

THE SOCIO-ECONOMIC IMPACTS OF COVID-19 PANDEMIC ON ROAD TRANSPORTATION IN KADUNA METROPOLIS, 2019-2023

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Abstract

This paper explores the impact of the COVID-19 pandemic on road transportation in Kaduna Metropolis between 2019 and 2023, with a focus on its economic effects on transport operators. The pandemic significantly disrupted the transportation sector, leading to increased costs amid widespread job losses, as 30-35% of transportation workers lost their livelihoods. This economic dislocation contributed to heightened security concerns in the metropolis, as many who were once employed in the sector faced severe deprivation and poverty. Using both primary and secondary data sources, including questionnaires distributed across three local governments within Kaduna metropolis areas and in-depth interviews with stakeholders, this paper provides an analysis of the pandemic's impact. The findings are contextualised within System Theory, which helps to illuminate how the pandemic disrupted the transportation system's functioning. The paper calls for the Kaduna State government to implement measures to alleviate transportation challenges during future pandemics and emergencies. These measures include investing in public transportation infrastructure and providing financial assistance to affected workers. Additionally, the paper advocates for a partnership between the National Union of Road Transport Workers (NURTW) and the Kaduna State government to establish safety protocols that will ensure the sector's resilience in times of crisis. Finally, the adoption of modern technology is emphasised as a crucial strategy for reducing the need for physical contact, thereby safeguarding public health during pandemics.

Keywords: *Socio-Economic, Covid-19, Pandemic, Road Transportation, Kaduna Metropolis*

Introduction

The transportation sector is crucial to any economy, underpinning national development by facilitating the movement of people, goods, and information. Both public and private sectors have heavily invested in enhancing transportation systems, including railways, and expanding ride-hailing and delivery services. However, the COVID-19 pandemic severely disrupted this vital sector, making it one of the hardest hit economically.

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Travel restrictions implemented to control the spread of the virus significantly hampered transportation companies, leading to reduced revenues, wage cuts, layoffs, and even bankruptcies (Nwaeze, 2020; Arab Trade Union Confederation, 2021).

The pandemic, caused by a novel coronavirus that emerged in early 2020, has brought widespread upheaval across multiple sectors, including health, economic stability, the environment, and social interactions. The rapidly changing nature of the pandemic led to frequently fluctuating local and national regulations and guidelines (WHO, 2021; Nehiba, 2021). In Europe, the COVID-19 pandemic had a profound impact on the transportation sector from its onset in early 2020. Land passenger and cargo transport activities were drastically reduced due to restrictions aimed at containing the virus, compounded by a sharp decline in demand for these services. The bans on commercial motor, passenger, and cargo freight movements, designed to curb the virus's spread, further exacerbated the economic downturn. Estimates of total losses in Europe for 2020 are around 1 trillion euros (Tzvetkova, 2021).

Similarly, African countries, including Nigeria, implemented strict measures such as social distancing, mask mandates, frequent hand washing, and lockdowns starting in March 2020. These measures significantly impacted businesses, leading to widespread closures and job losses, with the public transport sector—both formal and informal—being particularly hard hit. Reduced travel demand led to severe financial stress, especially for vulnerable workers such as minibus drivers, conductors, and taxi drivers (World Bank Group, 2020).

In Nigeria, the transportation sector plays a critical role in economic development, contributing 2.49 per cent to the country's nominal GDP in the first quarter of 2019, with revenues reaching \$720.241 million by the third quarter. The sector's importance was highlighted when Nigeria confirmed its first COVID-19 case on February 28, 2020, prompting authorities to enforce various preventive measures, including travel bans and self-isolation mandates (Oladimeji, 2021).

The COVID-19 pandemic marked a particularly challenging period for Nigeria's transportation sector, including in Kaduna State. The strict measures, such as the total ban on metropolitan and interstate travel enforced by security forces, brought the sector to a near standstill, severely affecting air, rail, and road transport. Although these bans were lifted in late 2020, the pandemic's impact and subsequent restrictions continue to affect the transportation sector in Kaduna State. This research aims to explore the socio-economic impacts of the COVID-19 pandemic on the road transportation sector in Kaduna Metropolis, Kaduna State, Nigeria.

Literature Review

Understanding the Covid-19 Pandemic

Lee (2020) supports that COVID-19 is transmitted when people inhale air contaminated by droplets and small airborne particles containing the virus. The risk is highest when people are in close proximity, but these particles can be inhaled over longer distances, especially indoors. Transmission can also occur if contaminated fluids enter the eyes, nose, or mouth, and in rare cases, through contaminated surfaces. Infected individuals are contagious for ten days and can

spread the virus even without showing symptoms. Mutations have resulted in many strains (variants) with varied degrees of infectivity and pathogenicity, indicating that COVID-19 is highly contagious due to contemporary societies' extreme interconnectedness. Thus, viruses spread rapidly, akin to the speed of a jet rather than a steamboat.

The COVID-19 pandemic caused widespread social and economic disruptions, leading to one of the deepest global recessions. The pandemic also resulted in significant supply shortages, including food, due to disruptions in the supply chain (Manuel & Herron, 2020). These disruptions were mainly caused by government measures to curb the pandemic's spread, such as travel restrictions, lockdowns, business limitations and closures, occupational hazard controls, quarantines, testing systems, and contact tracing of infected individuals (Manuel & Herron, 2020). In examining the pandemic's devastating effects, Manuel and Herron (2020) outlined several measures to prevent COVID-19, emphasising that COVID-19 vaccines have been approved and widely distributed. However, they did not explain the nature of COVID-19 or its contagiousness, nor did they discuss the vaccines' efficacy against new variants of the infectious disease.

Since its identification in 2019, COVID-19 has spread to over 155 countries, causing significant morbidity and mortality (Wu et al., 2020). By May 14, 2020, there were 5,103,006 reported cases of COVID-19 globally, with 109,536 deaths, making up 2.15% of infections. The distribution of deaths as of that date was 2,504 in Africa, 5,119 in South-East Asia, 62,221 in the Americas, and 21,413 in Oceania and Europe. By October 2021, less than a year into the pandemic, the total number of confirmed cases had surged to 34,804,348, with 1,030,738 deaths globally, representing a 2.96% fatality rate (WHO, 2020). These figures illustrate why COVID-19 has garnered significant global attention, prompting widespread awareness campaigns and lockdown measures.

Verikios (2020) argued that the widespread lockdowns led to an unprecedented reduction in pollution. Numerous regions closed educational institutions and public spaces, and many events were cancelled or postponed. This situation led to the spread of misinformation on social media and mass media, escalating political tensions. The pandemic also raised issues related to racial and geographic discrimination, health equity, and the balance between public health imperatives and individual rights. Verikios examined the effects of COVID-19 from both beneficial and detrimental perspectives. He noted that lockdowns resulted in reduced pollution, which positively impacted societal well-being and climate conditions. Additionally, he emphasised the importance of public health and individual rights, stating that adequate healthcare is a fundamental right for all citizens. Given that COVID-19 is a health condition, its management requires advanced and well-equipped health facilities. Consequently, it is crucial for nations, especially developing ones like Nigeria, to enhance their public health infrastructure to manage current and future infectious diseases better.

COVID-19 and Sustainable Transportation System

Transportation, defined as the movement of people, goods, and information from one location to another, has been an essential aspect of human life since ancient times. People have always needed to move across the earth's surface, carrying food, belongings, and cultural elements, using the technology available at the time (Onokala, 2004). Scholars have consistently emphasised transportation's critical role in facilitating social interaction, economic development, and human welfare. For example, Olakunori (1992) defines transportation as the movement of people and goods from one place to another for commercial or non-commercial purposes, while Aigbedion, Salihu, and Omoruyi (2015) highlight its importance in enabling social interaction and economic activities.

Anyanwu (1997) views transportation as essential for moving goods and people, while Good and Jebbin (2015) describe it as a system that supports both domestic and international movement, crucial for physical distribution. Onokala (2004) further emphasises that transportation connects people, goods, and services across physical and cultural barriers, facilitating the distribution of resources between areas of abundance and scarcity. This makes transportation indispensable in social, political, and economic life, as seen in the daily activities of rural, urban, and regional communities worldwide.

The road transport sector, in particular, is fundamental to society. It supports daily activities such as commuting to work, transporting goods, and enabling social interactions in various settings, including religious institutions, markets, schools, and offices (Olakunori, 1992). Road transport also adds value to goods by making them accessible to consumers, ensuring that they reach the right place at the right time (Pradhan, 2010). Industries like daily newspapers rely on road transport for timely delivery, as delays can render news obsolete and less valuable (Aigbedion et al., 2015). Thus, an efficient road transport system is crucial for societal satisfaction and the overall socio-economic well-being of any society.

The COVID-19 pandemic, which began in late 2019, has had a profound impact on the transportation sector globally, disrupting the mobility and connectivity of people and goods. The pandemic led to the shutdown of many economic activities or a significant collapse in demand, particularly in the transportation sector. Social distancing measures heavily impacted passenger transport services, especially in mass transit systems designed for densely populated urban areas (WBG, 2020). This resulted in decreased demand for motorised trips, reduced congestion levels, lower transit ridership, and diminished transport externalities (Arellana, 2020).

The unforeseen outbreak of COVID-19 posed numerous challenges to the transportation sector, including strict import and export restrictions, reduced passenger travel demand, and altered customer relationships (Karaman et al., 2020; Mitrega & Choi, 2021). The literature highlights significant disruptions in logistics and freight transportation, causing supply chain delays and exposing vulnerabilities in global networks (Ojelade et al., 2022). These challenges underscored the need for efficient and resilient transportation systems, emphasising the importance of government preparedness and response. Drawing from lessons learned during the 2003 SARS outbreak, China implemented proactive measures, including sanitation and epidemic prevention,

which were crucial in combating COVID-19. Effective policies, such as information transparency and infection traceability, played vital roles in managing the virus's spread and ensuring safety in the transportation sector (Ho, Xing, Wu, & Lee, 2021).

The pandemic also accelerated changes in transportation behaviour, with a rapid shift towards teleworking, online education, and e-commerce, transforming travel patterns and business operations. As countries transition to the post-pandemic era, there is increasing recognition of the need for more sustainable and adaptable transportation systems (Subramanya & Kermanshachi, 2021). Researchers have observed a shift in travel demand, with a preference for individual transportation modes over communal ones to minimise infection risk. This change has reduced travel for various purposes, affecting both passenger and freight transportation (Tan & Ma, 2021). COVID-19 caused unprecedented disruptions across industries, particularly in transportation, leading to significant economic consequences. The pandemic's impact varied across different transportation segments; for instance, lockdowns halted construction activities, severely limiting haulage in the building sector. Conversely, there was a surge in demand for food suppliers and delivery services, reflecting the complex interplay between supply chain disruptions and changing consumer behaviours (Ho, Xing, Wu, & Lee, 2021).

Rothengatter et al. (2021) provide a comprehensive analysis of the global transport sector's response to the pandemic, highlighting significant changes in daily life, work, and business operations. They stress the critical role of transport networks in economic activities and the importance of their recovery for overall economic revival post-pandemic. The study also discusses the global economic downturn in 2020 and the significant loss of working hours compared to the previous year, underscoring the severe economic repercussions of the pandemic. Additionally, the authors examine worldwide political actions taken to mitigate the pandemic's negative impacts, noting diverse strategies adopted by different countries during the initial outbreak and the influence of cultural factors on the virus's spread and severity across societies.

Theoretical Framework

The General System Theory (GST), developed by Ludwig von Bertalanffy (1956) and expanded by social scientists like David Easton and Gabriel Almond, provides a framework for analysing complex systems. GST emphasises the interaction between a system and its environment, focusing on how inputs are transformed into outputs to maintain stability. In Kaduna State, GST is relevant for understanding the government's role in resource allocation and the impact of external factors, like the COVID-19 pandemic, on the political and social structures. The theory underscores the functional relationships within the system, which is crucial for analysing disruptions.

The Study Area

Kaduna, founded by British colonists in 1900, was chosen by Sir Frederick Lugard, the first British governor of Northern Nigeria, for its strategic location near the Lagos-Kano Railway (Falola et al., 2018; Encyclopedia Britannica, 2016). It became the capital of Nigeria's former

Northern Region in 1917 and retained this status until 1967 (Fletcher & Cruickshank, 1996). Today, Kaduna is an influential centre for political, military, and cultural organisations in northern Nigeria.

As the capital of Kaduna State, located in the northwestern part of Nigeria on the Kaduna River, the city serves as a key trade and transportation hub, often referred to as a gateway to the northern states due to its extensive rail and road networks. The current population of Kaduna State is estimated at 8,252,366, with about 1,721,078 residents in Kaduna Metropolis (Kaduna State Bureau of Statistics, 2002).

Kaduna State is home to one of Nigeria's oldest international airports, established in 1982. The city also hosts the Nigerian Air Force centre and is situated on the route of the planned Lagos–Kano Standard Gauge Railway, with the Abuja–Kaduna section completed. Trains to Abuja depart from Rigasa Railway Station in Kaduna. Moreover, Kaduna is a significant junction on Nigeria's Cape gauge railway network, connecting the Lagos–Nguru Railway to the Port Harcourt–Maiduguri railway (Muhammad, 2016). The metropolis comprises four local governments: Kaduna North, Kaduna South, Igabi, and Chukun.

Relevance and Scope of the Study

The relevance of this study lies in its exploration of the socio-economic impact of the COVID-19 pandemic on the transportation sector in Kaduna Metropolis. As a major transportation hub in northern Nigeria, Kaduna's economy is heavily reliant on its transport services. Understanding the extent to which the pandemic affected transportation operators, businesses, and the general population offers critical insights into post-pandemic recovery strategies.

The scope of the study encompasses a detailed examination of the short and long-term economic effects on transportation workers, changes in profitability, and the broader societal impacts such as increased crime and loss of livelihoods. By focusing on responses from key stakeholders and integrating local government data, the study aims to provide a comprehensive analysis that highlights both the challenges faced during the pandemic and potential solutions for strengthening the transportation sector in Kaduna post-crisis.

Methodology

This study employs a descriptive survey research design to assess the impact of COVID-19 on the road transportation sector in the Kaduna Metropolis. As defined by Best and Kahn (1986) and Kerlinger (1967), this research method involves collecting and analysing data to describe current conditions, practices, and attitudes, and to identify variables related to a specific problem. The study samples a portion of Kaduna Metropolis's population to understand the pandemic's effects on transportation.

Sample Frame

The sampled population for this study includes transportation operators, business owners, and residents of Kaduna Metropolis who were directly or indirectly affected by the COVID-19

pandemic. The sample frame is drawn from three key local government areas within Kaduna Metropolis: Kaduna North, Kaduna South, and Chukun. These areas are central to the city's transportation activities and were chosen to ensure a diverse representation of respondents, including taxi drivers, KEKE NAPEP operators, bus operators, and commuters. The study also includes interviews with officials from the National Union of Road Transport Workers (NURTW) and local business owners to gain further insights into the economic impacts on the transport sector during the pandemic.

Instrument

Data were gathered from both primary and secondary sources. Primary data collection involved distributing questionnaires and conducting interviews, while secondary data were obtained from textbooks, journals, reports, and newspapers. The study adopted a mixed-method approach, where quantitative data from the questionnaires were triangulated with qualitative data from interviews and secondary sources for a comprehensive analysis.

Using Taro Yamane's formula, the study determined a sample size of 400 based on the population of Kaduna Metropolis. Out of the 400 questionnaires distributed, 388 were successfully retrieved, and the analysis is based on these responses. The study's findings offer insights into the socio-economic impact of COVID-19 on Kaduna's road transportation sector, providing a foundation for addressing the challenges identified.

Table 1.1: The Socio-economic Impact of Covid-19 on the Transportation Sector in Kaduna Metropolis

| Statement | SA | A | SD | D | TOTAL |
|--|-------|-------|-------|-------|------------|
| There exist short-term and long-term socio-economic impacts of covid-19 pandemic on transportation operators in the Kaduna Metropolis | 199 | 116 | 27 | 46 | 388 |
| | 51.2% | 29.9% | 6.9% | 11.9% | 100 |
| Transportation and associated businesses were more profitable before as compared to during and after covid-19 pandemic | 175 | 131 | 32 | 50 | 388 |
| | 45.1% | 33.8% | 8.2% | 12.9% | 100 |
| The COVID-19 pandemic has led to a high increase in the cost of transportation in the Kaduna Metropolis | 170 | 120 | 40 | 58 | 388 |
| | 43.8% | 30.9% | 10.3% | 14.9% | 100 |
| Covid-19 ban and restrictions on transportation activities led to the loss of means of livelihood among residents of Kaduna Metropolis | 166 | 159 | 29 | 34 | 388 |
| | 42.8% | 40.9% | 7.5% | 8.8% | 100 |
| Covid-19 restrictions on the transportation sector led to the loss of income and increased level of poverty, especially among transport operators in the Kaduna Metropolis | 130 | 177 | 36 | 45 | 388 |
| | 33.5% | 45.6% | 9.3% | 11.6% | 100 |
| Covid-19 restrictions on the transportation sector | 114 | 166 | 35 | 73 | 388 |

| | | | | | |
|--|-------|-------|------|-------|------------|
| rendered many youths unemployed, thus leading to increased insecurity in the Kaduna Metropolis | 29.1% | 42.9% | 9.0% | 18.8% | 100 |
|--|-------|-------|------|-------|------------|

Source: Fieldwork, 2024

The table above, which contains six statements, presents respondents’ perceptions on the socio-economic impact of COVID-19 on the transportation sector in Kaduna Metropolis. The responses are arranged in four Likert scale, with keys as follows: **AS** = Strongly Agreed, **A** = Agreed, **SD** = Strongly Disagreed, and **D** = Disagreed.

The responses on the first statement in Table 1.1 above, which talked about the "existence of short and long-term impact of Covid-19 pandemic on transportation sector in Kaduna metropolis," show that 51.2% (199 respondents) strongly agreed that there is a significant economic impact on transportation operators in Kaduna Metropolis. Those who agreed with the statement represented 29.9% (116 respondents). Respondents who strongly disagreed made up 6.9% (27 respondents), and those who disagreed accounted for 11.9% (46 respondents). This indicates that a majority of the respondents perceive a notable impact of COVID-19 on the transportation sector, with the highest levels of agreement observed in Chukun and Kaduna South.

In alignment with these findings, interviews corroborated the majority viewpoint. Saleh Mamman, a NURTW official, emphasised the evident short-term and long-term effects of the pandemic on the economy of transport operators in Kaduna Metropolis. He stated:

Yes, the COVID-19 pandemic had a detrimental effect on our operations. It is obvious. Remember how all our members were compelled to stay at home when the government enforced lockdown measures and strict penalties for any transportation workers found operating on the streets? This situation was widespread for anyone residing in the metropolitan areas of this state." (Interview, Nasarawa, Chukun, 8/4/2023).

Supporting this viewpoint, Nwaeze (2020) highlighted in his study on the broader impacts of COVID-19 on the transportation sector that there exists a clear connection between the pandemic and the road transportation industry. He noted that the pandemic led to substantial financial losses within the sector, resulting in many drivers losing their livelihoods and leaving conductors unemployed. Moreover, owners of commercial vehicles experienced a loss of confidence in the business.

For the second statement, which presented the respondents' perceptions of the "profitability of transportation and associated businesses before, during, and after the COVID-19 pandemic in Kaduna Metropolis", 45.1% (175 respondents) strongly agreed that transportation and associated businesses were more profitable before the COVID-19 pandemic. Those who agreed made up 33.8% (131 respondents). The respondents who strongly disagreed comprised 8.2% (32 respondents), and those who disagreed accounted

for 12.9% (50 respondents). This indicates that a majority of the respondents believed transportation and associated businesses were more profitable before the pandemic.

To corroborate this viewpoint, an interview with Jacob Mailafiya, a taxi driver in Chukun Local Government, highlighted how the challenge of low patronage during the pandemic period severely impacted even those drivers who risked operating at that time. His perspective underscores the widespread belief among respondents that transportation and associated businesses faced more favourable economic conditions before the pandemic struck Kaduna Metropolis. These are his words:

During the pandemic, the government implemented restrictions on transportation activities to mitigate the spread of the disease. Even the limited operations allowed had to adhere strictly to the guidelines set by the National Centre for Disease Control and Prevention (NCDC), which included distancing measures. This significantly affected taxi drivers and KEKE NAPEP riders, as these measures reduced the number of passengers they could carry, thereby impacting their earnings. Despite attempts to increase fares, the reduced passenger capacity meant that the income generated was insufficient to compensate for the usual revenue from fully loaded vehicles. The entire transportation sector, including workers like myself, faced substantial setbacks during this period. Profits dwindled significantly, making it challenging for us to sustain our livelihoods. Even now, we are in the process of recovering from these losses (interview, Kujama, Chukun, 16/5/2023).

With regards to the third statement in the table (table 1.1), varying perceptions among respondents regarding the impact of the COVID-19 pandemic on transportation costs in Kaduna Metropolis", were gathered. The responses show that 43.8% (170 respondents) strongly agree that the COVID-19 pandemic has led to a significant increase in transportation costs in Kaduna Metropolis. Those who agree make up 30.9% (120 respondents). The respondents who strongly disagree comprise 10.3% (40 respondents), and those who disagree account for 14.9% (58 respondents). This indicates that a majority of respondents believe the pandemic has significantly escalated transportation costs, with the highest levels of strong agreement observed in Kaduna South.

In an interview with John Yusuf, a shop owner who commutes daily from Kaduna South to his shop in the Ribadu Campus of the National Defence Academy (NDA), he highlighted how transportation costs, which rose during the COVID-19 period, have not returned to pre-pandemic levels. His statement is quoted directly as follows:

"Prior to the pandemic, my fare from Kaduna South to my shop here was N300. However, when the pandemic struck, the price rose to N600 due to fewer vehicles on the streets, and those operating had to adhere to social distancing guidelines

set by the NCDC. Tricycles that used to carry three passengers could only take one, necessitating fare hikes. We hoped that once COVID-19 was over, these increases would go away, but unfortunately, the slight decrease we saw was negligible compared to pre-pandemic fares."

To make a summary of the data from the interviews conducted on the increment in the transportation fares within the metropolis, the following illustrates a tabular presentation of the transportation fares before, during, and after COVID-19 in some of the sampled areas of Kaduna Metropolis:

Table 1.2: Transportation Fares, Before, During, and After COVID-19 in Some Areas of Kaduna Metropolis

| From | To | L.G.A | Fares | | | Increment (in Percentage %) |
|-----------------|----------------|------------------|-----------------|-----------------|----------------|-----------------------------|
| | | | Before Covid-19 | During Covid-19 | After Covid-19 | |
| Malali Bus Stop | Unguwan sarki | Kaduna North LGA | ₦50 | ₦100 - ₦150 | ₦150 | 100 - 300% |
| Romi Area | Gonin Gora | Chukun LGA | ₦50 | ₦100 | ₦150 | 200% |
| Kakuri Bus Stop | Station Market | Kaduna South LGA | ₦50 | ₦100 - ₦150 | ₦150 | 200% |
| Kasuwa | Kawo | Kaduna North LGA | ₦100 | ₦150 | ₦200 | 100% |
| Kasuwa | Barnawa | Kaduna South | ₦50 | ₦100 | ₦200 | 300% |
| Kasuwa | Yakowa Way | Kaduna South LGA | ₦100 | ₦150 | ₦200 | 200% |

Source: Fieldwork, 2024

The data gathered from the table above highlights that transportation fares during and after the COVID-19 pandemic in Kaduna Metropolis escalated by 100%, 200%, and 300% compared to the pre-pandemic era in the state.

For the fourth statement, which discussed the perceptions among respondents regarding the impact of COVID-19 bans and restrictions on transportation activities, particularly concerning the loss of livelihood among residents of Kaduna Metropolis", the responses made that 42.8%

(166 respondents) strongly agree that COVID-19 bans and restrictions on transportation activities led to a loss of means of livelihood among residents of Kaduna Metropolis. Additionally, 40.9% (159 respondents) agree. The respondents who strongly disagree comprise 7.5% (29 respondents), and those who disagree account for 8.8% (34 respondents). These findings highlight a significant majority of respondents acknowledging the adverse impact of COVID-19 restrictions on livelihoods.

The responses from the questionnaire findings were corroborated by Habib Sulaiman, Secretary of the KEKE NAPEP Riders Association of Kaduna Metropolis. According to him, as of late 2020, the association registered at least 46 tricycle companies operating 8,622 across the metropolitan areas of the state. During the lockdown, approximately 80% of these vehicles were forced to halt operations, leading to job losses for operators. His statements underscore the severe economic impact felt within the transportation sector during the pandemic:

During the onset of the pandemic, there were a total of 8,622 registered tricycles operating within the Kaduna Metropolis. However, due to the lockdown and other government measures, more than 6,000 tricycles, accounting for approximately 80% of the total, ceased operations. Many operators were compelled to abandon their businesses, with some relocating to rural areas to engage in agricultural activities. Even after the complete relaxation of lockdown measures, an estimated 30% to 35%—approximately 2,587 to 3,018 tricycle riders from the initial register—remained unable to resume their livelihoods in the transportation sector. This information was gathered during an interview conducted in Kaduna North on February 13, 2024."

Additionally, Otache (2020) documented similar trends, noting that the pandemic caused widespread job losses and economic instability, exacerbating the country's unemployment crisis. According to Otache, the unemployment rate, which stood at 23.1% before the pandemic, was projected by the Nigerian National Bureau of Statistics to potentially rise to around 33% by the end of 2020 and could continue to increase in subsequent years without substantial intervention measures. Similarly, Obiezu (2020) echoed these concerns, emphasising the pandemic's impact on unemployment rates and the urgent need for effective interventions to mitigate its economic repercussions.

Also, the fifth statement in the table above shows varying perceptions among the respondents regarding the impact of COVID-19 restrictions on the transportation sector in Kaduna Metropolis, specifically concerning the loss of income and increased poverty levels among transport operators. The responses indicate that 33.5% (130 respondents) strongly agreed that COVID-19 restrictions led to income loss and increased poverty among transport workers, with 45.6% (177 respondents) in agreement. Conversely, 9.3% (36 respondents) strongly disagreed, and 11.6% (45 respondents) disagreed. These findings highlight a significant consensus among respondents

regarding the adverse effects of COVID-19 restrictions on the income and poverty levels of transport workers in the metropolitan areas of Kaduna state.

The survey responses align with the insights gained from an interview with Malam Aliyu Sani, a member of NARTO, who similarly emphasised the detrimental impact of the restrictions on their members. This is extracted from what he said:

The restrictions severely impacted our members, resulting in significant revenue losses. It is important to note that the effects extended beyond just our members; they also affected their families, friends, hawkers, kiosk businesses at parks and bus stops, revenue collectors, taxpayers, and commuters who relied on these transportation services to reach their workplaces. The impact was widespread, and many are still struggling to recover. Several businesses have closed down since then and have yet to regain stability. This underscores why we urged the government to consider the implications of its pandemic measures carefully. Some measures were deemed overly harsh, exacerbated by enforcement agencies. While the pandemic itself has passed, its negative repercussions continue to affect many of us.

To further underscore the impact of the pandemic and the measures implemented to curb its spread, Teachout and Zipfel (2020) highlighted that the containment measures enforced by governments across sub-Saharan Africa, such as restrictions on transportation, resulted in income loss, pushing approximately 9.1% of the region's total population into severe poverty. They noted that out of the 873 million people in the region, 168 million (19.6%) were unable to return to their pre-COVID-19 economic status. Similarly, in their study on the effects of COVID-19 lockdowns on income among transportation workers in Calabar, Innocent, Sunday, and Moses (2022) found that workers' incomes in the sector plummeted significantly during the pandemic. Moreover, many transport workers lost their jobs entirely, as some transportation companies laid off employees and placed others on furlough.

With regards to the six statements in Table 1.1 above, which focuses on the respondents' perceptions on the impact of COVID-19 restrictions on the transportation sector, particularly concerning youth unemployment and increased insecurity in Kaduna Metropolis", 29.1% (114 respondents) strongly agree that COVID-19 restrictions on the transportation sector resulted in significant youth unemployment, thereby increasing insecurity in Kaduna Metropolis. Those who agree make up 42.9% (166 respondents). The respondents who strongly disagree comprise 9.0% (35 respondents), and those who disagree account for 18.8% (73 respondents).

These findings underscore a widespread belief among respondents that the COVID-19 pandemic led to a rise in youth unemployment, particularly within the transport sectors, exacerbating insecurity in the Kaduna Metropolis. This was supported by reports of increased security incidents such as phone snatching, thuggery, and kidnappings for ransom in various areas of the metropolis, often involving unemployed youths adversely affected by the pandemic.

Interviews further corroborate these views. A security officer from the Civil Defense Corps, who preferred anonymity, highlighted that many of the crimes in Kaduna Metropolis during the early post-COVID-19 period were perpetrated by unemployed youths, whose situation worsened due to the pandemic and subsequent government measures. The following is directly quoted from his statements:

"After the COVID-19 bans and restrictions were lifted, Kaduna Metropolis faced significant security challenges, including incidents of phone snatching, thuggery, and more serious crimes like kidnapping for ransom. It is widely known that many perpetrators of these crimes were local residents, some of whom confessed that desperation due to poverty and loss of livelihood during the pandemic drove them into criminal activities. For instance, numerous youths who previously worked as KEKE NAPEP and taxi drivers before the pandemic did not return to their jobs afterwards. Many had their vehicles confiscated by owners who faced uncertainties in the transport business during the pandemic, leading to widespread impoverishment and frustration among youth in the sector. This vulnerability made them easy targets for involvement in various societal vices."

The correlation between COVID-19 restrictions on transportation and the escalation of criminal activities aligns closely with the findings documented by scholars. The restrictions have visibly driven more people into severe poverty, as highlighted in the World Bank's Report (2021). Scholars widely acknowledge that poverty is a significant contributor to insecurity. According to Nwanegbo (2017), poverty and insecurity are interconnected and mutually reinforcing. Therefore, the increase in security challenges during and after the COVID-19 pandemic's restrictions on transportation facilities in Kaduna Metropolis is a recognised consequence. Specifically, Zankam, Abdul, Abdul, Rieni, and Abubakar (2021), in their study on the impacts of COVID-19 in Kaduna South, clearly articulated that the pandemic and subsequent government measures aimed at controlling its spread have led to heightened poverty, loss of livelihoods, and increased security challenges across many areas of Kaduna South.

The Major Findings

This study aimed to assess the socio-economic impact of the COVID-19 pandemic on the road transportation sector in Kaduna Metropolis, revealing several critical findings. First, the study identified significant economic effects on transport operators, both in the short and long term. Respondents strongly agreed that the pandemic severely disrupted the previously profitable transportation business, leading to substantial operational challenges.

Secondly, the analysis highlighted a marked increase in transportation fares within the metropolis. For example, the fare from Malali Bus Stop to Anguwan Sarki rose from ₦50 to as much as ₦200 during and after the pandemic, reflecting fare hikes of 100% to 300%. This increase in fares is indicative of the broader economic strain placed on the sector.

Thirdly, the pandemic caused widespread job and income losses among transportation operators, including riders, drivers, and business owners. The study found that 30% to 35% of tricycle operators lost their livelihoods during the lockdown, exacerbating unemployment and poverty in

the region. Although some individuals have since returned to the sector, others have transitioned to different fields.

Lastly, the study linked the economic downturn in the transportation sector to a rise in insecurity, including phone snatching, thuggery, and kidnapping. The pandemic's adverse effects on transport-related businesses, particularly among youth, may have driven some to criminal activities, contributing to heightened insecurity in Kaduna Metropolis. These findings underscore the pandemic's profound and lasting impact on the region's transportation sector and broader socio-economic conditions.

Conclusion and Recommendations

Covid-19, which has been a global pandemic, has caused a very wide socio-economic crisis across the world, leaving many deaths and loss of businesses, among others. However, this study, which aimed at examining the socio-economic impacts of the COVID-19 pandemic on the road transportation sector in Kaduna Metropolis, has been able to show the impact of the pandemic on various spheres of social and economic life of people within the metropolis. Through the analysis of the questionnaire, interviews and the secondary data sourced in the course of the research, it has been revealed that the pandemic caused significant permanent changes in the transportation sector in Kaduna Metropolis. And at the same time, the pandemic had led to increased transportation fares, loss of jobs; closure of businesses, loss of means of livelihood, and increased insecurity, among other things. It is based on this, therefore, that this research suggests the following recommendations:

- i. The State Government and transport operators should develop a comprehensive pandemic preparedness plan that outlines strategies for mitigating the impact of future pandemics on the transportation sector.
- ii. The transportation sector should invest in digital infrastructure such as mobile apps, online platforms, and other digital technologies to improve efficiency and resilience during times of crisis.
- iii. Transport operators and government agencies should implement robust health protocols to prevent the spread of diseases, including frequent cleaning and disinfection of vehicles, provision of personal protective equipment (PPE) to drivers and passengers, and implementation of contact tracing measures.
- iv. The Kaduna State Government should provide financial support to transport operators during times of crisis to help them maintain their operations and minimise losses.
- v. Transport operators, drivers, and passengers should receive regular training and sensitisation on pandemic preparedness and response measures, including how to recognise symptoms of COVID-19, how to prevent transmission, and what to do in case of an outbreak. This can help to build a culture of preparedness and response in the transportation sector.

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