



The Economic Effects of Covid-19 on Maritime Logistics Activities in Nigeria

Ajuru Wisdom M.¹; Professor Princewill Ugo Owualah²; Joshua Ottah³; Nwokedi, Theophilus C.⁴

¹ Department of Maritime Technology and Logistics, Federal University of Technology, owerri.

² Department of Transport and Logistics, Faculty of Transport Studies, Gregory University, Uturu Abia State, Nigeria.

³ Department of Martime Management Technology, Federal University of Technology, Owerri Imo State, Nigeria.

⁴ Department of Maritime Technology & Logistics.

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***Corresponding Author**

Nwokedi, Theophilus C.

E-mail: menichisomwisdom@gmail.com; nwokeditc@gmail.com

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ABSTRACT

The aim of this study is to evaluate the effect of Covid-19 on Nigerian maritime industry. The incentive for this study was driven by the impact of the corona virus pandemic across the maritime industry and how the ensuing lockdown affected the flow of container traffic at the Nigerian ports. The study adopted an analytical method in which data from the Nigerian Port Authority (NPA, 2022) was examined and analyzed in order to discover how the covid-19 and the restrictive measures adopted in order to contain the spread of the virus affected the flow of inward and outward container traffic . The data from 2017 to 2018 was taken as the period before the covid-19 (pre-covid-19) and the data from 2019 to 2020 was taken as the covid-19 era. Secondary source of data was used, descriptive statistics was applied to estimate the impact of the covid-19 on the inward and outward container traffic and the cargo throughput of Nigerian ports during the Covid-19. The mean difference between the inward container traffic, outward container traffic and the cargo throughput of Nigerian port before and during the period of the Covid-19 was calculated using the Statistical Package for Social Sciences (SPSS) software, v22.0 as the analytic tool.

1.0 INTRODUCTION

Maritime logistics activities have to do with everything that involves the carriage of seaborne trade in ships through the seaports and the performance of planning, handling and documentation activities required to transit the trade through the seaports to the consignees' warehouses and hinterland markets. The maritime industry is greatly important to every country's economy and economic activities. (Wanucha, 2014) "For whosoever commands the sea commands the trade; whosoever commands the trade of the world commands the riches of the world, and consequently the world itself", wrote English adventurer Sir Walter Raleigh in 1829. Today, ships transport 90 percent of international trade, and worldwide shipping volume is expected to double by 2025. Maritime transport provides the cheapest and the most effective way to move huge volumes of goods and raw materials around the world.

Adewale (2015) posits that maritime activities have a very important roles to play in the alleviation of poverty and creating wealth because they constitute an important source of income and employment for many people in maritime nations of the developing world, including Nigeria, in the form of supply of seagoing personnel, labour for ship recycling, ship owning and operating, ship building and repairs, as well as port services, among others. Therefore, if maritime transport and the associated logistical operations are threatened or become terribly in-secured, it can have serious impact on the nation's economic growth.

The severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2) which is popularly known as covid-19 is an infectious disease caused by the SARS-Cov-2 virus. The first known case was identified in Wuhan, China, in December 2019. The illness caused by SARS-Cov-2 was termed COVID-19 by the WHO, the acronym derived from "coronavirus disease 2019." According to WHO(2020); most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention. The COVID-19 pandemic affected about 206 countries of the world with Nigeria inclusive and resulted to the death of about 5,163,036 (Worldometers, November 2021). According to NCDC (2020); the first case of COVID-19 in Nigeria was discovered in Lagos state on the 27th of February 2020 by Virology Laboratory of Lagos University Teaching Hospital. With the discovery of the first case of COVID-19 in Nigeria, the government took actions to contain the spread of the pandemic which has already been ravaging countries like China, Italy and many other countries. The actions taken by the government to reduce the spread of the virus includes:

(i) Sensitization of the public about the virus.

- (ii) Proposing of different prevention techniques.
- (iii) Creation of different agencies to help monitor the spread of the virus and work toward reducing the spread.
- (iv) Enforcing of lockdown and compulsory sit at home measures to reduce the interaction of the public.

The lockdown and sit at home measures mostly, impacted on trade, businesses and organizations including the maritime and port logistics sector globally. This is because it led to the closure of many trading borders and hindered the ease of changing onboard crew as well as the cost of crew change across the continents of the World. Vessels entering major port from high risks zones were also placed on quarantine and maritime and port workers were subjected to work remotely. This led a serious disruption of the shipping and maritime sector, and the overall global supply chain and logistics sector.

It is important to note that local Firms and government also involved in shipping export and import trade. Both shipping export and import trade stimulate the economy and guarantees economic growth. With the outbreak of the COVID-19 pandemic however, economic activities in the maritime sector were crippled worldwide, owing to the lockdown measures in major economies of the world. The implication is that the circular flow of income has been significantly constrained since a reasonable proportion of the productive factors are currently lying idle. There is also a significant reduction in international trade following the closure of seaports and airports to curtail the spread of the pandemic (Inegbedion, 2020).

Due to the lockdown of the country, import and export activities were unable to take place, and Nigeria is a country whose economy is heavily dependent on export of crude oils. This situation resulted in the decrease in the price of crude oil which had a huge negative impact on the economy. The revenue that is usually gotten from the payment of import duties by importers was also reduced as importers were unable to import goods from other countries. The route for major importation and exportation of cargoes is through the sea. The effect of the covid-19 lockdown can be said to have resulted to a decrease in the flow of activities at the ports and the maritime logistics sector.

According to UNCTAD (2020); the coronavirus disease (COVID-19) triggered a global health and economic crisis with wide-ranging implications for maritime transport and trade. Restrictions introduced in response to the pandemic have caused disruptions affecting ports, shipping and supply chains. Various industries faced challenges along their supply chain such as raw material shortages, lead time issues, ocean blank sailings, port closures, and reduced working hours at ports, equipment and labour

shortages, as well as truck/transport capacity constraints. These obstacles undermine the smooth movement of trade flows and supply chain operations and can significantly erode the transport services trade liberalization and trade facilitation gains achieved over the years. The lockdown which was introduced as a measure to control the spread of coronavirus disease (COVID-19) also prevented individuals and firms from engaging in international trade which resulted to a decrease in the number of container and general cargo vessels visiting the ports. It is therefore important to investigate the impact that the COVID-19 outbreak had on the maritime logistics and port sector in Nigeria in order that proactive steps be taken in line with empirical findings to curtail the economic effects and impacts of such, in the case of future occurrences.

2.0 AIMS AND OBJECTIVES

The aim of this study is to investigate the effects of the coronavirus disease (COVID-19) on Nigerian maritime logistics sector activities.

The objective of this project is to discover the following;

- i. To compare the inward container traffic (TEU) of Nigerian ports during the pre-COVID-19 and COVID-19 era.
- ii. To compare the outward container traffic (TEU) of Nigerian ports during the pre-COVID-19 and COVID-19 era
- iii. To compare the cargo throughputs (TEU) of Nigerian ports during the pre-COVID-19 and COVID-19 era.

3.0 BRIEF REVIEW OF EMPIRICAL LITERATURE

Studies by Ozili (2020a) examined "COVID-19 in Africa: Socio-economic impact, policy response and opportunities in Africa." The design employed was discourse analysis. The results show that the coronavirus pandemic has had a significant effect on African countries. The pandemic is having its toll on economic activities and social interaction through the safety measures put in place to curtail the pandemic, such as physical distancing. A major implication of the study is the influence of social policies on the social and economic well-being of citizens, especially the drastic reduction in economic activities. Teachout and Zipfel (2020) investigated the economic impact of COVID-19 lockdowns in sub-Saharan Africa. They sought to quantify the impact of lockdowns on people's livelihoods. Consistent with the outcomes of recent surveys of income streams under lockdowns, assumptions were made on the likely impact of COVID-19 containment measures on various sectors in sub-Saharan Africa. They hypothesise that workplace

closures occasioned by the lockdown are likely to have a severe effect on the economy.

In another study, Thurlow (2020) looked at how the COVID-19 lockdowns are imposing substantial economic costs on countries in Africa. He presents an assessment of the economic effects of COVID-19 in some African countries with a specific focus on their varied effects on different sectors and types of households. The challenges for governments in responding to the crisis and progressing to policy formulation and implementation for medium and longer-term economic recovery are indicated. Dzobo et al. (2020) examined the "COVID-19 pandemic situation in Zimbabwe and viewpoints on important considerations and strategies for lifting the lockdown" given the likelihood that socio-economic pressures will challenge the sustainability of the lockdown, owing to the possible consequences of lockdown on the economy.

Okeleke (2020) researched on the "Results of Coronavirus (COVID-19) on the Nigerian Maritime Workers." The methodology adopted in the paper was an in-depth study of all literature materials dealing with the history of the COVID-19 pandemic, its results on world economy and view on how it affects the Nigerian shipping industry and the maritime and aviation workers. The result showed that COVID-19 pandemic is an economic woe to the global market and economy, it led to the collapse of the global economy in many ways. Okeleke & Aponjolosun (2020) performed "A study on the effects of COVID-19 pandemic on Nigerian seafarers". They sought to discover the effect of the COVID-19 pandemic on Nigerian seafarers during the period of the pandemic. The research showed that the lockdown which is a measure adopted to contain the COVID-19 had a significant effect on seafarers get reliefs from the port.

Organisation of Economic Cooperation and Development (2020) observes that the containment measures put in place to check the spread of the COVID-19 pandemic have led to the temporary shutdown of many businesses, widespread financial market turmoil, an erosion of confidence, heightened business uncertainty, as well as restrictions on travel and mobility. The major impacts are: decline in the level of output of between twenty percent (20%) to twenty-five percent (25%) in many economies, with consumers' expenditure potentially dropping by around one-third. This has adversely affected GDP growth in most countries within service sectors, retail sectors, non-essential construction work and the manufacturing sector; with the manufacturing sector experiencing the least effect since most manufacturing firms are less employment-intensive.

Ruzvidzo (2020) observed that the economic impact of COVID-19 on African cities is likely to be acute through a sharp decline in productivity, jobs and revenues. COVID-19 is expected to have severe employment effects in urban areas. The urban-based sectors of the economy (manufacturing and services) which currently account for 64% of GDP in Africa are

expected to be worst hit by the COVID-19 induced lockdown, leading to significant losses in productive jobs (ECA, 2020). Specifically, most "Africans in informal urban employment (approximately 250 million) are expected to be at risk. Also vulnerable to the COVID-19 pandemic are firms and businesses in the cities, especially the small and medium enterprises, which account for about eighty per cent (80%) of employment in Africa" (ECA, 2020). These risks are compounded by a likely hike in the cost of living, which is expected as shown for example by some initial reports of up to 100% increase in the price of some food items in some African cities (Ruzvidzo, 2020).

Adekola (2020) examined the "Perspectives on the impact of the COVID-19 pandemic on the global and African maritime transport sectors, and the potential implications for Africa's maritime governance." The paper examined the impacts of the pandemic on the MTS, at the global and African levels, and discussed what Africa's priorities for its MTS should be in the post-pandemic era. The short-term impacts of the pandemic are identified as including a drop in the volume of trade transported by maritime shipping; disruptions due to re-routed shipments; maritime defaults and bankruptcies; and stranded seafarers. To understand the longer-term impacts, the paper analyzes the pandemic's effect on five critical trends facing the MTS globally, viz, trade tensions, geopolitical developments, structural disruptions, regulatory pressures, and environmental incidents. In the African context, the paper highlights that with a mere 4% share of global container port traffic and a 7% and 5% share, respectively, of international maritime exports and imports (measured by tonnage), Africa's significance to the global MTS is not huge. Hence, an impact analysis based on the global MTS trends would be premature. The paper concludes that Africa's MTS in the post-pandemic era should focus on improving operational performance and sustainable development. Africa should also improve maritime governance to ensure that desired developmental outcomes are realized. It is argued that adopting a multi-stakeholder governance framework will be most appropriate for the continent's MTS in the post-pandemic era. Further research is however needed to identify how a multi-stakeholder governance framework should be adapted and deployed to fit different African environments.

Inegbedion (2021) examined the "Impact of COVID-19 on economic growth in Nigeria: opinions and attitudes." The study examined the impact of COVID-19 on economic growth in Nigeria: Opinions and attitudes. The purpose was to ascertain respondents' perception of the effect of the COVID-19 pandemic on economic growth in Nigeria. The cross-sectional survey research design was employed and a mix-method was used in collecting the research data. Results of the respondents' opinion indicated that the COVID-19-induced lockdown has significantly constrained economic activities and the circular flow of income. Lastly, the perceived reduction in the circular flow of

income in the wake of the COVID-19 lockdown has negatively impacted on economic growth in Nigeria. The need for policymakers to take drastic measures to curtail the pandemic and forestall a recession that may be consequent upon the pandemic was suggested.

Maryla et al. (2020) examined "the potential impact of COVID-19 on GDP and Trade" by utilising a standard global computable general equilibrium model to model the shock as: Underutilization of labour and capital, an increase in international trade costs, a drop in travel services, and a redirection of demand away from activities that require proximity between people. The results indicate significant declines in GDP in both developing industrial countries. The declines were observed to be approximately 4 per cent below the benchmark for the world. The outputs of domestic services as well as traded tourist services are observed to be worst hit by the pandemic lockdown.

Lucas (2020) investigated the "Impacts of COVID-19 on inclusive economic growth in middle-income countries." The design was a literature review of studies on coronaviruses. His findings indicate that COVID-19 is likely to cause much greater economic damage than any recent disease outbreak or economic crisis as its economic impacts are broader and much more severe than most of the previous crises. More worrisome is the fact that COVID-19 has exerted significant disruptions on global value chains, which currently account for above two-thirds of world trade; and an end to the disruptions is not in sight. An extract from an Oxford University study revealed that COVID-19 has brutalised communities by unleashing infection and death indiscriminately across the world (Shretta, 2020). IMF forecasted that the global economy is likely to contract by -3% in 2020 and that "the cumulative loss to global GDP over 2020 and 2021 from the pandemic crisis could be around 9 trillion dollars, making it the worst economic downturn since the Great Depression" (Gopinath, 2020).

Banwo and Ighodalo (2020) researched on "The Impact of the Covid-19 Pandemic on the Operations of Marine Vessels in the Nigerian Oil and Gas Industry." The study evaluated the impact of the COVID-19 pandemic and attendant regulatory actions in relation thereto on the operations of marine vessels which support upstream oil & gas activities in Nigeria. It is pertinent to note that like past epidemics and pandemics, most of the economic impacts of COVID-19 are consequences of the measures taken to curtail the spread of the disease rather than a direct effect of the disease itself (Inegbedion, 2021). The study suggested that as effects of the COVID-19 pandemic across various sectors continue to evolve with far reaching consequences, particularly for marine vessel operators who service the oil and gas industry in Nigeria. It is therefore important that operators stay abreast of the latest local and international developments and obtain appropriate advice on how to mitigate the myriad of issues which will continue to arise in the coming months.

Amuka et al (2021) examined the “business challenges of covid-19 pandemic and potential strategies of sustainability in Nigeria maritime sector.” The research provided a timely and study to understanding some areas in maritime industries with practical insight. It provided a concise review of challenges in maritime operation and management, impact of disruptions and possible response to be in full business. The study recommends that required collaboration and coordination of all stakeholders to ensure the reorganization of operation and working conditions due to sanitary protocols. It suggested that there should be a digital transformation and technological solutions that ports and shipping operators will adopt to lay ground for a more efficient and effective future. There will be going back to old ways of doing business and further development of artificial intelligence and the internet of things will accelerate the pace of change towards a fully digital world.

Ajayi (2020) examined “maritime contracts: impact of covid-19 on time charter parties in the Nigerian maritime sector.” the focus of this research is on the effect of COVID-19 on time charter parties taking cognisance of the fact that most vessels employed in the cabotage trade and in the oil and gas market in Nigeria are on time charter party. The study was able to show situations in which renegotiation on the contract can be considered in the event of force majeure, late delivery and late redelivery. The study suggested that the easier route for a party asserting force majeure with respect to a time charter party in the Nigerian maritime sector would be to rely on the impact of measures by different states in the ‘land domain’ (such as the effect of closure of coastal border of some coastal States on crewing, equipping and supplies to vessels under time charter in the Nigerian maritime industry) on the performance of maritime obligations under existing time charter parties. It also suggests that the party seeking to rely on COVID-19 as a force majeure event must also comply with the notice requirement in the charter

party. On the event of late delivery of the vessel, depending on the facts and circumstances, the charterer has the option to suspend the charter where there is a force majeure event. In sum, whether the owner can rely on force majeure in a case of late delivery, or the charterer is entitled to cancel the charter, or in the case of redelivery, the charter can rely on force majeure or the owner entitled to damages for late-redelivery will be based on the facts and circumstances of each case.

Due to the widespread worry that the COVID-19 pandemic has caused, numerous research have been conducted on the issue in the short time that the pandemic has existed. The majority of these empirical studies did not investigate the significance of the disparities in volumes and tonnages of seaborne trade handled by ships and ports in the Nigeria maritime industry in the pre and post Covid-19 eras. This the gap that this study is set to close by comparing the seaborne trade handled in the ports in the pre and in Covid eras.

4.0 METHODOLOGY

The study used an ex-post factor research design in which secondary data was used for the study. Secondary data on the seaborne trade handled in the maritime and port logistics sector in the Covid era and pre Covid era were proxied by the TEU handled in the seaports over the period. The data was sourced from the Nigeria ports authority (NPA). The data obtained was analyzed by using the difference of means statistical test to compare the trade flow through the seaport over the two periods. The Calabar port was used as case study.

5. RESULTS AND DISCUSSION

Table1: Comparing the mean of the inward container traffic during the pre-covid-19 and covid-19 era

	Differences between the mean of inward container traffic during the precovid and covid era					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
precovid – covid	-73502.50	17558.17	12415.50	-231256.39	84251.39	-5.92	1	.11

Source: Authors calculation

From table1, the mean difference between the inward container traffic during the pre covid-19 and the covid-19 era is -73502.50TEUs with standard deviation of 17558.17, with the standard error mean of 12415.50. This implies the pre Covid-19 era had higher inflow of

shipping import trade than during the Covid-19 period. The shipping import trade handled during the pre Covid-19 era is about 73502.50TEU higher.

Table-2: Mean Shipping Export Trade Handled in the Ports in the Pre Covid and in Covid Eras

	Mean	N	Std. Deviation	Std. Error Mean
Precovid	326505.00	2	221822.23	156852.00
Covid	160761.00	2	29196.44	20645.00

Sourced: Authors calculation

The result shown in table2, indicates that the mean of the shipping export container traffic handled during the precovid-19 era is 326505.00TEUs with the standard deviation of 221822.23 while the mean of the shipping export trade (container traffic) handled during the covid-19 era is 160761.00TEUs with the standard deviation of 29196.44. By implications, more export trade was handled by the maritime logistics sector in Nigeria in the pre covid era than in the covid-19 era. The difference of means test shows a mean difference of 165744.00TEUs in favour of shipping export trade handled in the pre Covid-19 era. This is significant and corroborates the findings of Nwokedi et al, (2021)

6.0 CONCLUSIONS

The COVID-19 and the ensuing lockdown have impacted on the global maritime sector in different ways which have resulted to several studies and researches that has been carried out by several scholars and academic researchers in the maritime industry in order to discover the extent of the impact and also proffer solutions on recovery, and that is also the major objective of this study. The conclusion of this study include that the cargo throughput of Nigerian ports significantly increased during the period of COVID-19 when compared to the cargo throughput before the COVID-19. The inward container traffic of Nigerian ports during the COVID-19 was also significantly greater than the inward container traffic before the COVID-19. The outward container traffic of Nigerian ports during the COVID-19 decreased compared to the outward container traffic before the COVID-19.

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