import costs and excessive inflation in the domestic market are the results of rising global prices and the naira depreciation issue (Ashaka, 2022).

The low exchange rate issue that exists in Nigeria is related to the high prevalence of youth unemployment there. Due to the high cost of production, manufacturers are having trouble remaining in business. They are employing fewer workers and producing at subpar levels. The decline in employment levels has the potential to negatively impact Nigeria's economic development and exacerbate poverty.

2.1.5. Diversion of cargo from Nigerian Ports to Neighbouring ports.

An essential element of the entire shipping process is the shipper's selection of the port of landing. It usually follows careful examination of a number of variables that interact either favorably or unfavorably for the shipper. A shipper always wants to land his goods in a port that is close to its final destination, at the lowest cost, and in the shortest amount of time. He would also want to safeguard his cargo from theft while it is in route, therefore he would pick a port with the highest level of security.

The 1990s saw a significant increase in the amount of nautical cargo intended for the Nigerian economy that was instead sent to ports in nearby nations after crossing land borders into Nigeria. For instance, this event has been labeled as cargo diversion by Adesanya (1997), endangering the efficiency of Nigerian ports. Additionally, Denne (1999) used the same phrase and portrayed it as falling into two categories: international and domestic, in a news briefing for the Association of American Ports Authorities (AAPA). He claims that the former refers to a scenario in which cargo intended for one country is diverted to other ports within the same country from a seaport in a neighboring country, while the latter refers to a scenario in which cargo intended for a seaport within one country is transported to its final destination by road.

Stephens (2003) identified several causes for cargo diversion, one of which being the problem of fluctuating port fees. The variations result from the various port approaches (the port channel and drafts), operating hours, labor costs in various nations, the availability and sophistication of port infrastructure and equipment, level of computerization, and the various port service billing systems. Second, different calling shipping companies charge varying freight rates to transport cargo to various ports. Without any justification, the majority of shipping companies in Nigeria simply charged importers whatever they could get away with, which significantly increased the cost of shipping and related port services in Nigeria. This discrepancy may be a tactic used by neighboring ports in the sub-region to draw more clients whose commodities are headed for the Nigerian market, where many of the exported goods may be illegal.

The above depiction of our ports does not greatly depart from what the local port users believe about them. Even the government is aware of these issues, which explains its numerous prior attempts to reform the ports. Despite all these changes, it still takes at least 5 days to clear cargo from ports, especially containerized cargoes. In Ghana and other countries in the same region, comparable operations are completed in less than 48 hours.

2.1.6. Import duty Waivers in Nigeria.

Import waivers are defined as "tax exemptions for corporations setting up businesses and waiver of import/export duties on equipment utilized within the business" in Q-finance, a reference work produced by the Qatar Financial Centre Authority (2023). The research's conclusions showed that Nigeria has long had a waiver-granting policy, especially as a way to support companies with the ability to establish a value chain (Nigeria constitution, 1999, as amended).

Here, the government can only regulate; we have concession waivers, entire waivers, and exclusions (which are under schedule 2, Nigerian Constitution, 1999). The international convention known as Schedule 2 allows for the duty-free importation of 10 commodities, but only if the government forbids it. Only if the government has a strict waiver policy can it suspend waiver in the areas that it has examined and agreed to do so.

Governments utilize import tariff waivers, exemptions, and concessions in many parts of the world to safeguard local firms and jobs, but in Nigeria they are frequently abused and have ended up being a significant drag on the economy. An analysis of the waivers granted in 2019 by Festus (2022) revealed that the exemptions on import charges totaled N127.7 billion; the surcharge, which consists of a seven percent import duty, was N8.6 billion; the Common External Tariff (CET) levy was N4.6 billion; the Comprehensive Import Supervision Scheme (CISS) was N2.6 billion; and the exemptions under the ECOWAS Trade Liberalization Scheme (ETLS) were N4.8 billion. Other customs exemptions reported throughout the year include the National Automotive Council Levy (N233.6 million), the Iron Levy (N393.2 million), and the Import Value Added Tax (N64.4 billion).

Reliefs provided were anticipated to total N780 billion for the 2020 fiscal year, of which N600 billion came from import duty exemptions and N180 billion from VAT on import charges.

According to the research, ”Considering that real customs revenue collection for 2020 was N931.6 billion, this (amount) represents a considerable revenue. 2020 saw an increase in import duty waivers to N305.6 billion, a surcharge of N21.3 billion, N223 billion in CET levy, N28.9 billion in CISS, N19.3 billion in ECOWAS Trade Liberalization Scheme, N113.8 billion in Iron Levy Relief, and N1.1 billion in relief from NAC Levy. The COVID-19 supplies presidential initiative, import duty, and VAT on commercial airlines were among the other exemptions. The incentive is typically seen as a business measure intended to encourage economic investment. The only goods or businesses that qualify for this pioneer classification are those that are new to the nation.

Anyadike, Nkechi, and Eme (2017) examined the financial effects of waiver abuse in Nigeria. The study's introduction, theoretical viewpoint on waivers, economic cost of waivers, recommendations, and conclusion were all taken into account. It was discovered that the goal of providing waivers is to support local enterprises, make urgently required raw materials or items immediately available, and create jobs. However, despite many years, none of these aspirational goals have been fulfilled. Due to a paucity of raw materials, the majority of local industries have closed their doors, adding to the nation's expanding unemployed population.

Waivers are viewed in other contexts as a means of attaining predetermined economic objectives, such as the protection of local industries, the creation of jobs, the promotion of exports, and the development and maintenance of foreign exchange. Waivers, concessions and grants have been employed at various periods by China, India, Malaysia, Japan, and many other economies to safeguard and develop their domestic manufacturing and agricultural sectors. Sadly, Nigeria has not achieved any of these goals.

2.1.7. *Custom Duty Fraud.*

Customs are government agencies in charge of regulating the flow of goods and passengers across borders as well as collecting customs duties and taxes from traders. Customs administrations cleared $19.7 trillion in imports, 1.4 billion passengers, and collected 30% of global tax revenue in 2018, according to the World Customs Organization (WCO). Traders, on the other hand, may be tempted to manipulate and omit certain declaration details in order to avoid customs duties, taxes, and regulations.

Table 1 summarizes the various types of customs fraud and their illicit motivations.

Table 1: Types of customs fraud.

Fraud	Illicit motives
Undervaluation of trade goods	To avoid ad-valorem customs duty, or conceal illicit financial flows from exporters.
Misclassification of HS code	To get a lower tariff rate applied or trade prohibited goods by avoiding restriction.
Manipulation of origin country	To get a preferential tariff rate under a free trade agreement.
Smuggling without declaration	To trade prohibited goods by avoiding restriction and custom duties.
Overvaluation of trade goods	To disguise illicit financial flows as legitimate trade payments from importers.

Source: Sundong Kim; Yu-Che Tsai; Karandeep Singh; Yeonsoo Choi; Etim Ibok; Cheng-Te Li; Meeyoung Cha; (2020). *DATE . Proceedings of the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining.* doi:10.1145/3394486.3403339.

2.2. *Theoretical Framework.*

1. Keynesian Economic Theory: The impacts of revenue leakages on the expansion of an economy are theoretically explained by the Keynesian economic theory. According to Keynesian economic theory, when capital is scarce due to leakage, governments may need to take action to stimulate their economies by injecting money into their systems. Increasing exports to other countries or borrowing money from overseas investors or governments are two ways to obtain this infusion of cash.

He also mentioned that because they might have the impact of moving revenue earned in one country to another, imported commodities are frequently referred to as a source of ”leakage.” The money used to pay for the imports is taken out of the local region, which causes an outflow from the domestic area.

2. Institutional Theory: Institutional theory as postulated by John Meyer and Brian Rowan in the 1970s states that institutional pressures may change over time, making it difficult for organizations to adapt to evolving norms and standards in the environment in which they operate. This can have significant consequences on revenue management practices where organizations must also navigate the challenges of managing conflicting pressures from different stakeholders and adapting to changing institutional norms and standards.

3. The Principal-Agent theory: This theory which emerged in the 1970s suggests that customs officials may be more likely to engage in customs fraud when there is a lack of oversight and accountability. In situations where customs officials are not held accountable for their actions, they may be more likely to accept bribes and engage in fraudulent activities. There is contention as to who originated the theory, with theorists Stephen Ross and Barry Mitnick both claiming authorship.

4. Public Choice Theory: Public choice theory as published by James M. Buchanan (1962), opines that politicians,

bureaucrats and other government officials act in their own self-interest, just like any other economic actors. Furthermore, the theory suggests that the size and complexity of government can exacerbate revenue leakages. As government programs become more complex, it becomes more difficult to monitor and regulate them effectively. This can create opportunities for corruption and rent-seeking, as officials may use the complexity of government programs to hide their illicit activities.

5. The Trickle-Down Theory: Additionally, "the trickle-down theory", also referred to as trickle-down economics, holds that giving preferential tax breaks to the wealthy and powerful as well as larger corporations will benefit society as a whole by later having an impact on everyone else. According to this concept, a country's economic growth will be favourably affected by the implementation of income and capital tax cuts as well as the addition of additional financial perks for major firms and investors. It emphasizes on the idea that when economic progress is attained, the entire community benefits because it is most likely driven by the entities with the greatest resources and skills. This theory, which was put forth by American economist Arthur Laffer in the 19th century, describes the long-term advantages that enterprises and a rising economy like Nigeria would gain by offering import waivers to both native and foreign industries.

2.3. *Empirical Review.*

In 2015, Eme, Chukwurah, and Iheanacho set out to solve Nigeria's revenue leaks. The following subheadings were taken into consideration for the study: introduction, conceptualizing income leakages, Analysis of Nigerian cases of revenue leakages, conclusions, and suggestions. A trend that has raised questions about the government's capacity to meet the N4.64 trillion budget plan for the 2014 fiscal year was revealed: from 2011 to 2013, the government had not met its income predictions. The government's revenue-generating agencies were accused of failing to reach their revenue collection goals and, in some cases, of being dishonest about the full disclosure of their gains.

Bensassi et al. (2017) conducted a comprehensive empirical analysis of the impact of cargo diversion on revenue leakages in West African countries. The study used a unique dataset of import and export data from 14 West African countries over the period 2004-2014. The authors employed a gravity model to estimate the impact of cargo diversion on revenue losses. The results of the study showed that cargo diversion has a significant and negative impact on revenue collection in West African counties. Specifically, the study found that a 1% increase in cargo diversion leads to a 0.15% decrease in customs revenue. The authors also found that the impact of cargo diversion on revenue losses is more significant for countries that have a higher share of informal economic activities and provides strong empirical evidence of the negative impact of cargo diversion on revenue collection in West African countries.

Gross Registered Tonnage (GRT), cargo throughput, operational surplus, operating revenue, and Real Gross Domestic Product (RGDP) were used as variables in Osadume and Edih's (2020) analysis of port revenue performance and economic growth - The Nigerian Ports Authority experience 2010-2019. The results of the study, which employed Ordinary Least Square (OLS) and Engle-Granger co-integration, revealed that total revenue to gross registered tonnage had a favorable and significant impact on economic growth, while operating surplus to operating revenue and operating surplus to cargo throughput had negligible or insignificant effects.

Omwenga and Ondieki (2015) examines the effect of cargo diversion on revenue collection at the Port of Mombasa, which is the largest port in Kenya and the gateway to the East African region. The authors use a combination of qualitative and quantitative research methods to analyze data collected from various stakeholders, including port officials, customs officers, freight forwarders and transporters. It was discovered that cargo diversion is a common practice at the port and that it has a significant negative impact on revenue collection. Specifically, they estimate that cargo diversion results in a revenue loss of about 1.5 billion Kenyan Shillings (approximately 15 million US dollars) per year.

A study conducted by the World Bank (2019) examined the effects of import waivers on the Nigerian rice industry. The study found that import waivers had led to a decline in domestic rice production and an increase in rice imports, which in turn led to a reduction in the competitiveness of Nigerian rice farmers. Also, it was discovered that import waivers had not achieved their stated goals of reducing the cost of rice for consumers and supporting domestic rice production.

Another study by the African Development Bank (AfDB) (2019) critically examined the effects of import waivers on the Nigerian manufacturing sector. The study found that import waivers had led to inefficiencies in the allocation of resources, as firms were incentivized to import finished goods rather than produce them locally. This had caused a distortion in trade patterns, as certain firms were able to gain an unfair advantage over their competitors.

The role of excise and customs taxes on the expansion and growth of the Nigerian economy was evaluated by Adegbie (2011). The purpose of the paper was to evaluate the value of customs and excise charges as non-oil sources of revenue for the development of the Nigerian economy, the difficulties facing the control agency, and the most effective reforms for the Nigerian Customs Services. Additionally, to guarantee that the proper tariff is collected in order to achieve higher growth, reduce national poverty, and guarantee that the country achieves greater development throughout all economic sectors. According to table 2 below, the service's revenue goal for 2004 was 219 billion naira (N 219,000,000,000), but the actual amount collected was closer to 218 billion naira (N 218,000,000,000), representing a discrepancy of about one billion naira (N1,000,000-,000). The table can be used to determine the variations.

Given that there is anticipation of business expansion from year to year, which ultimately results in an increase in goal set, the three years in the analysis exhibit negative variances while the target set is at variance. According to the chart, there is still more that can be done to increase the efficacy and efficiency of Nigerian Custom Services. The negative variance was ris-

Table 2: Nigeria Customs Revenue Target/Collection 2004 - 2006.

Year	Revenue Target (N)	Revenue Collection (N)	Variance (N)
2004	219,000,000,000	218,024,656,656.63	(975,343,347.37)
2005	231,000,000,000	226,956,402,940.07	(4,043,957,059.93)
2006	197,000,000,000	170,909,798,587.62	(26,090,201,412.38)

Source: Adapted from Buba, (2007).

ing from one year to the next. While the Nigerian Customs Service is falling short of its goal, duty losses have also been documented during that time.

The summary of duty losses to all concessions between January 2004 and November 2006 is shown in table 2 below. According to the data, revenue loss was N56.8 billion in 2004, N71.2 billion in 2005, and N54.9 billion in 2006. This is proof that the government is losing a lot of money every year, which would undoubtedly have a detrimental impact on its ability to provide for the growth and development of the Nigerian economy. With such large income outflows —in the billions of naira— the government's concession policy has to be reassessed, especially if the industries that benefit from the concessions don't contribute much to the economy as a whole.

Table 3: Revenue Loss by Nigerian Customs Services From 2004 - 2006.

Exemption/ Concession	2006	2005	2004
R Revenue loss due to exemption/waivers	8,237,049,659.54	41,636,157,785.94	33,970,745,310.37
R Revenue loss due to ETLS	1,494,223,772.13	2,548,734,595.82	2,104,089,331.98
Revenue loss due to concessionary duty rate granted to bonafide manufacturer / assemblies	64,956,189.29	10,001,804,163.24	6,982,047,350.65
Revenue loss due to export processing/ excise factory	256,055,157.07	248,545,281.21	146,279,456.67
Revenue loss due to concessions to Manufacture-in-bond schemes	3,819,378.39	820,147,347.45	1,115,233,719.64
NDDC	34,365,839,307.46	15,989,292,537.74	11,478,137,655.38
TOTAL	54,921,943,464.88	71,244,681,711.40	56,796,532,825.67

Source: Adapted from Buba, (2007).

The research is exploratory, descriptive, and empirical. Nigeria is used as the study's sample population, and the Central Bank of Nigeria and 100 people —30 industrialists, 30 company owners, and 40 educated people —were chosen as the study's samples. The analysis included both primary and secondary data. To collect information from the sampled population for the primary data, closed-ended questionnaires with a five-point Likert scale of Strongly Agree, Agree, Disagree, Strongly Disagree, and undecided were employed. In order to assess, in particular, the contribution of customs and excise duties to the economic development of Nigeria, gross domestic product (GDP) was taken as the dependent variable against which four independent variables of petroleum profit tax, company income tax, customs and excise duties, and value added tax were taken. The results show that there is a very strong correlation between customs and excise duties and Nigeria's economic progress, and that corruption, fraud, and malpractice have significantly reduced the money received by Nigeria Custom Services for the federation account. The paper makes the case that the government should completely execute the different reforms in order to close various loopholes that act as conduit pipes for the unrestricted flow of money into private hands. The system needs to be reviewed for corruption and fraud.

Trade mis-invoicing, which involves the intentional falsification of the value, volume, or quality of an international commercial transaction of goods or services by at least one party to the transaction, is a method for moving money illegally across borders, according to the Global Financial Integrity (GFI) report (2019). This often occurs when exporters or importers ship exports or receive imports and provide fraudulent information about shipments on invoices to customs authorities. The analysis further divided trade mis-invoicing into four major categories, including:

i. **Import over-invoicing:** is a frequent technique for smuggling money out of underdeveloped nations, which causes unauthorized capital outflows. Another significant factor is simple tax avoidance.

ii. **Export under-invoicing**: It entails decreasing the amounts of a company's taxable income and avoiding paying export taxes. This technique involves falsifying the invoice to indicate that the price of the items being exported is less than the actual amount being paid by an overseas importer.

iii. **Import under-invoicing**: is frequently used to avoid paying value-added taxes (VAT) and customs duties on imported goods. In some cases, a second method is used to transfer untaxed funds outside the nation in order to pay the true total owed.

iv. **Export over-invoicing**: In this instance, the prices indicated on the export invoices are fabricated in order to demonstrate that the exports are priced more than what foreign buyers have invoiced. In these situations, businesses can make more money by taking advantage of government refunds and subsidies than they would by paying extra (inflated) export taxes. (Global Financial Integrity, 2019)

Chikere, Ibe, Stephens, Nze, and Ukpere (2014) investigated the causes of cargo (intended for the Nigerian economy) being diverted from Nigerian seaports to ports in surrounding nations. The study's focus was limited to the border crossings at Seme and Idiroko, where statistics on diverted cargo were compiled that did not correspond to the volume of cargoes that are really transported through Nigeria's ports and land borders. The Nigeria Customs Service provided data on the volume of cargo imported into Nigeria but diverted from Nigerian ports in order to be sold there.

The Nigerian Ports Authority provided information on cargo throughput, and shippers were given questionnaires in order to learn what factors led them to choose other ports than Nigerian ports for the shipment of their goods. Using a 5-point Likert Scale, the Kaiser criterion and Catell's Scree Test for factor analysis were used to identify the most important variables driving cargo diversion from Nigerian ports. The outcome shows that a number of factors, including the government policy that prohibited the importation of used cars older than five years (year 2001/2002), the reduction of tariff rates on imported used vehicles by the port of Cotonou, corruption and nefarious activities at the ports, shallow drafts in Nigerian ports, operational delays, and the proliferation of security and other agents at the ports were the main causes, which has led to a high rate of smuggling and underutilization. The report suggests that as a key measure to combat corruption, the government should forbid security personnel who are unrelated to cargo operations from working in ports.

Onapajo and Ezuma (2019) looked into whether political or economic factors were at play when Nigeria gave tax exemptions to multinational firms. According to the study, there is minimal evidence that tax exemptions significantly boost FDI (foreign direct investment) into a country. Instead, MNCs have used the tax waiver system as a way to avoid paying taxes and keep economic corruption alive. The analysis concludes that tax incentives for MNCs appear to be more politically motivated than they are economically advantageous, notwithstanding this. As a result, the paper offers several suggestions for enhancing the tax system. If these suggestions are to be put into action, they must achieve their intended results and shield Nigeria from being taken advantage of by foreign businesses and their local collaborator.

2.4. Gap in Knowledge.

Several researches shows that less attention has been given to this subject in the maritime sector.

3. Methodology.

3.1. Research Design.

The research adopted survey research design method for in-depth study of effects of revenue leakages on maritime sector growth in Nigeria and to elicit information from the respondents. Survey refers to the method of securing information concerning a phenomenon under study from all or a selected number of respondents of the concerned universe (Kothari,1990).

3.2. Population of the study.

Uma (2007), referred to population as the totality of items or object which the researcher is interested in. The population of the study will comprise all stakeholders in the maritime industry. These include shipping agents, importers and exporters, officials of government agencies, customs agents, staff of Nigerian Ports Authority (NPA) and Nigeria Maritime Administration and Safety Agency (NIMASA) in Lagos.

3.3. Sample and Sampling Techniques.

In analyzing the data, stratified random sampling of sixty (60) persons would be used to indicate a specific number from a stratum which are stakeholders in the maritime industry.

3.4. Method and Sources of Data collection.

The data will be collected through the use of questionnaires which will be used to get opinion from stakeholders in the maritime industry. The questionnaire which the researcher will be using as an instrument to elicit more information from the respondents would be developed by the researcher and given to the supervisor for modification and approval to ensure that the instrument to be used was in line with the study.

3.5. Operational Measure of Variables.

Dependent Variables.

The dependent variable is maritime sector growth, which was proxied with maritime sector contribution to Gross Domestic Product (MGDP) refers to the total value of maritime industry services rendered to the Nigerian economy during a specific period of time usually a year. This is sourced from International Monetary Fund Bulletin.

Independent Variables.

The independent variable is Revenue Leakages in maritime sector, which was proxied with import waiver, cargo diversion and customs fraud:

i. **Import duty Waiver**: are tax exemptions for new businesses as well as waivers of import/export duties on equipment/input used in the business.

ii. **Cargo Diversion**: a change in a shipment's destination or billing before or after it arrives at its original destination.

iii. **Customs Duty Fraud**: Any fraudulent attempt to reduce the customs duty (or tariff or tax) imposed on goods imported into a country from another country.

Control Variables.

Control variables help to enhance the internal validity of the study by limiting the influence of confounding and other extraneous variables on the model. They include:

I. **Exchange Rate**: the rate at which one currency is exchanged for another, as in "the exchange rate of the dollar against the naira."

II. **Cargo Throughput**: the sum of inward and outward cargo processed by a country's seaports over a given period, usually a year.

3.6. Model Specification.

Model specification is the expression of a relationship into precise mathematical form. The model specification to be used between the dependent and the independent variables takes the general form:

$$Y = ß_0 + ß_1x_1 + ß_2x_2 + ß_3x_3 \ldots\ldots\ldots ß_nx_n$$

Where;

Y = Dependent Variable (Maritime sector growth proxied by MGDP)

$ß_0$ = constant,

$ß_1, ß_2, ß_3 \ldots\ldots ß_n$ = Coefficients,

$x_1, x_2, x_3 \ldots\ldots x_n$ are the Independent Variables.
Thus, the functional relationship is expressed as:

$$MGDP = f(IMW + CGD + CFR) \quad (1)$$

$$MGDP = \beta_0 + \beta_1 IMW + \beta_2 CGD + \beta_3 CFR + u \quad (2)$$

$$MGDP = \beta_0 + \beta_1 IMW + \beta_2 CGD + \beta_3 CFR + \beta_4 EXR + \beta_5 CTP + u \quad (3)$$

Where;
MGDP - Maritime Gross Domestic Product;
IMW - Import Waiver;
CGD - Cargo Diversion;
CFR - Customs Duty Fraud;
EXR - Exchange Rate;
CTP - Cargo Throughput;
u - Stochastic Error Term.

3.7. A-priori Expectation.

According to studies, granting import waivers on certain goods, cargo diversion to nearby ports and customs fraud in the seaports will have a detrimental impact on the GDP of Nigeria and the maritime sector's ability to generate revenue. The a-priori expectation is represented thus: $\beta_1, \beta_2, \beta_3 < 0$.

3.8. Method of Data Analysis.

In this study, descriptive statistics like the mean and standard deviation would be used to analyze the data to be collected. A four (4) point Likert scale was used to analyze each of the questionnaire items.
VGE – Very Great Extent (4 points)
GE – Great Extent (3 points)
LE – Little Extent (2 points)
VLE – Very Little Extent (1 point)

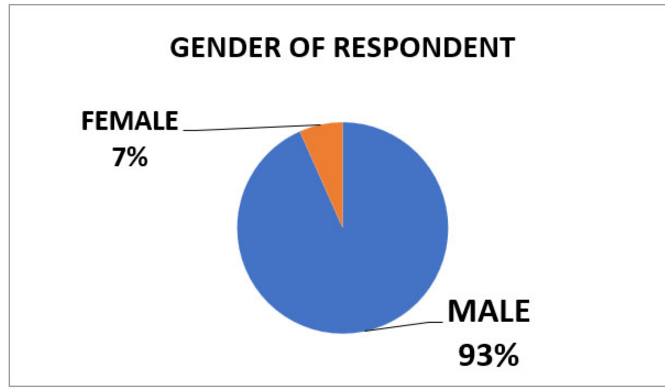
4. Data and Results.

In this section, statistical findings are presented from the data gathered using survey and the analysis of the research questions.

4.1. Demographics Profile of Respondent.

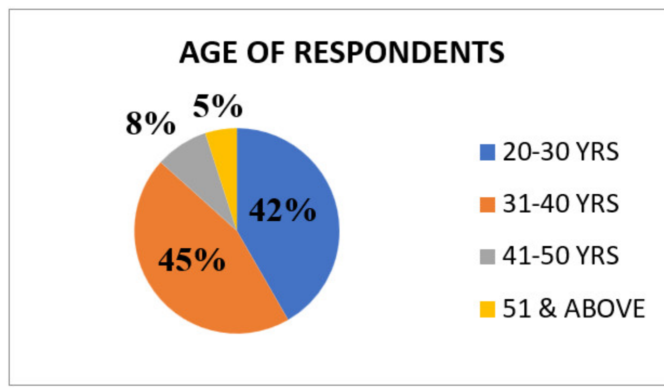
A total of 60 respondents participated in the survey out of which 56 were male (93%) and 4 were female (7%) as shown in figure 1. This implies that majority of the respondents were male. The information on age brackets of the respondents showed that 25 respondents (42%) were within 20 – 30 years, 27 respondents (45%) were within 31 – 40 years, and 5 respondents (8%) were 41–50 years while 3 respondents (5%) were greater than 51 years as shown in figure 2. This implies that majority of the respondent were between the age of 31-40 years.

Figure 1: Gender of Respondents, 2024.



Source: Authors.

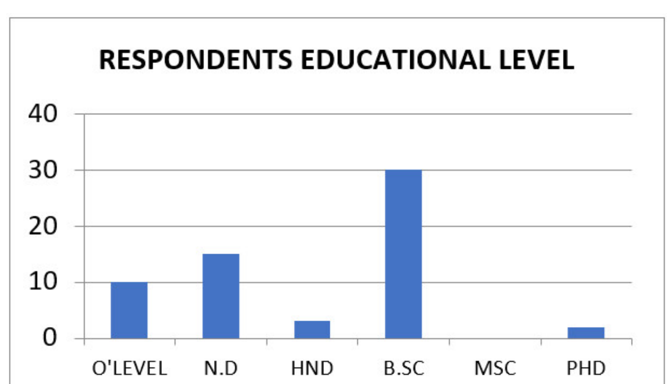
Figure 2: Age of Respondents, 2024.



Source: Authors.

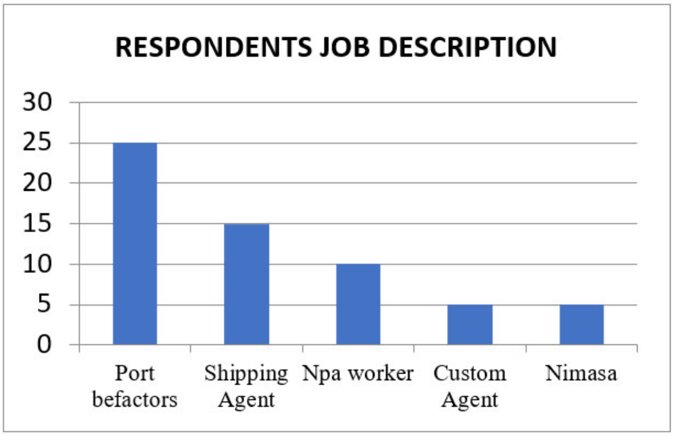
Furthermore, Information on the respondents' level of education revealed the following: **O'level** (10) (17%), **N.D.** (15) (25%), **H.N.D.** (3) (5%), **B.Sc**. (30) (50%), **M. Sc.** (nil) and **P. Hd** (2) (3%) as shown in figure 3. Majority of the respondents were port benefactors (42%), while the rest were NPA staff (17%), Nimasa Staff (8%), Custom Agents (8%) and shipping agents (25%) as shown in figure 4.

Figure 3: Respondents Educational Level, 2024.



Source: Authors.

Figure 4: Respondents Job Description, 2024.



Source: Authors.

4.2. Research Questions.

4.2.1. How has import waiver affected revenue leakages in Nigeria's maritime sector growth?.

Table 4

Question		Mean	S. D
1.	The mechanism of import duty waiver as a deliberate policy has helped Nigeria economy to be diversified.	2.4	0.7
2.	Waivers granted by government to firms & individuals lead to inability of Nigeria. Customs to meet her annual revenue target.	2.7	0.6
3.	Politically connected firms enjoy preference in being granted exclusive import duty waivers.	3.3	0.6
4.	Granting of import duty waiver on raw materials has boost local production of goods in Nigeria.	3.0	0.5
5.	The regime of waivers granted to importers of semi-finished goods has depleted revenue earnings to the maritime sector.	2.2	0.8

Source: Compiled by Researcher, 2024.

4.2.2. To what extent has cargo diversion to other Neighbouring ports affected revenue leakages in Nigeria's maritime sector growth?.

The respondents were asked questions related to how import waiver affected revenue leakages in Nigeria's maritime sector growth, from the result obtained, it can be deduced that the standard deviation of responses ranges from 0.58 – 0.84 which is within an acceptable range, and a mean which ranges from 2.25 – 3.33. The three statements with high level of agreement from their mean and standard deviation are "Politically connected firms enjoy preference in being granted exclusive import duty waivers", "Granting of import duty waiver on raw materials has boost local production of goods in Nigeria" and ''Waivers granted by government to firms & individuals lead to inability of Nigeria Customs to meet her annual revenue target".

Table 5

Question		Mean	S.D
1.	High port charges and tariff duty rates influence cargo diversion from Nigerian ports.	3.53	0.50
2.	Long waiting time for vessels in Nigerian ports make shippers divert cargoes to neighboring ports.	3.50	0.50
3.	Demurrage incurred by importers as a result of customs manual cargo inspection spur them to patronize neighboring ports.	3.73	0.45
4.	Unwanted bureaucracies and lack of coordination among agencies at Nigerian ports encourages cargo diversion to neighboring ports.	2.58	0.50
5.	Detained and uncleared cargoes in terminal space give room for diversion of consignment to neighboring ports.	2.30	0.46

Source: Compiled by Researcher, 2024.

Table 6

Question	Mean	S.D
Regulatory lapses in the Nigeria Customs Service create an avenue for revenue shortfalls	3.17	0.38
Weak penalties can encourage some customs officials engage in fraudulent activities in as much the consequences for getting caught are not severe.	4.00	0.00
High cost of tariffs/duty makes some clearing agents collude with dubious customs officers to under-declare cargoes and shortchange government.	3.43	0.50
Physical Human interface in cargo clearing process makes some customs inspection officers demand for inducement.	3.03	0.90
Breakdown of customs server in seaports leads to high demurrage charges for shippers and manipulation by some fraudulent officials.	3.92	0.28

Source: Compiled by Researcher, 2024.

4.2.3. What effect does custom duty fraud have on revenue leakage in Nigeria?s maritime sector GDP contribution?.

The respondents were asked questions related to the effect of custom duty fraud on revenue leakage in Nigeria's maritime sector GDP contribution, from the result obtained, it can be deduced that the standard deviation of responses ranges from 3.03 – 4.00 which is within an acceptable range, and a mean which ranges from 2.30 – 3.73. The statements with high level of agreement among respondents are "Weak penalties can encourage some customs officials engage in fraudulent activities in as much the consequences for getting caught are not severe".

"Breakdown of customs server in seaports leads to high demurrage charges for shippers and manipulation by some fraudulent officials" and "High cost of tariffs/duty makes some clearing agents collude with dubious customs officers to under-declare cargoes and shortchange government".

4.3. Tests for Hypothesis.

4.3.1. Decision Rule.

If PV < 0.05 =Reject **Ho**.

PV > 0.05 = Accept **Ho** and prior expectation of model $ß_1$, $ß_2$, $ß_3 < 0$.

Table 7 highlighted the extent to which cargo diversion, import duty fraud and custom duty waiver affects the maritime

Table 7

Model					
Analysis of Variance	**SS**	**DF**	**MS**	**F (DFn, DFd)**	**P-value**
Regression	0.4963	3	0.1654	F (3, 1) =5.8991	0.2918
Import duty Waiver	0.001955	1	0.00195	F (1, 1) = 0.06972	0.8357
CUSTOM DUTY FRAUD	0.06884	1	0.06884	F (1, 1) = 2.455	0.3616
CARGO DIVERSION	0.3875	1	0.3875	F (1, 1) = 13.821	0.1673
Residual	0.02804	1	0.02804		
Total	0.5243	4			

Parameter estimates	Variable	Estimate	Standard error	95% CI (asymptotic)	|t|	P value	P value summary
β0	Intercept	1.998	1.074	-11.65 to 15.64	1.861	0.3140	ns
β1	IMPORT WAIVER	-0.05696	0.2157	-2.798 to 2.684	0.2640	0.8357	ns
β2	CUSTOM DUTY FRAUD	0.3247	0.2073	-2.309 to 2.958	1.567	0.3616	ns
β3	CARGO DIVERSION	0.5260	0.1415	-1.272 to 2.324	3.717	0.1673	ns

Goodness of Fit	
Degrees of Freedom	1
R squared	0.9465
Adjusted R squared	0.7861

Source: SPSS compiled.

gross domestic products. As seen on the table, the relationship between maritime gross domestic product and custom duty fraud, cargo diversion and import duty is positive.

The value for R - squared showed that 94.65% changes in Maritime gross domestic products is explained by Custom duty fraud, import waiver and Cargo diversion (0.9365), which also shows that the model is a good fit. From the ANOVA table the model is not significant (F (3, 1) = 5.899, p = 0.2918).

Cargo Diversion P value = 0.16

Import waiver P value = 0.84

Custom duty fraud P value = 0.36

Overall Significance of model P Value = 0.29

This implies that although, cargo duty fraud, import waiver and cargo diversion have an impact on Maritime Gross domestic product, the overall effect of the model is insignificant. We therefore accept the null hypothesis as stated below:

1. Import waiver has no significant effect on revenue leakages in Nigeria's maritime sector growth.
2. Cargo Diversion to Other Neighboring ports has no significant effect on revenue leakages in Nigeria's maritime sector growth.
3. Customs duty fraud has no significant effect on revenue leakages in Nigeria's maritime sector GDP contribution.

4.4. Discussion of Findings.

The relationship between the independent variables and dependent variables is discussed below;

4.4.1. Import Waiver and revenue leakages in Nigeria Maritime sector growth.

Import duty waivers, exemptions and concessions are used by governments in various parts of the world to protect local businesses and jobs. In this study import waiver is one of the independent variables measured against the maritime gross domestic product.

Going by analysis, the relationship between import waiver and maritime gross domestic product from year 2017 – 2021 is negative (0.057). This implies that for every 5.7% decrease in import waiver there is an increase in maritime gross domestic products. It shows that minimizing the import waiver can help increase the Maritime gross domestic products. From the result in the questionnaire, it can be deduced that import duty waiver granted on raw materials has helped boost local production but more waivers are being granted to firms which has led to increase in duty waivers granted by the country on various imported goods. The increase in waivers granted on imported goods is acting as a source of revenue leakage in relation to maritime sector growth. Most of these are waivers are granted to politically connected firms as seen in the result from the questionnaire. This act as a source of revenue leakage for the maritime sector growth and also limit the revenue generation of the Nigeria custom as seen in the result for the questionnaire. This outcome is in line with the findings of Anyadike, Nkechi, and Eme (2017), Onapajo and Ezuma (2019) and World Bank (2019) of a negative correlation between duty waiver and economic growth.

In trying to find out the relevance and significance of import waiver on revenue leakages in the Nigeria maritime sector, analysis shows a probability of 0.83 which is greater than 0.05 (5% significance level). This implies that the relationship between Import duty waiver and revenue leakages in the Nigeria maritime sector is insignificant. This explain that import duty waiver granted within 2017 and 2021 are not effective enough to explain the variation on revenue leakages in the Nigeria maritime sector.

4.4.2. Custom Duty Fraud and Revenue Leakages In Nigeria Maritime Sector.

Customs duties are charges levied on goods when they cross international borders. Customs duties are charged by the Nigeria custom as assigned by the federal government are meant to protect local industries, economies, and businesses.

The ANOVA tests indicates significant the relationship between custom duty and maritime gross domestic product from year 2017 – 2021 is positive (0.32). This implies that for every increase in the maritime sector growth, there is an increase of about 32% in custom duty fraud within the year in view. It shows that minimizing the custom duty fraud can help decrease revenue leakages in the maritime sector and this outcome is in line with the result in the investigation of Eromosele (2020) and Adegbie (2011) of a positive correlation between custom duty and revenue leakage. From the result in the questionnaire, it can be deduced that one of the major causes of custom duty fraud is the weak penalties melted on custom officers that engage in fraudulent activities. One of the major reason most custom agents engage in fraudulent activities is due to breakdown of custom servers in seaport which leads to delay in clearing of goods and high demurrage charges for shippers.

This is seen as a means by which custom officers can exploit shippers. Furthermore, as captured in the result for the questionnaire, this high cost of tariffs together with high duty charges makes some clearing agents collude with fraudulent custom agents, hence aiding custom duty fraud and thus affecting the maritime sector growth in terms of revenue leakages.

In trying to find out the relevance and significance of custom duty fraud on revenue leakages in the Nigeria maritime sector, analysis shows a probability of 0.36 which is greater than 0.05 (5% significance level). This implies that the relationship between custom duty fraud and revenue leakages in the Nigeria maritime sector is insignificant. This explain that custom duty fraud carried out within 2017 and 2021 are not effective enough to explain the variation on revenue leakages in the Nigeria maritime sector.

4.4.3. Cargo Diversión on Revenue Leakages in Nigeria Maritime Sector.

Cargo Diversion is seen as a change in the destination or billing of a shipment before or after it reaches its original destination. There are many motivating factors for the diversion of a cargo and it can have an impact on the growth of the maritime sector.

Going by analysis, the relationship between cargo diversion and maritime gross domestic product from year 2017 – 2021 is positive (0.52). This implies that for every increase in the maritime sector growth, there is an increase of 52% in cargo diversion in Nigeria ports. It shows that revenue leakages in the maritime sector can be stopped by decreasing the percentage of cargo diversion in Nigeria port. One of the critical factors leading to cargo diversion in Nigeria is strongly related to the demurrage incurred by importers as a result of customs manual cargo inspection process. Most shippers incur demurrage charges due to custom inspection process and this is also coupled with the high port charges and tariff duty rates by the Nigeria government as seen in the result for the questionnaires. These charges encourage or motivate shippers to divert cargo to neighboring ports. Also, the Unwanted bureaucracies and lack of coordination among agencies at Nigerian ports encourages cargo diversion to neighboring ports.

This is in line with the findings of Chikere et al. (2014) which concluded that Operational delays and corruption and sharp practices at the ports were discovered to be the main reasons for the diversion of cargo to neighboring ports.

In trying to find out the relevance and significance of import waiver on revenue leakages in the Nigeria maritime sector, analysis shows a probability of 0.16 which is greater than 0.05 (5% significance level). This implies that the relationship between cargo diversion and revenue leakages in the Nigeria maritime sector is insignificant. This explain that cargo diverted within the year 2017 and 2021 are not effective enough to explain the variation on revenue leakages in the Nigeria maritime sector.

Overall, the model for the research has a good fit and explains that cargo diversion, custom duty fraud and import duty waiver has a positive relationship with maritime sector growth in Nigeria (94.65). The overall significance of the model is 0.29 which is more than 0.05, which shows that the model is not effective enough to explain the variation on revenue leakages in the Nigeria Maritime Sector.

Conclusiones and Recommendations.

4.5. Conclusions.

This study was an attempt to determine the effect and sources of revenue leakages in the Nigeria maritime sector which undermines the growth of the sector. The literature review successfully explains the concept of revenue leakages and the role custom duty, import waivers and cargo diversion plays in the maritime sector.

The survey research design was adopted for this research due to the need for an in-depth study of effects of revenue leakages on maritime sector growth in Nigeria. Data were primarily gathered with the questionnaire. Based on analysis it can be concluded that;

1. An increase in import waivers which is fueled by politically connected firms leads to decrease in maritime sector growth. Although, import waivers granted on most goods has led to a boost in local production.
2. Custom fraud carried out in Nigeria port increases as the Maritime gross domestic product increases. The increase in the fraudulent activities carried out by custom officers is a as a result of poor penalties melted on defaulting officers, demurrage incurred by shippers due to custom server breakdown and high tariff and duties charges in the Nigeria port.
3. Cargo diversion is a source of revenue leakages in the Nigeria maritime sector as seen by the positive correlation with Maritime gross domestic product. This cargo diversion is motivated by demurrage charges incurred due to custom inspection process high port charges and tariff duty rates by the Nigeria government and the Unwanted bureaucracies and lack of coordination among agencies at Nigerian ports encourages cargo diversion to neighboring ports.

Overall, the model for this research given MGDP **= *f* (IMW + CGD + CFR) is effective enough to** explain the variation on revenue leakages in the Nigeria maritime Sector.

4.6. Recommendations.

- In other to avoid cargo diversion to neighboring port, the federal government should as a matter of necessity digitalize the custom inspection process to reduce vessel waiting time and demurrage incurred by shippers. Also, port authorities should ensure proper coordination among agencies in the port to avoid unwanted bureaucracies and import review on port charges should be carried out by the Nigerian government to help encourage patronage of the port.

- Fraudulent activities have a negative impact on the Nigeria maritime sector. In other to avoid custom duty fraud, the Nigerian government should ensure that ailing officers are given strict penalties. Also, the Nigeria government should invest in digitization of custom inspection process and also encourage clearing agents by reviewing port charges and tariff.

- Import waiver can help boost local production in the country. The government should ensure waivers are granted to all relevant stakeholders aiding local production in Nigeria and avoid waivers to politically connected firm. This can be achieved by automating the import duty exemption charges.

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References.

Adegbie, A. Customs and Excise Duties Contribution Towards the Development and Growth of Nigerian Economy. *Retrieved from* https://www.researchgate.net/ , (2011).

Adenubi T. Revenue Leakages in Maritime, Other Sectors May Destroy Economy. July 12. *tribuneonlineng.com* (2018).

Adesanya A. Overview of the Nigerian Transport Sector. *Transport Nigeria,* January 1998, pp. 10-12 (1997).

African Development Bank (AfDB). Policy Brief: The Impact of Import Duty Waivers on The Nigerian Manufacturing Sector. Retrieved from https://www.afdb.org/fileadmin/uploads-/afdb/Documents/Publications/Policy-Brief The-Impact-of- import-Duty-Waivers-on-the-Nigerian-Manufacturing-Sector.pdf.-(2019).

Anyadike, et.al. The Economics of Waivers in Nigeria, *Specialty Journal of Accounting and Economics,* Vol. 3 (1): pp. 31-50 (2017).

Ashaka (2022). Resolving Nigeria's Exchange Rate Crisis can curb high inflation: Article www.businessday.ng.

Ataimewon, M. What's All the Fuss About Revenue Leakage?https://www.revenuegrid.com (2022).

Bensassi S., Martimort D. & Poudou J. Cargo Diversion and Customs Corruption: Evidence from West Africa – *Journal of Development Economics,*126, pp. 111-124 (2017).

Bob R. et. al. Political Connections and Tariff Evasion, Evidence from Tunisia, *World Bank Group Report* (2015)

Buba, J. G. The Role of Customs Reforms in Boosting Non-Oil Revenue in Nigeria, *University of Jos,* Nigeria symposium (2007).

Buchanan, J. M. The Calculus of Consent: Logical Foundations of Constitutional Democracy. [As cited in Buchanan (2018), EconLib Books, Volume 3, 2018] (1962).

Chikere, C.A., Ibe, C.C., Stephens, M., Nze, O.N., & Ukpere, W.I. Motivating Factors for Cargo Diversion from Nigerian Ports to Neighbouring Ports. *Journal of Economics*, 5, 77 – 86 (2014).

Denne E. (1999). News Briefing for the Association of American Ports Authorities. *Retrieved from* https://www.aapa-ports.org/.

Ebosele, M. Curtailing Revenue Leakages in Maritime Sector, https://www.guardian.ng/ (2016).

Eme, O. I., Chukwurah, D. C. & Iheanancho, E. N. Addressing Revenue Leakages in Nigeria, *Arabian Journal of Business and Management Review* (OMAN Chapter), 5 (4), 1-19 (2015).

Eromosele A. Eradicating Sleaze in Nigeria's Maritime Sector. November 20, www.thisdaylive.com (2020).

Festus A. "Between Revenue Shortfall and Huge Borrowing", September www.thisdaylive.com (2022).

Global Financial Integrity India: Potential Revenue Losses Associated with Trade Mis- invoicing. June. pp. 5 – 6. *GFI-India*-2019.pdf https://www.investopedia.com/terms/j/james- m-buschanan-jr.asp https://study.com/academy/lesson/institution-theory-environment-social- structure.html (2019).

Igbokwe Revenue from The Maritime Sector Can Surpass Earnings from Crude Oil. www.thisdaylive.com (2016).

Kothari, C. R. *Research Methodology: Methods and Techniques*. Wishwa, Prakashan, New Delhi (1990).

Nigeria's Maritime Industry Forecast 2018 – 2019, pp. 17 Themed: "Emerging Opportunities and Challenges" retrieved from: *nimasa.cybzity.com*

Omwenga & Ondieki The Effect of Cargo Diversion on Revenue Collection at The Port of Mombasa, Kenya. *Port of Mombasa Handbook,* 2014 (2015).

Onapajo & Ezuma Tax Waivers for Multi-Nationals in Nigeria: Are these based on Economic or Political Reasoning? Retrieved from: www.africaportal.org. (2019).

Osadume R. and Edih U. Port Revenue Performance and Economic Growth: The Nigerian Ports Authority Experience, 2010-2019" Scientific Journal on Transport and Logistics. Vol. 11 (2): pp. 1 - 11 (2020).

Qatar Financial Centre Authority Annual Report and Accounts, 2023. Retrieved from: http://qfc.qa/en/annualreports. (2023).

Raymond, F. and Shang-Jin, W. Tax Rates and Tax Evasion: Evidence from Missing Imports in China, vol. 112 (2), *Journal of Political Economy:* pp. 471-496 (2004).

Stephens, M. *Port Utilizattion and Performance: A Case Study of the Lagos Port Complex, Apapa Quays, Lagos (1990-1999).* MSc Dissertation, Unpublished. Owerri: Federal University of Technology (2003).

World Bank. Import Waivers and Domestic Rice Production: Evidence from Nigeria. Retrieved from https://openknowledge.worldbank.org/handle/10986/31736 (2019).

Further Readings.

Banfield, Edward C. Corruption as a Feature of Governmental Organization. Journal of Law and Economics. (December), 18 (3): 587 – 605 (1975).

Ogah, D. Cargo Diversion and the Location of the Operational Offices of Choice Carriers. The Guardian, December 4, p. 15 (2002).

Ogidiaka, O., Agbi, S. & Mustapha, L. Impact of Transfer Pricing on Revenue Generation and Debt Profile in Nigeria, Journal of Accounting and Taxation. Vol.14 (2): pp. 112-117 (2022),

Olawuni D. Why Importers Now Find It Difficult to Clear Their Cargo from Nigerian Ports, November 10. www.dailytrend-.com.ng (2022).

Real Gross Domestic Products (Billion) Central Bank of Nigeria. https://www.cbn.gov.ng/rates/RealGDP.asp?year=2021 (2021).

Revenue Leakage: The What, The Why and The How to stop it. Retrieved from https://www.recvue.com/Aug-23-2021/

Ships & Ports Ltd Deficit Budget and Why Nigeria Should Take the Maritime Sector Serious. Retrieved from: www.shipsandports.com.ng (2020).

Ships & Ports Ltd Why Government Must Be Purposeful with Maritime Sector. Retrieved from: www.shipsandports.com-.ng (2021).

The Voyage Volume 6- No. 4. *nimasa.gov.ng* (2018).

Umoru, H. Nigeria's total debt now N33trillion. Retrieved from https://www.vanguardngr.com/2020/03/nigerias-total-debt-now-n33trn-senate-2/ (2020).

Wright, R. Nigeria's Maritime Industry: Going for Growth. www.stears.com (2020).

APPENDIX A
(QUESTIONAIRE SAMPLE)

SECTION A: DEMOGRAPHICS

1. Gender: Male { } Female { }
2. Age: 20-30 { } 31-40 { } 41-50 { } 51 & Above { }
3. Educational level: O'level{ } N.D.{ } H.N.D.{ } B.Sc.{ } M. Sc.{ } P. hD { }
4. Job Description: NPA Staff { } NIMASA Staff { } Shipping Agent { } Customs Agent{ } Port Beneficiary { }

SECTION B**:** To what extent do you agree on the following statements? Please indicate your response by ticking {√} the option that is in line for your opinion.

VGE – Very Great Extent **GE** – Great Extent
LE – Little Extent **VLE** – Very Little Extent

A) How has import waiver caused revenue leakages in Nigeria's maritime sector growth?

S/N		VGE	GE	LE	VLE
1.	The mechanism of import duty waiver as a deliberate policy has helped Nigeria economy to be diversified.				
2.	Waivers granted by government to firms & individuals lead to inability of Nigeria Customs to meet her annual revenue target.				
3.	Politically connected firms enjoy preference in being granted exclusive import duty waivers.				
4.	Granting of import duty waiver on raw materials has boost local production of goods in Nigeria.				
5.	The regime of waivers granted to importers of semi-finished goods has depleted revenue earnings to the maritime sector.				

B) To what extent has cargo diversion to neighboring ports led to revenue leakages in Nigeria's maritime sector?

S/N		VGE	GE	LE	VLE
1.	High port charges and tariff duty rates influence cargo diversion from Nigerian ports.				
2.	Long waiting time for vessels in Nigerian ports makes shippers divert cargoes to neighboring ports.				
3.	Demurrage incurred by importers as a result of customs manual cargo inspection spur them to patronize neighboring ports.				
4.	Unwanted bureaucracies and lack of coordination among agencies at Nigerian ports encourages cargo diversion to neighboring ports.				
5.	Detained and uncleared cargoes in terminal space give room for diversion of consignment to neighboring ports.				

C) What effect does customs duty fraud has done to revenue loopholes in Nigeria's maritime sector growth?

S/N		VGE	GE	LE	VLE
1.	Regulatory lapses in the Nigeria Customs Service create an avenue for revenue shortfalls				
2.	Weak penalties can encourage some customs officials engage in fraudulent activities in as much the consequences for getting caught are not severe.				
3.	High cost of tariffs/duty makes some clearing agents collude with dubious customs officers to under-declare cargoes and shortchange government.				
4.	Physical Human interface in cargo clearing process makes some customs inspection officers demand for inducement.				
5.	Breakdown of customs server in seaports lead to high demurrage charges for shippers and manipulation by some fraudulent officials.				