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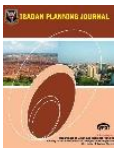

# Public Transport Operation and Compliance with Covid-19 Preventive Measures in the Cities of Southwestern Nigeria

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**Abstract**

*This paper examines public transport operations and compliance with COVID-19 preventive measures in southwestern Nigeria. The concept of public transport governance and the theory of citizens' participation are used as an anchor for the study, while a cross-sectional survey research design was adopted. Primary and secondary data were sourced. A convenient sampling technique was used in selecting 123 respondents across the southwest geopolitical zone in Nigeria, while a Google Survey structured questionnaire was used in gathering data, and a ridge regression for hypothesis testing. The study revealed that despite movement restriction order majority (65%) use public transport to visit family-friends, commercial and worship centres; non-compliance with physical distancing (58%); commuters' level of safety in contacting Corona-virus is low (33%); commuters affirmed the use of soap and water (27%), alcohol-based sanitizer (10%), nose mask (48%), hand gloves (1%); preventive measures were put in place by park managers (22%). Ridge Regression shows that education does not affect compliance ($p>0.05$), while restriction of movements, the presence of law enforcement, and their effectiveness do ($p<0.05$). It was suggested that more awareness be created, commuters and park managers should be educated, engaged, and comply with COVID-19 measures while sanctions and fines are levied on violators.*

**Keywords**
Public transport, COVID-19, Preventive measures, Safety, Southwestern Nigeria

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## 1. Introduction

Public transport operation plays a significant role in the social and economic growth of cities. More so, it is an alternative to reliance on motor vehicles; it reduces traffic congestion, travel times, and harmful pollution, improves air quality, and is beneficial to individuals and communities in both developed and developing cities of the world. Casual observation shows that over 50% of the public transport in developing cities is informal and privately owned, in which over 70% of the commuters rely for movement from one destination to the other. However, public transport operations have been hit hard by the unprecedented advent of the Coronavirus (COVID-19) pandemic, which severely impedes the movement of low- and middle-income earners, farmers, traders, artisans, and essential self-helped service providers who have no alternative mode of transportation.

Coronavirus (COVID-19) is a respiratory infection that mainly spreads by close contact with an infected person and/or surfaces (World Health Organization, 2020). Several preventive measures such as: partial and total lockdown of human activities and services; restriction of interstate transport operation; enforcement of passengers' physical distancing; reduction in the expected number of passengers; regular hand washing with soap or alcohol-based sanitizer; wearing of nose mask or face guide among others have been introduced by the various national government, and sub-national government in controlling the spread of the pandemic since at the moment there is no approved cure for COVID-19 infection. Consequently, during this period, the public transportation system is considered at "high risk," which is attributable to higher passenger density, mostly during peak hours. As a result, the chances of being infected from common surfaces are higher as the screening of passengers becomes next to impossible, especially in cities of developing countries.

According to Rubiano and Darido (2020), social distancing and urban mass transit are two concepts that, quite literally, do not sit well together; however, cities still require public transport services to be operational, especially for essential workers.

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Keeping public transport operational while protecting the health of passengers and operators requires sweeping adjustments in terms of design, implementation, and compliance with a wide range of emergency and preventive measures specific to the COVID-19 pandemic by the National Centre for Disease Control (NCDC) in Nigeria. Against this background, this study examines public transport operations' compliance with Coronavirus (COVID-19) preventive measures in the southwest of Nigeria to control the spread of the infection or any other foreseeable similar occurrences in the States.

## 2. Conceptual and Theoretical Anchor

Concepts of public transport governance and the theory of citizens' participation are used as an anchor for this study. The concept and theory are fitting to this study to examine public transport operations' compliance with COVID-19 preventive measures in the southwestern states of Nigeria. As indicated by the United Nations Development Policy (1996), governance is the activity of political, monetary, and managerial experts in the administration of a province's undertakings at all levels (public transport operation included). It additionally states further that governance contains the mind-boggling instruments, cycles, and establishments through which residents and groups articulate their interests, address their disparities, and exercise their legal rights and obligations. International Institute of Administrative Sciences (1996) believed that governance is a more extensive idea than government by saying that governance alludes to the cycle whereby components in the public arena employ force and authority, influence and authorize strategies, make decisions concerning public life, financial, social, and physical turn of events. As such, governance includes communication between the proper foundations (private and public) and those of civil society. Asian Development Bank (1999) looks at governance from an intensity perspective when they said that governance is the way power is practiced in the administration of a nation's monetary and social assets for advancement, which means that the way those with power use that power in the public transportation sector of the state during COVID-19 lockdown is a paradigm development.

Kanfman (1999) portrayed governance as including government, civil society, and the private segment. In the public transport setting, this suggests that, the obligation of overseeing public transport issues is not restricted to governments yet, besides incorporate a wide assortment of partners including National Union of Road Transport Workers (NURTW), State Union of Road Transport Workers (SURTW), Park Managers (PM), proficient public transport affiliations and different individuals from the civil society. Every one of these actors has a particular task to carry out in compliance with COVID-19 preventive measures in the southwestern states of Nigeria, depending on its wellspring of authenticity and a relative bit of leeway. The government creates helpful political and legitimate situations. Public transport authorities direct and oversee public transport operations. The civil society encourages political and social connections by activating gatherings to take an interest in utilizing public transport as a means of movement for individuals, merchandise, and ventures from one place to another. Although every one of the actors has its shortcomings and qualities, the significant target is to advance and cultivate helpful consistency of public transport operation in the state, particularly during the COVID-19 pandemic lockdown.

Public transport governance can be poor or good. Poor public transport governance has contributed to the increasing partial compliance with the National Centre for Disease Control (NCDC)'s rules and regulations governing public transport operations during the COVID-19 pandemic lockdown in the southwestern states of Nigeria. According to Balogun (2020), increasing urbanization coupled with inadequate physical planning tools and strategies exacerbates the ability of the governments in enforcing strict compliance with the rules and regulations governing public transport operation in urban and rural areas during the COVID-19 pandemic lockdown, hence, the manifestation of disorderliness, which is one of the indicators of poor public transport governance. Adopting from the idea of the United Nations Development Policy (1996) on good urban governance, good public transport governance is a subset of governance. It occurs when the standard of public transport operation empowers and encourages people to take increasingly greater control over their choice of public transport mode in a manner that does not impinge upon the accepted right of other users. Good public transport governance is, among other things, that encourages participatory, transparency, and accountability. It is also effective, equitable, and promotes the rule of law. Extracting from the opinion of Nguyen and Hoai (2013) on urban governance, public transport governance can be explained as coordinating efforts of public transport stakeholders using governments' power and policy to orientate, adjust and monitor public transport operation and development process in urban entities to ensure the protection of the legal rights of citizens, promotion of the rule of law, communal order, social and transport system values, and protect environmental quality to create and sustain a sound and healthy urban quality life, most especially during and after COVID-19 pandemic lockdown in the states. Public transport governance

cannot be inclusive, collective, and successful without the full participation of the citizens in terms of decision-making, level of compliance with COVID-19 preventive measures, and operation.

Andre (2012) defined citizens' participation as a process by which individual, either voluntarily or obligatorily, stands alone or form a group and determine the lives of people or identify a community. In the opinion of Spiegel (1968), citizens' participation is defined as a process whereby programmes are tie to the people. Drawing from the definitions of citizens' participation by Andre (2012) and Spiegel (1968), public transport stakeholders and their members can be saddled with the programme of strict compliance with COVID-19 preventive measures to stop the spread of the virus. Cogan and Sharpe (1986) traced the origin of citizen participation to ancient Greece and Colonial New England in the 1900s. During this period, governmental processes and procedures were programmed to facilitate external participation, which was later institutionalized in citizens' participation in the mid-1960s with President Lyndon Johnson's Great Society programmes. Three rationales for citizens' participation were identified by Cahn and Camper (1968), which include: that individual knowledge of participation promotes dignity and self-sufficiency; human resources and energies of individual citizens within the identified community are fully utilized; and provision of better insights and approaches to issues, which contributes to the soundness of community solutions. Effective adoption of these rationales can be of help in benefiting the citizens' participation in the planning process in terms of public transport operations' compliance with COVID-19 preventive measures and fostering cooperation among public transport operators and commuters in stopping the spread of the virus in the states.

## 3. Materials and Methods

### 3.1 Study area

The study was carried out in the south-western states of Nigeria. Geographically, southwestern Nigeria lies within longitude 20 48' - 6 0 0' E and latitude 50 5' - 9 0 12'N. Southwestern Nigeria shares land borders with the Republic of Benin in the west, Kogi and Edo states in the east, and Kwara state in the north. Its coast in the south lies on the Gulf of Guinea on the Atlantic Ocean (see Figure 1). The largest and most influential ethnic group in southwestern Nigeria is Yoruba. The study location is made up of six states, namely Oyo, Ogun, Osun, Ekiti, Ondo, and Lagos states. In southwestern Nigeria, public transport operations are predominant and are used daily for the movement of people, goods, and services, which justifies the conduct of the study in the selected areas.

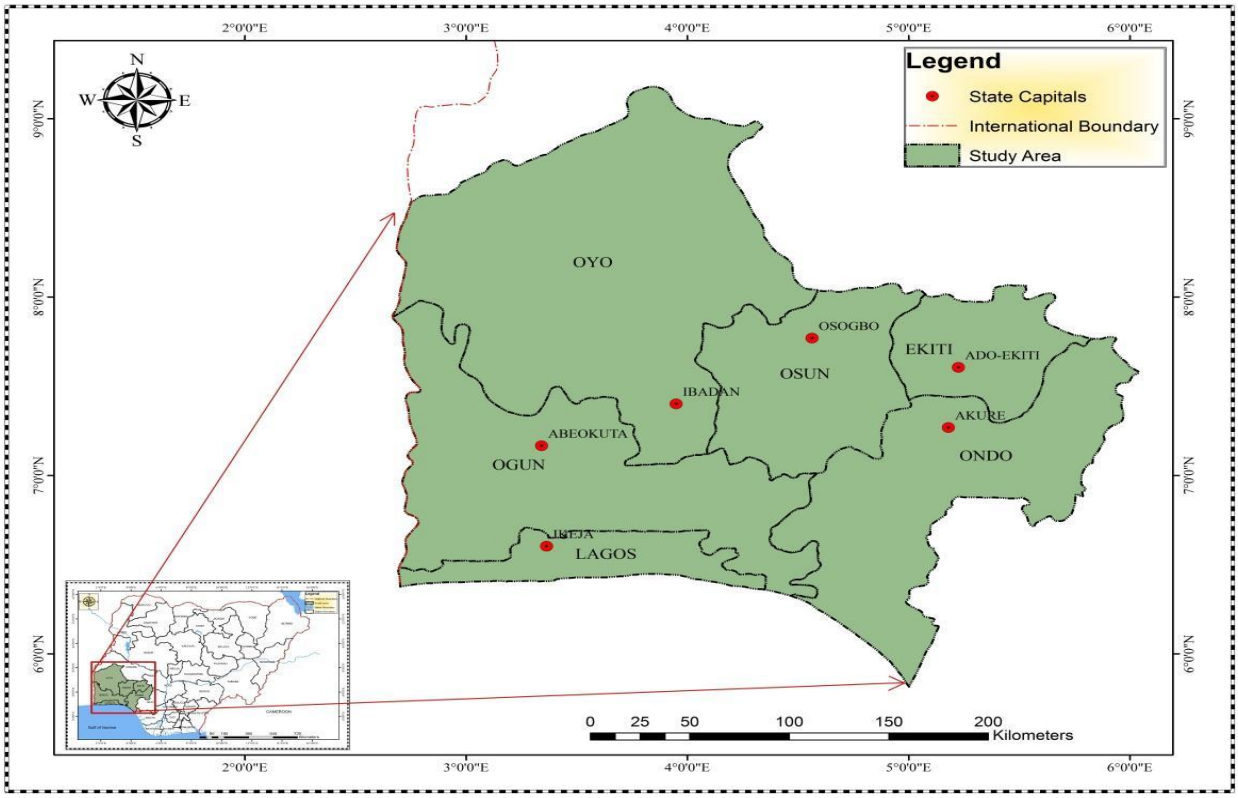


**Figure 1: Southwest States in the Context of Nigeria**
Source: Adapted from Balogun, Adejumo, and Bako (2020)

### 3.2 Methods

The research analysis is aimed at merging the methods and principles with the knowledge as an applied approach to achieve a good result (Hirsjarvi, Remes & Sajavaara, 2013), which allows an agreement between existing theories and findings in terms of critiques and all these formed an inquiry in research analytical methods (Heidi, et. Al., 2017). A secondary data collection method was employed to retrieve information from past research, complemented with a primary data collection to extract responses from respondents related to public transportation. A cross-sectional survey design was adopted, while convenient sampling was used in selecting 123 respondents in the southwestern states [Ekiti (11), Lagos (26), Ogun (13), Ondo (5), Osun (10), and Oyo (58)]. A link containing the research instrument was created through a Google form, distributed through social media platform groups such as WhatsApp, Facebook, Instagram, among others, and pleaded to be reshared to other groups by the first respondent. Closed and open questions were used, which captured the objective of the study. The retrieved responses were cleaned and analysed using both descriptive (percentages, crosstabulation) and higher statistical tools (ridge regression) to measure the relationship of public transport operations' compliance with COVID-19 preventive measures.

## 4. Findings and Discussion

In total, 123 persons responded in the survey across the six states of southwestern Nigeria, from which 47 percent, 21 percent, 11 percent, 9 percent, 8 percent, and 4 percent are from Oyo, Lagos, Ogun, Ekiti, Osun, and Ondo, respectively. Among the participants are 65 percent male and 35 percent female across the region, and a larger proportion, 64 percent, 60 percent, and 80 percent of the participants in Ekiti, Ondo, and Osun are female, respectively. While male participants dominate Lagos (69%), Ogun (62%), and Oyo (79%). There is a significant difference in the proportion of gender participation across the six states of southwestern Nigeria. Across the participants, 46 percent are of ages 19 – 34years, 33 percent, 16 percent, and 4 percent are of ages 35 – 49years, 50 – 64years, and 65 years and above, respectively, with a significant difference in the proportion across the ages and states. Across the highest qualification of the participant, 7 in 10 (70 percent) are postgraduates with the highest proportion (80 percent) from Ogun and lowest proportion (39 percent) from Ondo; 18 percent have post-secondary education from which Ogun has the highest proportion (31 percent) and Ekiti (9 percent); 3 percent have secondary education while 9 percent have other educational qualifications. There is a significant difference in the proportion of educational qualifications across the six states. About 3 in 5 (60 percent) of the participants are married, with the highest (92 percent) in Ogun and lowest (40 percent) in Ondo; 37 percent are singles; 2 percent are widows/widowers, and 1 percent are divorcees. There is a significant difference in the proportion of participants' marital status across the states.

Irrespective of the government restrictions on the movement of people during the pandemic through any means of transportation, people flouted the government directives by still using public transport during the period as majority, 65 percent affirmed the use with the highest proportion, 77 percent in Ogun and the lowest, 30 percent in Osun while 35 percent declined the use of public transport with evidence of a significant difference in the proportion across the states (see Table 1). This supports the assertion of Alejandro and Oded (2020) that the COVID-19 pandemic poses a great challenge for contemporary public transportation worldwide, resulting from an unprecedented decline in demand and revenue. Among the 65 percent that used public transport, 45 percent claimed they sometimes used it, with a significant difference in the proportion across the states, 19 percent rarely used, 20 percent used it often while 16 percent always used it during the pandemic with a significant difference in the proportion of the frequency of usage (see Table 2). From all the participants who know the affairs of the family members, they were asked if any of their family members has used public transport during the COVID-19 pandemic, majority, 58 percent affirmed that their family members used public transport during the period with the highest, 69 percent within Ogun state and the lowest, 30 percent within Osun state (see Table 3). There is a significant difference in the proportion of family members who used public transport during the pandemic period across the state, where Ogun, Oyo, and Lagos have at least 3 in 5 members who used public transport during the COVID-19 pandemic. On the frequency of public transport usage among the family members, as avowed by the participants, 37 percent sometimes used, 28 percent often used, 23 percent always used, and 13 percent rarely used, with a significant difference in the proportion across the six states (see Table 4). Investigating the frequency of public transport usage among the participants and their members, it could be established that, the proportion of participants that sometimes and rarely used public transport is more than that of family members with 8 percent and 6 percent respectively, however, the proportion of family members that often and always use public transport during the COVID-19 pandemic in the southwest are more than the participants by 8 percent and 7 percent respectively with a significant difference in the proportion across the states (see Tables 2 and 4).

**Table 1: Use of public transport during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | Total |
| Use of public transport during the COVID-19 period | No | Count | 5 | 9 | 3 | 3 | 7 | 16 | 43 |
| | | % within State | 45.5% | 34.6% | 23.1% | 60.0% | 70.0% | 27.6% | 35.0% |
| | Yes | Count | 6 | 17 | 10 | 2 | 3 | 42 | 80 |
| | | % within State | 54.5% | 65.4% | 76.9% | 40.0% | 30.0% | 72.4% | 65.0% |
| Total | | Count | 11 | 26 | 13 | 5 | 10 | 58 | 123 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 2: Frequency of public transport usage during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| Frequency of use of public transport during the COVID-19 period | Sometimes | Count | 2 | 6 | 10 | 2 | 1 | 15 | 36 |
| | | % within State | 33.3% | 35.3% | 100.0% | 100.0% | 33.3% | 35.7% | 45.0% |
| | Rarely | Count | 1 | 5 | 0 | 0 | 0 | 9 | 15 |
| | | % within State | 16.7% | 29.4% | 0.0% | 0.0% | 0.0% | 21.4% | 18.8% |
| | Often | Count | 0 | 2 | 0 | 0 | 2 | 12 | 16 |
| | | % within State | 0.0% | 11.8% | 0.0% | 0.0% | 66.7% | 28.6% | 20.0% |
| | Always | Count | 3 | 4 | 0 | 0 | 0 | 6 | 13 |
| | | % within State | 50.0% | 23.5% | 0.0% | 0.0% | 0.0% | 14.3% | 16.3% |
| Total | | Count | 6 | 17 | 10 | 2 | 3 | 42 | 80 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 3: Family that uses public transport during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| The family uses public transport during the COVID-19 period | No | Count | 7 | 10 | 4 | 3 | 7 | 21 | 52 |
| | | % within State | 63.6% | 38.5% | 30.8% | 60.0% | 70.0% | 36.2% | 42.3% |
| | Yes | Count | 4 | 16 | 9 | 2 | 3 | 37 | 71 |
| | | % within State | 36.4% | 61.5% | 69.2% | 40.0% | 30.0% | 63.8% | 57.7% |
| Total | | Count | 11 | 26 | 13 | 5 | 10 | 58 | 123 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 4: Family frequent use of public transport during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| How often does your family member use public transport during this COVID-19 period? | Sometimes | Count | 1 | 9 | 5 | 1 | 1 | 9 | 26 |
| | | % within State | 25.0% | 56.3% | 55.6% | 50.0% | 33.3% | 24.3% | 36.6% |
| | Rarely | Count | 1 | 2 | 0 | 0 | 0 | 6 | 9 |
| | | % within State | 25.0% | 12.5% | 0.0% | 0.0% | 0.0% | 16.2% | 12.7% |
| | Often | Count | 0 | 2 | 0 | 1 | 2 | 15 | 20 |
| | | % within State | 0.0% | 12.5% | 0.0% | 50.0% | 66.7% | 40.5% | 28.2% |
| | Always | Count | 2 | 3 | 4 | 0 | 0 | 7 | 16 |
| | | % within State | 50.0% | 18.8% | 44.4% | 0.0% | 0.0% | 18.9% | 22.5% |
| Total | | Count | 4 | 16 | 9 | 2 | 3 | 37 | 71 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

Based on the claim that not less than 3 in 5 used public transport in southwestern Nigeria, it is pertinent to know the type of public transport used by the participants and the result is presented in Table 5 where about 49 percent claimed they used 4 passengers' car, 19 percent used 10 passengers' bus, 15 percent used 2 passengers' bi/motorcycles, 13 percent used 3 passengers' tricycles and 5 percent used 18 passengers' bus with a significant difference in the proportion across the six states of

southwestern Nigeria. In Ogun and Ondo states, a majority, 60 percent and 50 percent respectively, used 10-passenger buses during the pandemic, than some other states, four-passenger cars are majorly used in Ekiti (83 percent) and Oyo (74 percent). It is only in Lagos that the people used all the types of public transport during the pandemic, which could be linked to the state's peculiar characteristics. Further investigation showed that the public transport users violate the government directives by not complying with the physical distancing measure of containing the spread of COVID-19 as the majority, 3 in 5 (59 percent) acknowledged they do not comply with the sitting arrangement in the type of public transport used during the pandemic in southwestern Nigeria with a significant difference in the proportion across the states (see Table 6). This is an indication that the level of compliance is very low in the southwest of Nigeria.

Further investigation on the new capacity of the preferred choice of public transport usage across the southwestern part of Nigeria was conducted as the result is presented in Table 7 where it is evident that 29 percent, 25 percent and 14 percent each claimed that the new capacity of the preferred is automobiles of 3, 4, 2 and 10 respectively; and, those that chose 1, 5, 6, 7, 12, 14 and 16 as their new capacity of choice of means of transportation are not more than 6 percent each in southwest. However, there is a significant difference in the proportion of the choice of preferred new capacity of public transport across the states of southwestern Nigeria.

**Table 5:Type of public transport used during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| Type of public transport used during the COVID-19 period | 18-passenger' bus | Count | 0 | 3 | 0 | 0 | 1 | 0 | 4 |
| | | % within State | 0.0% | 17.6% | 0.0% | 0.0% | 33.3% | 0.0% | 5.0% |
| | 10-passenger' bus | Count | 0 | 7 | 6 | 1 | 0 | 1 | 15 |
| | | % within State | 0.0% | 41.2% | 60.0% | 50.0% | 0.0% | 2.4% | 18.8% |
| | 4 passengers' car | Count | 5 | 2 | 0 | 0 | 1 | 31 | 39 |
| | | % within State | 83.3% | 11.8% | 0.0% | 0.0% | 33.3% | 73.8% | 48.8% |
| | 3 passengers' tricycle | Count | 0 | 4 | 1 | 0 | 0 | 5 | 10 |
| | | % within State | 0.0% | 23.5% | 10.0% | 0.0% | 0.0% | 11.9% | 12.5% |
| | 2 passengers' bi/motorcycle | Count | 1 | 1 | 3 | 1 | 1 | 5 | 12 |
| | | % within State | 16.7% | 5.9% | 30.0% | 50.0% | 33.3% | 11.9% | 15.0% |
| Total | | Count | 6 | 17 | 10 | 2 | 3 | 42 | 80 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 6:Public transport compliance with physical distancing during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| Complying with the government directives on the sitting arrangement (social distancing) in public transport | No | Count | 4 | 5 | 0 | 1 | 0 | 37 | 47 |
| | | % within State | 66.7% | 29.4% | 0.0% | 50.0% | 0.0% | 88.1% | 58.8% |
| | Yes | Count | 2 | 12 | 10 | 1 | 3 | 5 | 33 |
| | | % within State | 33.3% | 70.6% | 100.0% | 50.0% | 100.0% | 11.9% | 41.3% |
| Total | Count | | 6 | 17 | 10 | 2 | 3 | 42 | 80 |
| | % within State | | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 7:New capacity of preferred choice of public transport during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| New capacity of the preferred choice of public transport during the COVID-19 period | 1 | Count | 0 | 0 | 0 | 1 | 0 | 2 | 3 |
| | | % within State | 0.0% | 0.0% | 0.0% | 50.0% | 0.0% | 4.8% | 3.8% |
| | 2 | Count | 1 | 2 | 4 | 0 | 1 | 3 | 11 |
| | | % within State | 16.7% | 11.8% | 40.0% | 0.0% | 33.3% | 7.1% | 13.8% |
| | 3 | Count | 3 | 4 | 0 | 0 | 0 | 16 | 23 |
| | | % within State | 50.0% | 23.5% | 0.0% | 0.0% | 0.0% | 38.1% | 28.7% |
| | 4 | Count | 0 | 2 | 0 | 0 | 1 | 17 | 20 |
| | | % within State | 0.0% | 11.8% | 0.0% | 0.0% | 33.3% | 40.5% | 25.0% |

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| | 5 | Count | 0 | 1 | 0 | 0 | 0 | 4 | 5 |
| | | % within State | 0.0% | 5.9% | 0.0% | 0.0% | 0.0% | 9.5% | 6.3% |
| | 6 | Count | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| | | % within State | 0.0% | 0.0% | 0.0% | 50.0% | 0.0% | 0.0% | 1.3% |
| | 7 | Count | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| | | % within State | 0.0% | 11.8% | 0.0% | 0.0% | 0.0% | 0.0% | 2.5% |
| | 10 | Count | 2 | 3 | 6 | 0 | 0 | 0 | 11 |
| | | % within State | 33.3% | 17.6% | 60.0% | 0.0% | 0.0% | 0.0% | 13.8% |
| | 12 | Count | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| | | % within State | 0.0% | 5.9% | 0.0% | 0.0% | 0.0% | 0.0% | 1.3% |
| | 14 | Count | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| | | % within State | 0.0% | 5.9% | 0.0% | 0.0% | 0.0% | 0.0% | 1.3% |
| | 16 | Count | 0 | 1 | 0 | 0 | 1 | 0 | 2 |
| | | % within State | 0.0% | 5.9% | 0.0% | 0.0% | 33.3% | 0.0% | 2.5% |
| Total | | Count | 6 | 17 | 10 | 2 | 3 | 42 | 80 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

Movement from one place to another through any means of transportation is for a purpose. For the people to transport from one location to another, it must be linked with a very important reason while in this investigation, the participants were asked the reasons for using public transport during COVID-19 pandemic lockdown in southwestern Nigeria and people stated one or more reasons for such movement which ranges from visiting family and friends, markets, commercial purposes and other reasons. However, the result of the reasons for the use of public transport is presented in Table 8, 35 percent claimed they use public transport to the market to get essentials for themselves and their families during the pandemic lockdown in Nigeria with a significant difference in the proportion across the states where the highest proportion, 70 percent in Ogun state and lowest in Ondo state. Twenty-eight percent used public transport during the pandemic lockdown for commercial and business purposes, with a significant difference in the proportion across the states, which is an indication of some allowance or permit that is given to some sets of people who deal with essentials during the period. Twenty-three percent affirmed they use public transport during the pandemic lockdown for reasons known to them, while 13 percent said they used it to visit family and friends, with a significant difference in the proportion across the six states in southwestern Nigeria.

It is believed that there are preventive measures put in place by several sectors of the economy in Nigeria, which do not exclude the transportation sector. In the sectors, there are stakeholders who include transport operators, park managers, and public transport users. To understand the public transport operation's level of compliance to contain the spread of Coronavirus (COVID-19) in southwest Nigeria, the participants submitted their experiences on how the public transport operators comply with COVID-19 preventive measures put in place by the government through the National Centre for Disease Control (NCDC). The result is presented in Table 9. It is evident that a high proportion, 48 percent, made use of a nose mask, 27 percent used soap and water, 13 percent used no preventive measures, 10 percent used alcohol-based sanitizers, while 1 percent each used hand-gloves and other preventive measures, respectively. There is a significant difference in the proportion of preventive measures put in place by the public transport operators across the six states in southwestern Nigeria. In addition, the evidence established that the use of a nose mask is a major measure in Ekiti (86 percent), Ogun (53 percent), and Ondo (100 percent). This thus showed that the level of compliance with the preventive measures put in place by the public transport operators is high, as at least one or more measures are being used to prevent the spread of the virus, irrespective of the sitting arrangement across the states.

For the park managers, the preventive measures put in place are alcohol-based sanitizers (23 percent), soap and water (22 percent), nose mask (30 percent) while 1 in 4 (25 percent) claimed no preventive measure was put in place to contain the virus by the park managers in the southwest of Nigeria (see Table 10). Further investigation established that there is a significant difference in the proportion of preventive measures put in place by the park managers across the states in southwestern Nigeria. In Ondo state, there is no sign of the use of preventive measures, while there is in the other five states.

**Table 8: Reasons for using public transport during the COVID-19 pandemic lockdown**

| | | State of Residence | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | Total |
| Visit to family and friends | Count | 1 | 3 | 0 | 0 | 1 | 8 | 13 |
| | % within State | 16.7% | 15.0% | 0.0% | 0.0% | 20.0% | 14.3% | 13.1% |
| To market for essentials | Count | 2 | 7 | 7 | 0 | 1 | 18 | 35 |
| | % within State | 33.3% | 35.0% | 70.0% | 0.0% | 20.0% | 32.1% | 35.4% |
| For commercial/business purposes | Count | 3 | 6 | 3 | 2 | 0 | 14 | 28 |
| | % within State | 50.0% | 30.0% | 30.0% | 100.0% | 0.0% | 25.0% | 28.3% |
| For reasons known to me | Count | 0 | 4 | 0 | 0 | 3 | 16 | 23 |
| | % within State | 0.0% | 20.0% | 0.0% | 0.0% | 60.0% | 28.6% | 23.2% |
| Total | Count | 6 | 20 | 10 | 2 | 5 | 56 | 99 |
| | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 9: Preventive measures used by public transport operators during the COVID-19 pandemic lockdown**

| | | State of Residence | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | Total |
| Alcohol | Count | 0 | 5 | 0 | 0 | 0 | 6 | 11 |
| | % within State | 0.0% | 17.9% | 0.0% | 0.0% | 0.0% | 11.3% | 9.7% |
| Soap and Water | Count | 1 | 7 | 9 | 0 | 1 | 13 | 31 |
| | % within State | 14.3% | 25.0% | 47.4% | 0.0% | 25.0% | 24.5% | 27.4% |
| Nose Mask | Count | 6 | 13 | 10 | 2 | 1 | 22 | 54 |
| | % within State | 85.7% | 46.4% | 52.6% | 100.0% | 25.0% | 41.5% | 47.8% |
| Hand glove | Count | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| | % within State | 0.0% | 3.6% | 0.0% | 0.0% | 0.0% | 0.0% | 0.9% |
| Other hygiene | Count | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| | % within State | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 1.9% | 0.9% |
| None hygiene | Count | 0 | 2 | 0 | 0 | 2 | 11 | 15 |
| | % within State | 0.0% | 7.1% | 0.0% | 0.0% | 50.0% | 20.8% | 13.3% |
| Total | Count | 7 | 28 | 19 | 2 | 4 | 53 | 113 |
| | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 10: Preventive measures used by the park managers during the COVID-19 pandemic lockdown**

| | | State of Residence | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | Total |
| Alcohol | Count | 1 | 6 | 9 | 1 | 1 | 10 | 28 |
| | % within State | 14.3% | 22.2% | 32.1% | 33.3% | 25.0% | 18.9% | 23.0% |
| Soap and Water | Count | 1 | 6 | 9 | 1 | 1 | 9 | 27 |
| | % within State | 14.3% | 22.2% | 32.1% | 33.3% | 25.0% | 17.0% | 22.1% |
| Nose Mask | Count | 3 | 9 | 9 | 1 | 0 | 14 | 36 |
| | % within State | 42.9% | 33.3% | 32.1% | 33.3% | 0.0% | 26.4% | 29.5% |
| None | Count | 2 | 6 | 1 | 0 | 2 | 20 | 31 |
| | % within State | 28.6% | 22.2% | 3.6% | 0.0% | 50.0% | 37.7% | 25.4% |
| Total | Count | 7 | 27 | 28 | 3 | 4 | 53 | 122 |
| | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

This research finds that majority, 7 in 10 (72 percent) of the people established that there is a restriction to the movement of people across the southwest with a significant difference in the proportion across the states where the restriction is more complied is Ogun with 85 percent where this could be due to the location of the state having a peripheral to Lagos; Oyo, Osun, Ondo and Benin republic (see Table 11). However, 28 percent claimed there is no restriction in their respective states. It is vivid here that the state government in the southwest, to some level, enforces the restriction of movement of the people to contain the spread of the Coronavirus. In the restriction periods, majority, 60 percent of the states in southwest restrict movement between 7 pm – 6 am, 38 percent restrict movement between 6 am – 10 pm, equal proportion, 1 percent each restrict movement between 7 am – 12 noon and weekends alone (see Table 12) where there is a significant difference in the proportion across the states.

Human life is important when it comes to pandemics arising from the spread of infectious diseases. This is the reason the safety of lives is one of the major factors in containing the spread of COVID-19 in the world. Irrespective of the intense spread of the coronavirus that is threatening human lives all over the world, people from southwestern Nigeria still find the time to commute from one point to another during the pandemic lockdown. Perhaps, the majority considers preventive measures for reducing the spread of the virus as a reason for non-compliance in the seating arrangement of the types of public transport used. Therefore, people were asked about their level of safety using public transport, and the result is presented in Table 13. It is evident that the majority, 34 percent, claimed they are unsafe; 39 percent claimed that they are safe, while 28 percent are fairly safe, with a significant difference in the proportion across the six states. It is thus evident that the majority, 3 in 5 (61 percent) of the people that used public transport during the COVID-19 pandemic lockdown are unsafe which in turn showed that, the level of compliance to the COVID-19 guidelines stated by the government through National Centre for Disease Control (NCDC) across the six states are not duly followed.

**Table 11: Restriction of movement on public transport operations during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| Is there a restriction to the movement of public transport operations in your State? | No | Count | 5 | 8 | 2 | 2 | 3 | 14 | 34 |
| | | % within State | 45.5% | 30.8% | 15.4% | 40.0% | 30.0% | 24.1% | 27.6% |
| | Yes | Count | 6 | 18 | 11 | 3 | 7 | 44 | 89 |
| | | % within State | 54.5% | 69.2% | 84.6% | 60.0% | 70.0% | 75.9% | 72.4% |
| Total | | Count | 11 | 26 | 13 | 5 | 10 | 58 | 123 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 12: Period of restriction by the government during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| Period of restriction | 7 pm - 6 am | Count | 3 | 12 | 1 | 2 | 4 | 31 | 53 |
| | | % within State | 50.0% | 66.7% | 9.1% | 66.7% | 57.1% | 70.5% | 59.6% |
| | 6 am -10 pm | Count | 3 | 6 | 9 | 1 | 2 | 13 | 34 |
| | | % within State | 50.0% | 33.3% | 81.8% | 33.3% | 28.6% | 29.5% | 38.2% |
| | 7 am - 12 noon | Count | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| | | % within State | 0.0% | 0.0% | 0.0% | 0.0% | 14.3% | 0.0% | 1.1% |
| | Weekends only | Count | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| | | % within State | 0.0% | 0.0% | 9.1% | 0.0% | 0.0% | 0.0% | 1.1% |
| | Total | Count | 6 | 18 | 11 | 3 | 7 | 44 | 89 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 13: Level of safety in using public transport during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| Level of safety using public transport during the COVID-19 period | Highly safe | Count | 0 | 3 | 9 | 0 | 0 | 4 | 16 |
| | | % within State | 0.0% | 17.6% | 90.0% | 0.0% | 0.0% | 9.5% | 20.0% |
| | Averagely safe | Count | 1 | 3 | 1 | 0 | 0 | 10 | 15 |
| | | % within State | 16.7% | 17.6% | 10.0% | 0.0% | 0.0% | 23.8% | 18.8% |
| | Fairly safe | Count | 1 | 5 | 0 | 2 | 1 | 13 | 22 |
| | | % within State | 16.7% | 29.4% | 0.0% | 100.0% | 33.3% | 31.0% | 27.5% |
| | Not safe | Count | 4 | 6 | 0 | 0 | 2 | 15 | 27 |
| | | % within State | 66.7% | 35.3% | 0.0% | 0.0% | 66.7% | 35.7% | 33.8% |
| Total | | Count | 6 | 17 | 10 | 2 | 3 | 42 | 80 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

For the restriction to be effective based on the nature of human, the government engaged the law enforcement agents during the COVID-19 pandemic lockdown to ensure compliance and it is evident

from the results that as 4 in 5 (78 percent) claimed there are law enforcement agents that are saddled with COVID-19 preventive measures in their respective states (see Table 14) with a significant difference in the proportion across the states. As a result of the boundary characteristics of Ogun state, the law enforcement agents are fully on the ground to enforce government order, followed by Lagos and Osun. The law enforcement agents include Police, Civil Defence, Soldiers, and others, which are created by each state either as a corporation or an individual. It is evident that the majority, 53 percent of the law enforcement agents are Police, 23 percent are Civil Defence, 17 percent are Soldiers, while 7 percent are other law enforcement agents such as "Amotekun", Neighbourhood Watch, Man 'O War, etc., with a significant difference across the states (see Table 15). Perhaps, as a result of the presence of the full presence of the law enforcement agents, Ogun state has the largest proportion (72 percent) of Police, Ondo and Osun top in the use of Civil Defense (33 percent each), Ondo tops in the use of Soldiers (33 percent) while Ekiti tops in the use of other law enforcement agents to enforce movement restrictions.

Irrespective of the proportion of the law enforcement agents, this investigation revealed that 8 percent are highly effective, 32 percent, averagely effective, 41 percent, fairly effective, and 19 percent claimed they are not effective (see Table 16) with a significant difference in the proportion across the six states. The combination of respondent perception of fairly effective with non-effective makes the majority, 59 percent of the law enforcement agents, ineffective in enforcing restrictions on people's movement either through inter- or intra-states.

**Table 14: Presence of law enforcement agents on the COVID-19 preventive measures during lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| Presence of law enforcement agents saddled with COVID-19 preventive measures | No | Count | 4 | 5 | 0 | 2 | 2 | 14 | 27 |
| | | % within State | 36.4% | 19.2% | 0.0% | 40.0% | 20.0% | 24.1% | 22.0% |
| | Yes | Count | 7 | 21 | 13 | 3 | 8 | 44 | 96 |
| | | % within State | 63.6% | 80.8% | 100.0% | 60.0% | 80.0% | 75.9% | 78.0% |
| Total | | Count | 11 | 26 | 13 | 5 | 10 | 58 | 123 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 15: Types of law enforcement agents on the COVID-19 preventive measures during lockdown**

| | | State of Residence | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | Total |
| The Police | Count | 7 | 21 | 13 | 2 | 8 | 39 | 90 |
| | % within State | 41.2% | 53.8% | 72.2% | 33.3% | 53.3% | 52.7% | 53.3% |
| Civil Defence | Count | 4 | 9 | 3 | 2 | 5 | 15 | 38 |
| | % within State | 23.5% | 23.1% | 16.7% | 33.3% | 33.3% | 20.3% | 22.5% |
| Soldiers | Count | 4 | 6 | 0 | 2 | 2 | 15 | 29 |
| | % within State | 23.5% | 15.4% | 0.0% | 33.3% | 13.3% | 20.3% | 17.2% |
| Other Law Enforcement Agent | Count | 2 | 3 | 2 | 0 | 0 | 5 | 12 |
| | % within State | 11.8% | 7.7% | 11.1% | 0.0% | 0.0% | 6.8% | 7.1% |
| Total | Count | 17 | 39 | 18 | 6 | 15 | 74 | 169 |
| | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 16: Effectiveness of law enforcement agents on COVID-19 preventive measures during lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| Effectiveness of the law enforcement agents in ensuring COVID-19 preventive measures in public transport operation | Averagely effective | Count | 2 | 5 | 10 | 0 | 1 | 13 | 31 |
| | | % within State | 28.6% | 23.8% | 76.9% | 0.0% | 12.5% | 29.5% | 32.3% |
| | Fairly effective | Count | 5 | 8 | 1 | 3 | 4 | 18 | 39 |
| | | % within State | 71.4% | 38.1% | 7.7% | 100.0% | 50.0% | 40.9% | 40.6% |
| | Highly effective | Count | 0 | 4 | 1 | 0 | 2 | 1 | 8 |
| | | % within State | 0.0% | 19.0% | 7.7% | 0.0% | 25.0% | 2.3% | 8.3% |
| | Not effective | Count | 0 | 4 | 1 | 0 | 1 | 12 | 18 |
| | | % within State | 0.0% | 19.0% | 7.7% | 0.0% | 12.5% | 27.3% | 18.8% |
| Total | | Count | 7 | 21 | 13 | 3 | 8 | 44 | 96 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

Presentation of relief packages during the COVID-19 pandemic lockdown is to ensure and minimize the spread of the virus across the country. Different groups that distribute relief materials include the federal government, state government, local government, non-governmental organizations, and individuals. This investigation revealed that the majority, 81 percent, are not aware if relief packages were given to public transport operators (see Table 17), and 1 in 5 (19 percent) claimed they are aware of the relief materials given to public transport operators, with a significant difference in the proportion across the six states. Table 18 presents those that distribute relief materials, and it is obvious that the largest proportion, 37 percent of the relief materials, come from the state government, 24 percent from individuals, 17 percent from non-governmental organizations, 12 percent from the federal government and 10 percent from local government with a significant difference in the proportion across the states. Twenty-five percent each of the relief materials in Lagos and Osun is from the federal government, which might be as a result of the fact that Lagos is the epicentre, and Osun recorded a higher number of the influx of people from the nearest neighbouring country, and Oyo 13 percent. Ondo state tops (100 percent) in the proportion of states that give relief materials, next is Lagos, which accounts for 50 percent, and the least, 25 percent, is from Osun state. The contribution of the non-governmental organization in distributing relief materials could be felt in Ekiti (25 percent) and Oyo (21 percent). Except in Ondo, where individual distributes relief materials to the people during the pandemic. The relief package being extended to the people includes cash (11 percent), food items (40 percent), hand sanitizers (16 percent), nose masks (32 percent), and others are 3 percent with a significant difference in the proportion across the states, except Ogun state (see Table 19). However, Oyo tops (16 percent) in giving cash and other relief packages, Ekiti tops (57 percent) in distributing food items, Osun tops (40 percent) in giving hand sanitizers, and Lagos tops (50 percent) in distributing nose masks.

**Table 17: Relief packages given to public transport operators during the COVID-19 pandemic lockdown**

| | | | State of Residence | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ekiti | Lagos | Ogun | Ondo | Osun | Oyo | |
| Are you aware if relief packages were given to public transport operators? | No | Count | 7 | 23 | 13 | 4 | 7 | 46 | 100 |
| | | % within State | 63.6% | 88.5% | 100.0% | 80.0% | 70.0% | 79.3% | 81.3% |
| | Yes | Count | 4 | 3 | 0 | 1 | 3 | 12 | 23 |
| | | % within State | 36.4% | 11.5% | 0.0% | 20.0% | 30.0% | 20.7% | 18.7% |
| Total | | Count | 11 | 26 | 13 | 5 | 10 | 58 | 123 |
| | | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 18: Sources of relief packages to public transport operators during the COVID-19 pandemic lockdown**

| | | State of Residence | | | | | |
|---|---|---|---|---|---|---|---|
| | | Ekiti | Lagos | Ondo | Osun | Oyo | Total |
| Federal | Count | 0 | 1 | 0 | 1 | 3 | 5 |
| | % within State | 0.0% | 25.0% | 0.0% | 25.0% | 12.5% | 12.2% |
| State | Count | 3 | 2 | 1 | 1 | 8 | 15 |
| | % within State | 37.5% | 50.0% | 100.0% | 25.0% | 33.3% | 36.6% |
| Local Government | Count | 0 | 0 | 0 | 1 | 3 | 4 |
| | % within State | 0.0% | 0.0% | 0.0% | 25.0% | 12.5% | 9.8% |
| NGO | Count | 2 | 0 | 0 | 0 | 5 | 7 |
| | % within State | 25.0% | 0.0% | 0.0% | 0.0% | 20.8% | 17.1% |
| Individual | Count | 3 | 1 | 0 | 1 | 5 | 10 |
| | % within State | 37.5% | 25.0% | 0.0% | 25.0% | 20.8% | 24.4% |
| Total | Count | 8 | 4 | 1 | 4 | 24 | 41 |
| | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

**Table 19: Types of relief packages given to public transport operators during the COVID-19 lockdown**

| | | State of Residence | | | | | |
|---|---|---|---|---|---|---|---|
| | | Ekiti | Lagos | Ondo | Osun | Oyo | Total |
| Cash | Count | 0 | 1 | 0 | 0 | 3 | 4 |
| | % within State | 0.0% | 16.7% | 0.0% | 0.0% | 15.8% | 10.5% |
| Food Items | Count | 4 | 1 | 1 | 1 | 8 | 15 |
| | % within State | 57.1% | 16.7% | 100.0% | 20.0% | 42.1% | 39.5% |
| Sanitizers | Count | 0 | 1 | 0 | 2 | 3 | 6 |
| | % within State | 0.0% | 16.7% | 0.0% | 40.0% | 15.8% | 15.8% |
| Nose Mask | Count | 3 | 3 | 0 | 2 | 4 | 12 |
| | % within State | 42.9% | 50.0% | 0.0% | 40.0% | 21.1% | 31.6% |
| Other relief package | Count | 0 | 0 | 0 | 0 | 1 | 1 |
| | % within State | 0.0% | 0.0% | 0.0% | 0.0% | 5.3% | 2.6% |
| Total | Count | 7 | 6 | 1 | 5 | 19 | 38 |
| | % within State | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Source: Field Survey, 2023

A further step was taken to delve into the public transport commuters' compliance with the government directives on COVID-19 preventive measures as a function of education, restriction, presence, and effectiveness of law enforcement agents saddled by the government as preventive measures during the COVID-19 pandemic lockdown in the southwestern states of Nigeria. Ridge regression was used based on the data characteristics as well as the aim of the investigation. Table 20 presents the model summary, and it indicates that the multiple correlation is 0.5, which is an indication of multicollinearity. 25 percent of the variation in the preventive measures could be explained by the sitting arrangement compliance by the public transport operators in the southwestern states of Nigeria. The coefficient of variation is 21 percent, while the regularization error is 21 percent. Table 21 presents the analysis of variance and it can be established from here that there is a significant relationship in the highest level of education, restriction of movement, presence and effectiveness of law enforcement agents on compliance with sitting arrangement in public transport as p-value is less than 0.05 which led us to reject the null hypothesis and conclude the alternative. Further investigation was conducted to know and understand which of the variables brought about the sitting compliance in the public transport operations. The results of the model coefficients are presented in Table 22, and we could establish that restriction of movement, presence of law enforcement, and effectiveness of law enforcement agents saddled with the responsibility of ensuring COVID-19 preventive measures by public transport operators, as their p-values are less than the 0.05 level of significance. It is vivid that being educated does not have any influence on public transport operations' compliance in the southwestern states of Nigeria.

**Table 20: Model summary of public transport compliance with physical distancing**

| Multiple R | R Square | Adjusted R Square | Regularization "R Square" (1-Error) | Apparent Prediction Error | Expected Prediction Error | | |
|---|---|---|---|---|---|---|---|
| | | | | | Estimate[a] | Std. Error | N |
| 0.496 | 0.246 | 0.207 | 0.209 | 0.791 | 0.849 | 0.089 | 123 |

Penalty 1.000

Dependent Variable: Is the sitting arrangement in the public transport in compliance with the State/Federal directive of physical distancing?

Predictors: What is your highest educational qualification? Is there a restriction on the movement of public transport operations in your State? Are there law enforcement agents saddled with COVID-19 preventive measures in your State? How effective is/are the law enforcement agents in ensuring COVID-19 preventive measures in public transport operations?

a. .632 Bootstrap estimate (50 bootstrap samples).

**Table 21: ANOVA of public transport compliance with specified physical distancing**

| | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 25.732 | 6 | 4.289 | 5.115 | 0.000 |
| Residual | 97.268 | 116 | 0.839 | | |
| Total | 123.000 | 122 | | | |

Dependent Variable: Is the sitting arrangement in the public transport in compliance with the State/Federal directive of physical distancing?

Predictors: What is your highest educational qualification Is there a restriction to the movement of public transport operations in your State? Are there law enforcement agents saddled with COVID-19 preventive measures in your State? How effective is/are the law enforcement agents in ensuring COVID-19 preventive measures in public transport operations?

**Table 22: Model coefficients of public transport compliance with physical distancing**

| | Standardized Coefficients | | df | F | Sig. |
|---|---|---|---|---|---|
| | Beta | Bootstrap (1000) Estimate of Std. Error | | | |
| Highest educational qualification | -0.132 | 0.092 | 2 | 2.054 | 0.133 |
| Restriction of the movement of public transport operations | 0.098 | 0.031 | 1 | 9.941 | 0.002 |
| Presence of law enforcement agents saddled with COVID-19 preventive measures | 0.095 | 0.024 | 1 | 15.217 | 0.000 |
| Effectiveness of the law enforcement agents in ensuring COVID-19 preventive measures | 0.148 | 0.046 | 2 | 10.188 | 0.000 |

Dependent Variable: Is the sitting arrangement in the public transport in compliance with the State/Federal directive of social distancing?

Source: Field Survey, 2023

## 5. Conclusion and Recommendations

Going by the proportion of public transport operators and users, the study concludes that the level of compliance with COVID-19 preventive measures is low, which aids the quick spread of the virus within the southwestern states of Nigeria. However, in determining how public transport operation can comply with COVID-19 preventive measures and any other related fore seen occurrences, the appropriate policy recommendations are as follow: government should create more awareness of the virus through mass media; policy makers and stakeholders should create awareness to the citizens on the implications of non-compliance with pandemic preventive measures, law enforcement agents should be on ground to ensure that the public transport operators comply with the Covid-19 preventive measures; all passengers should wear nose masks without any prejudice; hand sanitizers, soaps and water must be made available for commuters as well as the operators of all the motor parks across the states of the federation; drastic sanctions and fines should be levied on any violator among the public transport operators and passengers; educating and engaging National Union of Road Transport Workers (NURTW) on Covid-19 preventive measures guidelines; enforcement and usage of inferred thermometers to regularly check public transport users' temperatures; physical distancing in sitting arrangement must be complied with; continuous monitoring and distribution of relief materials must be encouraged by the government, individual philanthropists and Non-Government Organizations (NGO).

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