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University O. Edih, Ph.D.

oweilade123uni@gmail.com
Nigerian Maritime University
Okerenkoko, Delta State

Nyanayon D. Faghawari, M.Sc.

Nigerian Maritime University
Okerenkoko, Delta State

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SECOND-WAVE EFFECTS OF COVID-19 PANDEMIC ON TRANSPORTATION BUSINESS: KEKE-NAPEP AND MOTOR-CYCLE TRANSPORT SYSTEMS IN ASABA METROPOLIS, NIGERIA

University O. Edih, Ph.D.¹, Nyanayon D. Faghawari, M.Sc.²

^{1,2}Nigerian Maritime University Okerenkoko, Delta State



ABSTRACT

Transnational, global trades, investments, and travels, amongst other drivers of globalization, helps to reverberate the deadly coronavirus pandemic from Wuhan, China, across the world like whirl fire. In order to contain the infectious spread of the pandemic, and mitigate its negative effects on macro-economic variables, the World Health Organization, (WHO) designed Covid-19 protocols that are being enforced by governments and people of the world. Based on the above account, the study examined the Second wave effect of Covid'19 pandemic on transportation business: Keke-napep and Motorcycle transport systems in Asaba metropolis, Nigeria. The main objective is to empirically determine the real impact of the pandemic on rural land transport business. The study employed structured questionnaire and interview methods to generate data from the 250 respondents selected using the census sampling technique. Out of the 250 sets of questionnaires administered, 235 (94%) were retrieved while 15 (6%) were rejected. The statistical tools used for analyzing data were correlation and multiple regression techniques. Findings were that covid'19 pandemic negatively affected rural land transport business. The study concludes that, the coronavirus pandemic caused a contraction in transport business. It is therefore recommended that, there is a need for government to relax the stringent covid'19 protocols to allow economic activities to resume again. Campaigns on safety and hygiene should be intensified so that the populace will imbibe the culture of general cleanliness and personal hygiene, amongst others.

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INTRODUCTION

COVID-19, being a world health pandemic, strangulated the global economy in its first wave. The sudden pandemic was triggered by the second+largest economy, Wuhan, China (Soludo, 2020, Warwick and Roshen, 2020, Qui et al., 2020, Brodeur, et al., 2020; Adesoji and Simplice, 2020; Zhu, et al.,2020). Despite the unpreparedness of the world to the unexpected, unintended outbreak or outburst of Covid'19, the Western countries rolled out ad-hoc cocktail interventions, including a coterie of defensive measures- border closure, isolation centers, stay+at+home or lockdown orders, social distancing, economic stimulus packages among others to mitigate the crushing hardship of Covid' 19 on world's economy (Soludo, 2020 ; Cheng, et al.,2020).

The hardship effects of Covid'19 on the global space resulted in twin pandemic- health and economic tragedies in Africa. Soludo (2020) argued that prior to the pandemics, the economic land space of Africa was in dire straits and calamitous conditions with no viable strategies for economic recovery put in place



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by governments. The unemployment rate, maladministration, and political chauvinism, etc prior to covid-19 crisis are unacceptable. Lack of good governance has caused endemic poverty, squalor disease, restiveness, insecurity, secession campaigns, etc. In Nigeria, the campaign for disintegration is a recurring decimal: IPOB, MASSOB, ODUDUWAS, ISLAMIC JIHADIST, AVENGERS, and NIGER-DELTA MILITANTS are on the rampage. The call for a referendum and in-depth constitutional reforms are resonating because of too much bloodshed and kidnapping as a business with impunity across the Land.

In order to arrest the emergent Covid'19 spread, governments in African countries copied Western countries' ad-hoc template. In Nigeria, there was a total lockdown of economic, educational, social, and religious activities, except for food, medicine, and essential services (Salami et al., 2021). As a result of the lockdown and social distancing measures, there were some panic and distorted purchases, consumption patterns, and market anomalies (Warwick & Roshen, 2020).

Warwick and Roshen (2020) argued that a contained outbreak must affect the global economy in the short run. Their study also contended that trade, land, air, and sea transportation were significantly affected by the pandemics. Soludo (2020) suggested that African countries cannot continue to lockdown economic activities since there were no palliatives to help sustain the people. Adesoji and Simplice's (2020) findings showed that Covid'19 pandemic caused a decline in essential macroeconomic variables in Nigeria. Alex et al., (2020) opined that Covid'19 crisis spurred up the existing volatility of demand and created varieties of challenges. The transnational effects of Covid'19 pandemic have slow down the tempo of economic activities in the world (IMF, 2020a). The global economy has contracted by three percent in 2020 due to the pandemics. In the revised forecast (IMF,2020b) global economic contraction increased to 4.9 percent. Also, demands and supply shocks caused disruptions in domestic and international supply chains. There was a reduction in demand for imports, a reduction in labor hours, and lowered income earned (Brodeur et al., 2020).

The majority of studies on covid'19 were done on macro socio-economic issues which have altered the old economic order. This study therefore intends to measure the specific effect of Covid'19 on micro (land) transportation – Keke-napep and Motorcycle transportation systems in Asaba metropolis, Delta State, Nigeria. The main objective is to empirically determine the real impact of the pandemic on rural land transport business.

REVIEW OF RELATED LITERATURE

Conceptual Review

Historical Records of Pandemic

Covid'19 is one of the series of pandemics that have ravaged the world at separate times with varying degrees of damage and destruction to the health and economic well-being of the global population. Ferguson, *et al.*, (2020) contend that pandemics are not new in human history. Based on the frequencies of pandemics in the world, Madhave *et al.*, (2017), Fan *et al.*, (2018), and Brodeur, *et al.*, (2020) argue that large-scale global pandemics were inevitable. It has also been argued that covid'19 was the most severe outbreak since the 1918 Spanish influenza pandemic (Ferguson *et al.*, (2020; Brodeur *et al.*, 2020). Brodeur, *et al.*, (2020) predict that the pandemic must exact a negative impact on global economic activities, especially in the short run. These impacts are in various forms; reactions to social distancing measures, small direct costs, indirect costs, offsetting, and cascading effects of services disruptions (Jonas, 2013). World Economic Forum (2020) tabulated a historical timeline for significant pandemics (Ferguson *et al.*, 2020; Brodeur *et al.*, 2020).



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Table 1: Historical Timeline of significant pandemic

Name	Time period	Type/Pre-human Host	Numbers of Death
Antonine Plague	165 – 180	Smallpox/Measles	5 million
Japanese Smallpox	735-737	Variola Major Virus	1 million
Plague of Justinian	541 – 542	Yersinia pestis bacteria/rats, fleas	30-50 million
Black Death	1347 – 1351	Yersinia pestis bacterial/rats/fleas	200 million
New World small out break	1520 – onwards	Variola Major Virus	56 million
Great plague London	1665	Yersinia pestis bacteria/rats, fleas	100,000
Italian Plague	1629-1631	Yersinia pestis bacteria /rats, fleas	1 million
Cholera Pandemic 1-6	1817-1923	V.cholerae bacteria	1 million plus
Third Plague	1885	Yersinia pestis bacteria/rats, fleas	12 million in china & India
Yellow fever	Late 1800s	Virus/Mosquitoes	100,000 – 150,000 (USA)
Russian Flu	1889 – 1890	H ₂ N ₂ (avian origin)	1 million
Spanish Flu	1918-1919	H1N1 virus/pigs	40 – 50 million
Asian Flu	1957 – 1958	H2N2 virus	1.1 million
Hong kong flu	1968 – 1970	H3N2 virus	1 million
HIV/AIDS	1981-Present	Virus/Chimpanzees	25-35 million
Swine flu	2009 – 2010	H1N1 virus/Pigs	200, 000
SARS	2002 – 2003	Corona virus / bats, civets	770
Ebola	2014 – 2016	Ebola virus/Wild animals	11,000
MERS	2015 – Present	Corona virus/bats	850

Source; World Economic Forum (2020); Brodeur et al. 2020

COVID-19 Pandemic

According to Warwick and Roshen (2020), Covid'19, previously known as 2019 – n Cov, was caused by the SARS-COV-2 virus. The outbreak was caused in 2019 in Wuhan City, China (Adesoji and



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Simplice, 2020; Qui *et al.*, 2020). It was initially regarded as a regional health challenge and potential risk of global spread was underestimated (Adesoji and Simplice, 2020). As of the time of writing this paper, the world is experiencing the second-wave effect of covid'19, with a high death toll recorded in India. The Chinese health challenge has metamorphosed into a global problem with lethal consequences on socio-cultural and economic activities (Adesoji and Simplice, 2020; Price and Van, 2020; Ezeaku and Asongu, 2020). As of 2nd June, 2021, statistics revealed that the total global confirmed cases of covid-19 were 170,747,377 while the global death toll was 3, 557,586 and 154,787,955 had recovered. It is also recorded that about 1, 581,509,625 vaccine doses have been administered across the world (WHO Report, 2021; www.worldometers.info)

Nigeria recorded the first case of Covid'19 on the 27th February, 2020. As of 2nd June, 2021, total confirmed cases stood at 166,386 with 159,935 discharged and 2,099 deaths (Nigeria Center for Disease Control, 2021). The cumulative records of confirmed cases and death tolls of 13 countries are as follows;

Table 2: Cumulative Covid'19 Cases and Death as of 18 April, 2021

Countries	Cumulative confirmed cases	Cumulative Number of Deaths
World	140,332,386	3,499,942
USA	31,250,638	368,749
India	14,788,109	177,150
Mexico	2,299,939	211,693
United Kingdom	4,385,942	127,260
Italy	3,857,443	116,676
Russia	4,702,101	105,582
France	5,178,513	99,921
Germany	3,142,262	79,914
Colombia	2,619,422	67,564
Spain	3,396,685	76,882
Iran	2,215,445	66,327
Nigeria	164,146	2,061

Source; WHO Report, 2021.

Nigeria, being a resource-dependent developing country, is confronted with the brunt of fluctuations in the price of crude oil, which amount to about 70 percent of its GDP and 65 percent of total government revenue (Adesoji and Simplice, 2020). The vulnerabilities of macroeconomic variables resulting from the effects of the pandemic (infectious diseases) on the global economy spurs the need to understand the macroeconomic effect of covid'19 on microeconomic variables in Nigeria.



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Keke-napep and Motorcycle Transportation System

The machinery for land transportation across the world include; vehicles, and train. Keke-napep (i.e, tricycle), motorcycle and possibly bicycles. Horses and Camels are outdated means of transportation on land. This study is focused on Keke-napep, and motor-cycles as means of land transportation.

The idea of Keke-napep (tricycle) transport system was imported from India. This mode of transportation was inaugurated by the Government of Emmanuel Uduaghan in Delta State, Nigeria in 2009. The reason was that, criminal activities were perpetrated by hoodlums using motorcycles. Therefore, in order to curb the ongoing atrocities committed by disgruntled elements in major cities and towns of Delta State, the use of motorcycles for transportation was banned by the government from use in designated cities and towns. At inception, the maximum number of passengers that boarded the keke-napep was four plus the driver totaling five persons. This model of transportation was applauded by the majority of the people because the elements of criminality were drastically reduced in the State.

However, during the outbreak of covid 19, and to ensure social distance order, the maximum number of passengers was reduced to two. For owners of Keke-napep to meet up with running and maintenance expenses, they increased their fare price by 200% and the measure exacerbated the hitherto hardship in the Land. The Keke-napep transportation system is designed to ply internal roads in Asaba Capital Territory, Agbor, Warri, Ughelli and Ibusa.

On the part of Motorcycle Transport; motorcyclists were allowed to ply roads linking hinterland not pliable by Keke-napep. This is to say, motorcycle ban was not total in Delta State. For the purpose of transportation and maintenance of Motorcycle Association rules and regulations, every motor-cyclist is only allowed to carry one passenger. This mandate was not altered by the outbreak of covid-19 pandemic. The stay-at-home order was enforceable in the cities but very porous in the hinterland – communities where bush markets thrive.

Restriction of people's movements was not as pronounced in the rural communities in Delta State, Nigeria. The use of face masks, sanitizing hands, and other stringent covid' 19 protocols were maintained in government and financial institutions but somehow free as air in the interiors due to unbelief on the contagious effect of the coronavirus disease, which they believe is a whiteman sickness. In this case, it seems that transportation was regular and unhindered by covid' 19 protocols in the rural towns and communities. The motorcycle transportation is designed to ply inter –communities' roads, Asaba-Ugbolo, Ugbolo-Ugwashuku, Akpu-Junction- Okapanam, Ibusa – Ugwashukwu, and so on.

Empirical Review

Gourinchas (2020) summarizes that covid'19 pandemic has caused a cascading effect on economic activities in the world because of the complex web of interconnected players such as employees, firms, suppliers, consumers, and financial institutions. Baldwin (2020) sees the effect of covid' 19 on household income, and demand/supply shocks. The reductions in household income, demand, and supply have also decreased the use of the factors of production. The effects of social distancing and lockdown may compound the unemployment rate in the world. It has been argued that about 50 percent of the labor force might not be employed in the short run (Carlsson-Szlezak and Swartz, 2020; Gourinchas, 2020).

According to Ludvigson *et al.*, (2020), covid'19 pandemic resulted in multiple exogenous shocks to global economy. The global lockdown is a contraction of labor supply-causing a decline in real GDP (Bonadio *et al.*, 2020). Mulligan (2020) finds that a shutdown causes a welfare loss of approximately USD 7 trillion. Baker *et al.*, (2020) discovered that households increased their spending on retail and food initially due to the fever of covid'19. Studies on the effect of covid'19 on work hours and job losses



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were conducted by (Adams-Prassi *et al.*, 2020; Beland *et al.*, 2020; Kah *et al.*, 2020). Unemployment and job loss were severe in the US. The employment rate falls by about 1.7 percent (Rojas *et al.*, 2020; Gupta *et al.*, 2020). Some authors consider the solution to lockdown by working from home. Dingel and Neiman (2020) see that jobs can be done from home. Covid'19 crisis also caused a 67 percent decline in the total member of outpatient visits per provider per week. Parents with chronic diseases experienced negative consequences (Chatterji and Li, 2020; Brodeur *et al.*, 2020c).

Covid'19 shock led to a reduction in the total membership of immigrants employed in the US (Borjas and Cassidy, 2020). Bartos *et al.*, (2020) argue that the pandemic escalates hostility and discrimination against foreigners, especially from Asia. According to Cheng *et al.*, (2020) dataset, there are variations across policy measures employed by governments ranging from external border closures or restrictions, school closures, restriction of non-essential business, new task force, restriction of movement, etc. The external border closure restricted access to entry through ports as imposed by 186 countries. Internal restriction of movement of people affects the transportation business. The front-load mitigation strategies are imposed to restrict movement to stem the spread of infectious diseases (Jones, *et al.*, 2020). Too strict a lockdown will cause the global economy to slide into recession or depression (Jones, *et al.*; 2020). African countries will unable to survive a prolonged lockdown (Soludo, 2020).

Theoretical Review

World System Theory

For this study, arguments and counter-arguments, diverse schools of thought, perspectives, and opinions surrounding the evolution of theories of globalization are deliberately avoided in this review. However, the World System paradigm is seen as the precursor to globalization, and the sociological model (Arrighi as cited in Robinson, 2007). Immanuel Wallerstein, the principal progenitor of World System Theory, sees globalization as an old phenomenon synonymous with the birth and spread of World Capitalism (Robinson, 2007). World System Theory in conjunction with other theories of globalization critiqued capitalism as an expansionary economic system that encompasses the entire globe. This capitalist ideology brought all peoples, nations around the world into a single worldwide socio-economic structure. The capitalist world system encompassed the entire planet, turning it to a global enterprise in the nineteenth century. It is on the account that the World System Theory is seen as a theory of globalization (Robinson, 2007).

The world has been adjudged as a global village due to the emergent of internet connectivity, telecommunication, transportation networks, and other forms of technologies and digitization of the 21st century. Several theories drive the ideas of globalization i.e., global network, global capitalism, empire system (Fuchs, 2008), and network society (Castells, 1996), global culture, modernity and post-modernity, transnationality and transnationalism, theory of space and place, etc. These theories are not entirely separate from one another because of the underlying, and relational philosophies linking their objectives and application in actualizing the ideals of globalization.

Global corporations, multinational corporations, and transnational corporations depend on the drivers of globalization to propagate their business goals and visions. The ideas of these transnational/multinational business conglomerates have taken the entire world as a global market – connecting independent countries as a network of business relationships and expediting the exchange of goods and services. Ideally, no independent country can stand as an island economically or otherwise. It is evident by the socio-political and economic structure of the world, developed nations depend on developing countries for raw materials, and labor while the developing world relies on the advanced world for refined products, expatriate services, and technologies.



Naturally, countries are distinctively endowed with diverse kinds of empowerment – human population, technical know-how, finances, technologies, mineral resources, military prowess, and wares. These unequalled capacities must be harnessed on a comparative basis to fit into the global market or global network for exchange and mutual development. The covid-19 pandemic, which was triggered in Wuhan, China, spread across the globe like a thunderbolt, being facilitated by drivers of globalization- the movement of persons through air, land, and sea transportation. Therefore, the World System Theory is germane to this study.

RESEARCH METHODOLOGY

The study used the census sampling technique to select the 250 respondents who were administered copies of a structured questionnaire. Out of the 250 sets of the questionnaire administered, 235 (94%) were retrieved, and 15 (6%) were rejected. The study adopted correlation and multiple regression statistical tools to analyze the data generated from the field. An interview was also conducted to corroborate the response obtained from the administered questionnaire. The 10-item structured questionnaire was validated using a sampling validity technique. The framework connecting the independent variable (covid-19: lockdown, social distancing) and the dependent variable (transportation: keke-napep transport, motorcycle transport) is demonstrated below;

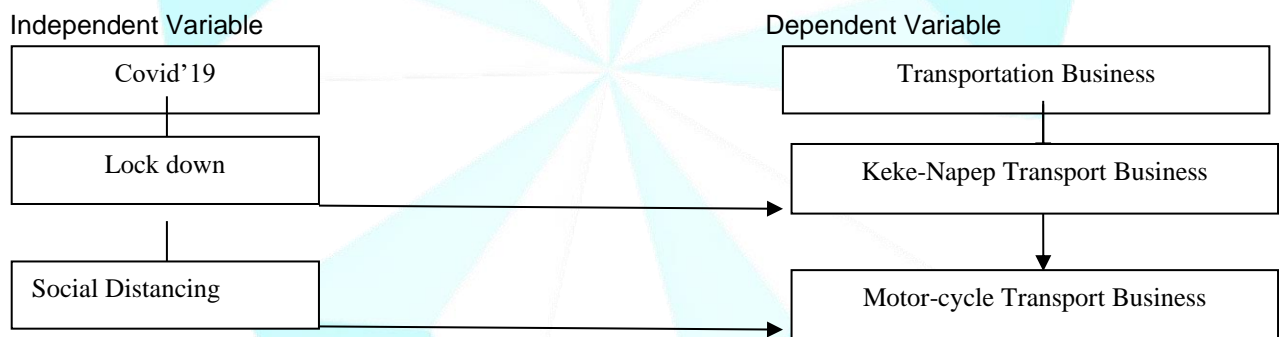


Figure 1: Framework indicating the connection between independent and dependent variables

RESEARCH FINDINGS AND DISCUSSION

Table 3: Correlation Matrix showing Dimension of Transportation and Covid'19

	Covid - lockdown	Covid - social distancing	Transport business
lockdown	1		
Social distancing	.484 ^{xx}	1	
Transport business	.556 ^{xx}	.591 ^{xx}	1

^{xx} correlation is significant at 0.01 level (2-tailed)

source: Analysis of field data, 2021



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Table 3 shows the correlation analysis of the dimensions of transportation and the covid'19 pandemic. It showed that covid-lockdown exhibited a positive correlation with covid-social distancing ($r=.484xx$, $P<.01$), and transport business ($r = .556 xx$, $P < 0.01$) while covid-social distancing had a positive and significant correlation with the same variables.

Table 4: Multiple Regression Analysis of Covid'19 on Keke-Napep and Motorcycle Transportation

Coefficients

Model	Unstandardized coefficients		Standardized coefficients	t	Sig
	B	Std. Error	Beta		
(constant)	7.875	1.502		5.438	.735
1 Covid-lockdown	.117	.075	-0.137	1.439	.06
Covid – social distancing	.175	.078	-0.174	1.816	.07

Dependent variable: Transportation business
Source: Analysis of Field Data, 2021.

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	sig.
	Regression	66.077	3	21.245	6.923	.000 ^b
1	Residual	355.623	120	2.946		
	Total	421.700	123			

- a. Dependent variable: transportation business
- b. Predictors: (constant), covid-lockdown, covid-social distancing

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. the error in the estimate
1	.413 ^a	.172	.152	1.7603

- a. Predictors: (constant), Covid-lockdown, Covid-social distancing
- Source: Analysis of Field Data, 2021

The study is focused on the Second wave effect of Covid'19 pandemic on the transportation business: Keke-napep and Motorcycle transport systems in Asaba metropolis, Nigeria. The result of the correlation matrix analysis involving the dimensions of Covid'19 and transportation business showed positive



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correlation coefficient values. This is an indication that the dimensions are appropriate measurements for assessing impact of Covid'19 pandemic and land transportation business. The result from the Multiple Regression Analysis recorded the second wave effect of Covid'19 on Keke-napep and Motorcycle transportation business. The two constructs used for Covid'19: Covid-lockdown ($B=-0.0137$, $P > 0.01$), Covid-social distancing ($B=-0.0174$, $P > 0.01$) exhibited statistically significant negative effects on Keke-napep and Motorcycle transportation business respectively.

The result provided support for H_1 test. It was revealed that there is a statistically significant adverse effect of Covid'19 pandemic on Keke-napep transportation business ($p_{cal}.0.06 > P_{crit}. 0.05$). These findings align with Bonadio *et al.*, (2020) that global lockdown has caused a decline in real GDP. The studies of Carlsson-Szlezak *et al.*, (2020b) and Gourichas (2020) contend that social distancing and lockdown have worsened global unemployment rate. Warwick and Roshen (2020) showed that air, land and sea transportation were negatively affected by Covid'19 pandemic. Interview reports also supported these findings; "that the lockdown and social distancing, curfew, tasks-force measures imposed by the government restricted people from movement and travels. Furthermore, the reduction of number of passengers per Keke-napep from four to two persons amounted to 50% loss of revenues.

Similarly, the findings of H_2 test results indicated that a statistically significant adverse effect of Covid'19 pandemic on Motorcycle transportation business ($P_{cal}. 0.07 > P_{crit}.0.05$). These findings are supported by the studies of (Borjas & Cassidy, 2020; Jones *et al.*, 2020; Warwick & Roshen, 2020), immigrants were curtailed, front load mitigation restricted internal movement of persons and travels, and air, land and sea transport were restricted. Interview reports also corroborated these findings, " that people for fear of contacting the contagious and deadly coronavirus diseases remained indoors - welcomed the stay-at-home order of the government".

CONCLUSION

The study concludes that the coronavirus disease pandemic negatively and significantly affects Keke-napep transportation business. It also adds that Covid'19 pandemic had a negative significant effect on Motor-cycle transportation business. It is evident that lockdown, social distancing, curfew, and other Covid'19 protocols amounted to contraction of business activities worldwide. Traffic along intra cities, intra towns/villages as well as inter cities, inter towns/villages were restricted due to covid 19 induced lockdown , social distancing , task forces, and other protocols imposed by WHO and governments of independent countries worldwide.

Based on these findings, the study recommends as follows;

There is a need for government to relax the imposition of strict lockdown measures. The order to close borders should be lifted to facilitate international exchange of goods and services across multilateral relationships. The campaign to keep the Covid'19 protocols should be intensified so that the populace will maintain a culture of safety and personal hygiene.



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