THE IMPACT OF COVID-19 PANDEMIC ON LOGISTICS PRACTICES OF CLEARING AND FORWARDING COMPANIES

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ABSTRACT

This study aimed at investigating the impact of COVID-19 pandemic on logistics in clearing and forwarding companies in Rivers State of Nigeria. A conceptual framework was used to illustrate a diagrammatic relationship between dependent and independent variable. The study adopted descriptive research design. The target population was 55 staff members of clearing and forwarding companies in Port Harcourt. The study used simple random sampling technique to select respondents. The sample size was taken to be 275. A pilot study was carried out to refine the instrument. The quality and consistency of the survey was further assessed using Cronbach's alpha. Data analysis was performed on a computer using Statistical Package for Social Science (SPSS Version 22) for Windows. Analysis was done using regression analysis and analysis of variance. The study revealed that COVID-19 pandemic negatively impact on logistics practices. The study therefore concludes that, there is a negative impact of COVID-19 pandemic on logistics operations of clearing and forwarding companies in Rivers State of Nigeria, and recommends amongst others that governments and management of clearing and forwarding companies should take steps to sustain this crucial sector during the period of Covid-19 pandemic, to ensure they remain in a position to perform transportation, warehousing and inventory management activities in the future.

Key Words: *Clearing and forwarding companies, Covid-19 pandemic, Logistics practices, Rivers State.*

INTRODUCTION

The modern world has been confronted by unparalleled infection epidemic (Lin *et al.* 2020; Nigmatulina & Larson 2009; Chew *et al.* 2004), by way of significant unenthusiastically consequence on the society as a sum total, but also on the competence of operations and supply chain management business models. Such disruptive impacts habitually capitulates the swell effects (Ivanov 2020; Ivanov *et al.,* 2018; Pavlov *et al.,* 2019). While supply chains crosswise the world have been previously going through epidemics and pandemic, they have freshly been critically smacked by an unmatched, far-reaching disruptive pandemic eruption, specifically COVID-19 (Boccaletti *et al.,* 2020), which is well thought-out as a latest type of tremendously

transmittable coronavirus, with vicious force (Choi 2020; Ivanov 2020; Ivanov & Dolgui 2020). The rigorous current effects from this challenge require diverse approach and measures. The impact of COVID-19 pandemic was earliest experienced in China owing to the role it plays in worldwide manufacturing, with Wuhan, the epicenter of the deadly disease, playing a predominantly momentous role. Major industries around the world, including automotive, electronics, pharmaceuticals, medical equipment and supplies, as well as consumer goods, were affected. The pandemic stretched to the rest of the world, leading to lockdowns and border closures that constrained the movement of goods. Additional protocols (such as social distancing at warehouses) pioneered to guarantee the protection of workforce contributed to restricted access for shipment. The impacts on shipment aptitude were visible in three key worldwide transportation fragments: ocean, land, and air.

Governmental restrictions wishing to unhurried down the stretch of epidemic and pandemic outburst show the way to mutilations for trade and industry processes, which impact on logistics operations. Ensuing panic buying and mounting home consumption had multipurpose impacts on transportation, warehousing and inventory management in Rivers State.

Due to the lack of prior empirical investigations on the impact of COVID-19 Pandemic on logistics practices, as well as consequential inference, this article desires to shed radiance on the observable fact of shifting volume and capacity dynamics in logistics operations, by investigating the impact of COVID-19 Pandemic on logistics practices of clearing and forwarding companies in Rivers State.

LITERATURE REVIEW AND HYPOTHESES
COVID-19 Pandemic

The COVID-19 pandemic was initially reported in Wuhan, Hubei province, China, in the late 2019. As illustrated by the Johns Hopkins University in May, 2020, the figure of authenticated cases accounted for around the globe has been progressively growing, approaching 5.69 millions with 355,575 deaths (Johns Hopkins University & Medicine 2020). As a result of this extremely rapid increase intensification, the COVID-19 pandemic was confirmed a global epidemic by the World Health Organization (2020). The impacts of the COVID-19 on logistics operations have already gained attention of scholars (Ikegwuru & Harcourt, 2020; Acee-Eke & Ikegwuru, 2020; Choi 2020; Govindan, 2020; Ivanov 2020; Lin *et al.,* 2020; Sarkis *et al.*, 2020) and business professionals (Business Insider 2020; Deloitte 2020; Forbes 2020; Fortune 2020). The COVID-19 pandemic is already impacting the logistics OSCM at a hefty degree (Lin *et al*., 2020).

Fortune (2020) designated that 94% of the businesses scheduled in the Fortune 1000 list were experiencing supply chain disruptions owing to the COVID-19 pandemic. Deloitte (2020) underscores that the entire impact of the epidemic on supply chain hang about uncultivated. In a perspective where relentless disruptions (e.g., manufacturers closed or partially closed, airports operating with harsh restrictions, shortages of medical equipment and supplies) are confirmed in the global supply chains (Ivanov 2020; McKinsey & Company 2020; World Economic Forum, 2020), a superior number of businesses (automotive, electronics, medical equipment, consumer goods, etc.) as well face undulated impacts (Dolgui *et al.,* 2018; Ivanov 2020).

Logistics Operations

Logistics is the main components of supply chain. The Specialty Council of Supply Chain Management deduces logistics as a branch of supply chain responsible for planning, implementation, and control of commodity flow and information amid production and consumption to realize customer requirements (Green *et al.,* 2008). The logistics chain is delineated as a group of three or more businesses linked in a straight line through an upstream or downstream series of products, services, finance and information from a starting place to a consumer (Mentzer *et al*., 2001).

Furthermore, logistics is a division of the supply chain together with reverse flow of money and goods, services, money and information (Armistead & Mapes, 1993). It as well takes account of all transportation management, inventory, service and distribution procedure, the third party logistics and logistics flow of activities (Maber & Venkatara, 1998). It incorporates the whole lot from the movement of a product or a service to be specified by the management of raw inward bound materials, production, storage, delivery to customers and relationship management after sales service (Pollitt, 1998). It is the handling of fine points of a process (Merriam-Webster, 1995). Precisely, logistics embraces all information and the flow of materials in the organization, together with the whole lot from the movement of a product in the organization of raw material entry, manufacturing, warehousing of goods, distributing them to consumers and after-sales services (Narasimhan & Jayaram, 1998).

Several businesses have commenced to identify logistics operations as the input to structuring maintainable competitive advantage for their products and services to convene increasing market requirements (Van Hoek, 1998; Jones, 1998). McGinnins and Kohn (1990) pigeonholed logistics operations into quite a few stage: transportation from abroad, transport between companies, internal transport, and storage for produced goods, order processing, finished goods in inventory management and raw material / work in progress on management inventory.

Transportation is the foremost logistics activities delineated as one of the activities concerning the repositioning of refined goods or products from the supplier to a definite center. Warehouse has been described by Stephen (2011) as sales center; Merriam-Webster (1995) characterizes a warehouse as a configuration or room for storage of goods. Kenyon and Meixell (2011) identify it as storage warehousing apparatus, raw goods and finished goods, Kotler and Keller (2012) defined packaging as one of the most imperative activities of the distribution arrangement and supply chain; Inventory management was branded by Hoda and Sala (2011) as an accumulation or storage of goods. Jakupi and Osmani (2012) considered inventory management as a worktable of the whole lot desirable to make a business successful.

The pace of change and the uncertainty about how markets evolve has made it increasingly important for companies to be aware of the supply chains they participate in and to understand the roles that they play. Those companies that learn how to build and participate in strong supply chains will have a substantial competitive advantage in their markets. This is because to compete successfully in today's dynamic market place, companies and their management must erect a sound logistics process as a source of long-term and sustainable competitive advantage.

The Impact of COVID-19 Pandemic on Logistics Practices

A sturdy cut short in the demand and supply for logistics services will accordingly be in a straight line accountable for a rigorous turn down in the demand for essential products used by the logistics sector, since they entail an alteration of the obtainable supply alternatives as well as the consumer preferences touching transport modal shares.

The COVID-provoked lockdowns and supply chain disruptions are already affecting logistics companies. Operational restrictions are projected to guide to delivery impediments, overcrowding, and advanced shipment tariff. The vagueness will wield descending strain on revenues. This may result in a general swell in freight transport demand. It is nevertheless the catastrophe brought about by this global cut short of business supply chains that will possibly bring to bear the prevalent impact on worldwide transport requirement, with enormous impacts on the internationalized trade and industry arrangement. Logistics firms, which are concerned with the movement, storage, and flow of goods, have been directly affected by the COVID-19 virulent disease. As a fundamental component of value chains, both within and across global borders, logistics firms assist trade and commerce and aid businesses move their products to customers. Supply chain disruptions to the sector emanating from the Bubonic plague possibly will, therefore, impact logistics practices of clearing and forwarding companies.

Empirical Review

Ikegwuru and Harcourt Horsfall (2020) investigated cronavirus containment measures and rapid-fire changes in purchase behaviour in Rivers State of Nigeria by means of cross-sectional survey design. A convenient sample (non-probability sampling method) was used to select 320 consumers from the senatorial districts of Rivers State, and a total of 296 copies of questionnaire were received from respondents, giving a 92.5% response rate. Analysis was carried out by means reliability analysis, descriptive statistics and regression analysis. The outcome disclosed that the stay at home, locking up of shops/markets and curfew/restriction of movement orders by government have a positive and significant effect on rapid-fire changes in purchase behaviour in Rivers State of Nigeria. The study therefore, concludes that coronavirus containment measures significantly and positively influence rapid-fire changes in purchase behaviour of consumers in Rivers State of Nigeria.

Acee-Eke and Ikegwuru (2020) examined the association between coronavirus containment measures and patronage of supermarkets in Rivers State of Nigeria, using locking of shops/markets, and closure of borders as dimensions on patronage. The population of the study constitutes 50 supermarkets in the area of Port Harcourt, Rivers State of Nigeria. A convenient sample (non-probability sampling method) of 250 consumers was gathered for the study. Out of the total of 250 questionnaires distributed, 200(80%) questionnaires were returned and utilizable. The Pearson Product Moment Correlation (PPMC) and Analysis of Variance (ANOVA) were used as statistical tests to decide the extent of relationship between the variables in the study, and the difference in mean responses. The chief findings of the study established a general strong, positive and significant association of coronavirus containment measures with patronage of supermarkets in Rivers State of Nigeria The study recommends that, the management of supermarkets should exploit this phase of shop/markets lock up and border closure to be down to

business in the supply of indispensable products that will alleviate the consumers' interests and hence enhance their patronage.

Ivanov (2020) explored epidemic outbursts are a unique case of supply chain (SC) risks which is uniquely differentiated by a long-standing disruption existence, disruption propagations (i.e., the ripple effect), and high uncertainty. The study used the results of a simulation study that unbolts some novel research apprehensions on the impact of COVID-19 (SARS-CoV-2) on the global supply chains, by First, we communicating the precise attributes that enclose pandemic eruptions as a exclusive type of SC disruption risks, exhibits how simulation-based methodology can be utilized to scrutinize and envisage the impacts of epidemic outbreaks on the SC performance by means of the example of coronavirus and anyLogistix simulation and optimization software. The most important observation from the simulation experiments is that the timing of the closing and opening of the amenities at different heights might develop into a key factor that determines the epidemic outburst impact on the SC performance rather than an upstream disruption interval or the speed of pandemic promulgation. Other significant factors are lead-time, speed of epidemic promulgation, and the upstream and downstream disruption intervals in the SC.

Based on the review of literature, the following research model was developed:
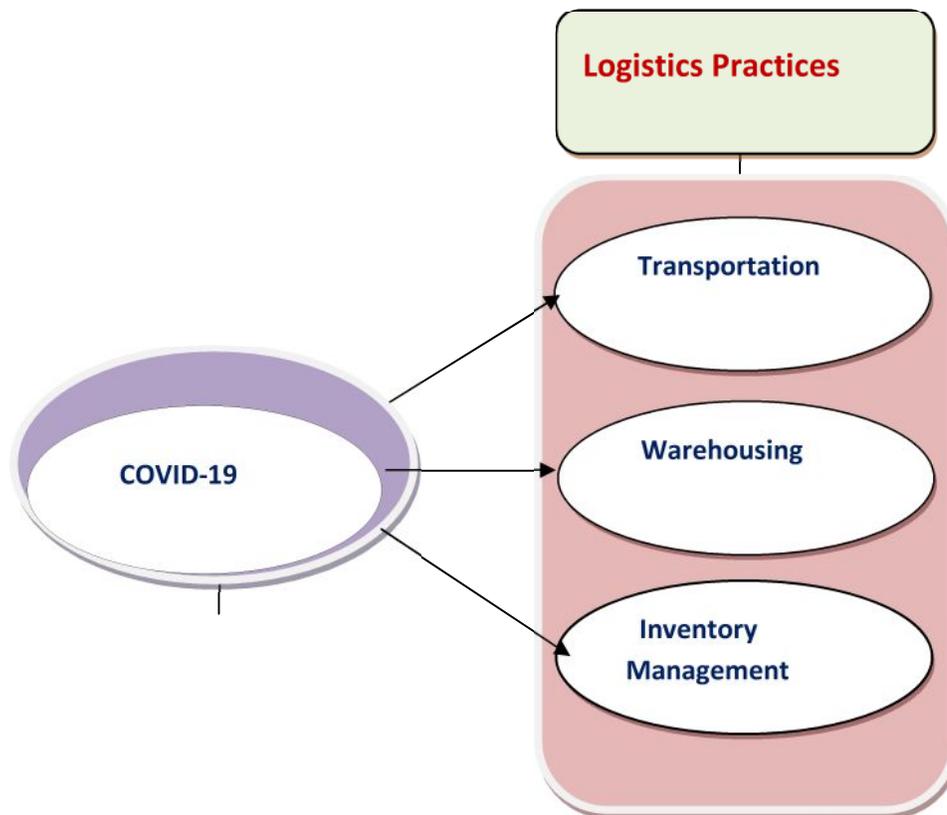

Figure 1: Research Model of Impact of COVID-19 Pandemic on Logistics Practices
Source: Adopted from McGinnis, M.A. & Kohn, J.W. (1990). A factor analytic study of logistics strategy. *Journal of Business Logistics, 11 (2), 41-63.*

Based on the research model the following hypothesis was formulated:

Ho$_1$: COVID-19 pandemic does not negatively impact on logistics practices of clearing   and forwarding companies in Rivers State.

METHODOLOGY
The researchers used descriptive research design. The simple random sampling technique was employed in this study. The population of the study consists of 55 clearing and forwarding companies in Rivers State who engaged in carriage accomplished through single mode or multimodal transport methods. The sample size was arrived at by assessing four personnel from each of the 55 clearing and forwarding companies studied. The sample size was 275. The number of completed and usable response is 269 out of 275 responses, with a response rate of 97.8%. The researchers used regression analysis to show the effect of the independent variable on the dependent variable. The regression equation was as follows; Y =   +   1X1 +

  = Constant   1 = Partial regression coefficient

 Y = Logistics Practices

X1= COVID-19 pandemic

  = error term

RESULTS
Coefficient of determination
Table 1 showed that the coefficient of determination was 0.858. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (Logistics Practices) that is explained by the independent variable. From the findings this meant that 85.8% of logistics practices attributed to the independent factor investigated in this study.

Table 1: Coefficient of determination (R2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.926a	.858.	786	75.919

a. Predictor: (Constant), COVID-19 pandemic

This means that 85.8% of the relationship is explained by the identified factor namely COVID-19 pandemic. The rest 58.5% is explained by other factors in the industry not studied in this research. In summary the factor studied namely, COVID-19 pandemic explains or determines 85.8% of the relationship while the rest 14.2% is explained or determined by other factors.

Analysis of Variance (ANOVA)
The study used ANOVA to establish the significance of the regression model. In testing the significance level, the statistical significance was considered significant if the p-value was less or

equal to 0.05. The significance of the regression model was as per Table 2 below with P-value of 0.00 which is less than 0.05. This indicates that the regression model is statistically significant in predicting impact of COVID-19 pandemic on logistics practices of clearing and forwarding companies in Rivers State of Nigeria. Basing the confidence level at 95% the analysis indicates high reliability of the results obtained. The overall ANOVA results indicates that the model was significant at F = 14.406, p = 0.000.

Table 2: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	69449.11285	1	69449.11285	12. 04915	.000b
Residual	11527.63715	268	5763.81857		
Total	184471.75	269			

a. Dependent Variable: Non-Performance of Logistics Responsibilities

b. Predictors: (Constant): COVID-19 pandemic.

Discussion
This research provides an empirical justification for a framework that explores the impact of COVID-19 pandemic on logistics practices of clearing and forwarding companies in Rivers State of Nigeria. The hypothesis tested depicts that the sample of Nigerian clearing and forwarding companies evidently exhibits that COVID-19 pandemic explained a high percentage of the variance 85.8% (R2 adj) in logistics practices and has a strong, positive and significant impact on logistics practices of clearing and forwarding firms in Rivers State. This finding is not totally surprising; since some earlier studies reported similarities which are related to the effect of COVID-19 pandemic (Deloitte, 2020; Chen, 2020; Boccaletti *et al.,* 2020; Govindan, 2020). The significant findings of the research based on the regression analysis methods can be highlighted that COVID-19 pandemic contribution to explaining the variance in logistics practices in clearing and forwarding companies in Rivers State, was as a result of the disruptive impact of the bubonic plague that affected trade industry, and other spheres of human endeavours. Through this study, the researchers offered empirical data on the impact of COVID-19 on logistics practices.

The study revealed that the impact of COVID-19 on logistics practices of clearing and forwarding companies in Rivers State was at a high level, the companies studied experienced transports obstacles, delays in obtaining products to match expectations of consumers, etc. At the same time, problems in transportation of products convey and degenerating efficiency in running logistics procedures were visible. This results is consistent with previous studies such as (Ikegwuru & Harcourt, 2020; Acee-Eke & Ikegwuru, 2020; Ivanov, 2020), who found strong, positive and significant influence of COVID-19 on rapid-fire purchase behaviour, patronage of supermarkets and global supply chains respectively.

CONCLUSION AND RECOMMENDATIONS

The COVID-19 pandemic outbreak shows that pandemics and epidemics can sincerely inflict mayhem on performance of logistics responsibilities. In this study, the researchers presented a systematic analysis of the impacts of epidemic outbreaks on non-logistics responsibilities guided by a structured literature review. The research revealed that, Nigerian clearing and forwarding companies face decision making situations that borders on the successful performance of logistics responsibilities in distribution of products and services in the market. Thus, COVID-19 pandemic is unimportant for the success of logistics practices, due to the high level of its impact amongst all supply chain partners and the apprehension that cost cutting and differentiations in value delivery are responses to existing problems. The study therefore concludes that, there is a strong, positive and significant impact of COVID-19 pandemic on logistics practices of clearing and forwarding companies in Rivers State of Nigeria. The therefore, study recommends that:

Governments and management of clearing and forwarding companies should take steps to sustain this crucial sector during the period of Covid-19 pandemic, to ensure they remain in a position to perform logistic practices in the future.

Management of clearing and forwarding companies should programme the impact of COVID-19 pandemic to enhance a competitive edge and keep hold of transportation from abroad, transportation between companies and internal transport, thus positively enhancing performance of logistics responsibilities.

The outcomes of this research should be used by decision-makers in clearing and forwarding companies to predict the operative and long-term impacts of epidemic outbreaks on logistics companies and build up endemic logistics strategies.

The impact of COVID-19 pandemic should be considered by clearing and forwarding companies as an experience that would always recall the enabling of logistics practices. .

LIMITATIONS AND CONTRIBUTIONS

Even though the recent study makes inputs in the spheres of theory and practice, it however has limitations. First, our survey was restricted to 55 clearing and forwarding companies in Rivers State of Nigeria, indicating a deficient sample and we cannot extrapolate or generalize the study's findings further than these companies that got involved in the investigation illustrated at this point.

In spite of this prospective limitation, this study effectively incorporated methodical theories to examine the significance of impact of COVID-19 pandemic in logistics companies; one would look ahead to the substance of the theme dealt with herein to amplify with the passage of time. Second, our study provides a productive underpinning for all-encompassing quantitative inquiries that can observe unambiguous dynamics that assist businesses in harmonizing the need for flourishing performance of logistics responsibilities amid the threatening COVID-19 pandemic.

FUTURE RESEARCH

As a result of the study's limitations and discussion, the researchers suggest the following future research directions:

1. Expanding this current study to other types of companies and countries.

2. A study on fine points of different aspects of logistics practices by industries, and considering firms' existing logistics practices potentials in the midst of COVID-19 pandemic, by means of different methods of analysis to confirm the results of our findings.

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