WWJMRD 2021; 7(6): 68-75
www.wwjmrd.com
International Journal
Peer Reviewed Journal
Refereed Journal
Indexed Journal
Impact Factor SJIF 2017: 5.182 2018: 5.51, (ISI) 2020-2021: 1.361
E-ISSN: 2454-6615
DOI: 10.17605/OSF.IO/5C7RP

Sunusi Abdulkarim
Department of Transport & Logistics Management, Nigerian Army University Biu, Borno State, Nigeria.

Zuhra Junaida Husny
Department of Urban & Regional Planning, Universiti Teknologi Malaysia, Johor Bahru, Malaysia.

Nafiu Abubakar Babaji
Department of Physical Infrastructure, Tertiary Education Trust Fund, Abuja, Nigeria.

Aminu Muktar Isa
Department of Geography, Federal University Kashare, Gombe State, Nigeria.

Mubarak Kabiru Musa
Department of Business Administration, Bauchi State University, Bauchi State, Nigeria

Sani Babayaro
Department of Transport & Logistics Management, Nigerian Army University Biu, Nigeria.

Lawrence Solomon
Department of Transport & Logistics Management, Nigerian Army University Biu, Nigeria

Correspondence:
Sunusi Abdulkarim
Department of Transport & Logistics Management, Nigerian Army University Biu, Borno State, Nigeria.

Passengers' Safety Perception on Public Transport Usage During Post-COVID-19 in Federal Capital Territory Abuja, Nigeria

Sunusi Abdulkarim, Zuhra Junaida Husny, Nafiu Abubakar Babaji, Aminu Muktar Isa, Mubarak Kabiru Musa, Sani Babayaro, Lawrence Solomon

Abstract
The COVID-19 pandemic forces the entire world to deal with a myriad of new challenges that affected the entire world. The major goal of this research is to study the passenger's safety perception on public transport usage during the post covid-19 in Federal Capital Territory Abuja, Nigeria. The study was quantitative which employed primary sources. The data were sourced through distribution of google form questionnaires. The data were analyzed using Statistical Package for Social Sciences IBM Version 26. The findings from the analysis revealed that public transport users are satisfied with the covid-19 precautionary measures and level of safety. The study concluded that, given the high risks of contaminating the covid-19 in the public transport, ensuring passengers safety should be prioritized in other to limit the spread of covid-19. The study recommended that relevant authorities such as Nigerian Center for Disease Control (NCDC), National Orientation Agency (NOA), FCT Transport Secretariat, Nigerian Police Force (NPF) should focus on raising the public awareness on the use of facemasks, hand sanitizer, physical distancing and avoiding crowded vehicles as part of the covid-19 precautionary measures when using public transport.

Keywords: Public Transport, COVID-19, Passengers, Perception, Safety

Introduction
The COVID-19 epidemic has presented the entire planet with a slew of new problems. Businesses and other activities all around the world have been negatively impacted, which has a knock-on effect on the economy. Every industry has demand and supply imbalances. COVID-19 has an effect on how people use public transportation. COVID-19 has thrown the world economy into disarray by disrupting the flow of commodities and services, which is the lifeblood of the global economy (Naik, 2020). Due to the ongoing global spread of COVID-19, long-term effective preventative and control strategies for various settings and susceptible groups should be implemented during and after the pandemic. For many people, public transportation is their major mode of mobility, and in other cases, their only mode of mobility (Shen, at el. 2020).

Due to the COVID-19 pandemic, urban travel has decreased all around the world, but not equally for all modes; public transit has been hit the worst, as evidenced by survey-based data (Molloy et al. 2020; Astroza et al. 2020). This was accompanied by a reduction in service supply in some cases and made worse by the perception that public transportation is riskier than private or personal transportation because of the closer contact with other people that is possible, if not unavoidable, in public transportation vehicles and stations (Tirachini & Cats, 2020).

Because of the low cost of public transportation and the low ownership of private cars in many nations, it plays an important role in people movement (Pettersson and Hrelja, 2020; Rao et al., 2019). Taxis, trains, and buses, the three main means of public transportation, play an important role in delivering public transportation services (Wang et al., 2020), and the vast majority of citizens use public transportation on a daily basis. With the growing

worldwide population and, as a result, the increased demand for public transportation, as well as the recent COVID-19 pandemic, the safety of public transportation has become a pressing concern, given the often-fatal effects of public transportation collisions (Wang et al., 2020).

Nigeria recorded its first case of COVID-19 on 27th February 2020, when an Italian citizen who work in Nigeria returned from Milan, Italy though Murtala Muhammad International Airport Lagos and tested positive for the virus. On 29th March 2020, the confirmed cases of COVID-19 is 97 with 1 fatality which make the President of Nigeria to declare total lockdown of Lagos and FCT Abuja which affected the operational activities of public transport in the FCT Abuja (Buhari, 2020). As at present (May, 2021), a total of 170,250,460 people affected with this virus globally, with 3,540,283 deaths, 152,139,457 recovered, and 14,570,720 active cases. In Nigeria, the total COVID-19 confirmed cases are 166,019, 7,476 active cases, discharged cases is 156,476 and 2,067 were declared death. The FCT Abuja remain the second epicentre of the novel virus after Lagos with 19,853 confirmed cases out of which 581 were active cases, 19106 were discharged, and recorded 166 fatalities (NCDC, 2021). Giving this background, the objectives of the research is to study the passenger's safety perception on public transport usage during post covid-19 in Federal Capital Territory Abuja.

Literature Review

A system of transporting groups of passengers, often operated on a timetable or schedule, running on established routes by bus, tram, or train, and where customers are charged a defined amount for such service, is referred to as public transportation. Effective and well-resourced public transportation networks are legible, coordinated, and frequent, and use transfers to service a wide range of trips between cities. They exist for a variety of reasons, including environmental, economic, and social ones (Abdullah et al., 2021). Larger proportions of urban inhabitants use public transportation to get physical access to the commodities, services, and activities they require for their livelihoods and well-being (Fitzgerald, 2012). Public transportation is essential for getting to places like job, school, stores, sporting events, and recreation centers (Kamaruddin et al., 2012). All modes of public transport services in which customers do not utilize their own mode of transportation are considered public transit (Ojo et al., 2014). Taxis, minibuses, buses, and trains are all examples of this. Passengers benefit from public transit because it provides simple access, safe, efficient, and cost-effective transportation (Ismail, et al., 2013). Several academics have claimed that public transportation has favorable effects and is widely used. The possibility for reduced traffic congestion is one of the economic benefits of an effective public transportation system (Anderson, 2014; Weisbrod, Mulley, & Hensher, 2016 as cited in Hynes & Malone, 2020), while proximity to public transportation can have an impact on land usage and land values, with greater housing prices and density around stops and stations (Kay, Noland, & DiPetrillo, 2014; Yu, Pang, & Zhang, 2018 as cited in Hynes & Malone, 2020). Public transportation investment has a favorable direct and indirect induced effect on job creation and retention, business output, GDP, and tax revenue. Improved communal cohesion is one of the social benefits, as public transportation frequently serves peripheral, isolated, and deprived communities, decreasing the impact of social fragmentation and exclusion (Hynes & Malone, 2020).

For passengers' happiness, traveling on public transportation with a high degree of facilities, convenience, and quality is critical. The novel COVID-19 pandemic, which puts public transit stations and vehicle environs at high risk for the COVID-19 contagion (UITP 2020), has curtailed this gratification.

a. People are crammed into a small space. Contagion risk rises as the number of passengers in vehicles and stations rises. Since the COVID-19 pandemic, the discomfort associated with commuting in crowded buses or trains has increased because to the increased danger of contracting a potentially lethal virus for which there is currently no vaccination.
b. There may be insufficient access control to identify unwell passengers or personnel.
c. The presence of various surfaces that easily spread germs, such as seats, railings, doors, and ticket machines.

In several nations around the world, the emergence of the COVID-19 pandemic has resulted in extraordinary restrictions on travel, mobility, and activity participation (Wielechowski et al., 2020). Various strict policies, such as stay-at-home policies, school, public institution, and workplace closures, cancellation of mass events and public gatherings, and public transportation restrictions, have impacted roughly 90% of the world's population, contributing to an unprecedented reduction in mobility (Gössling et al. 2020). Everyone who works in or uses public transportation has safety as a primary priority.

A "steady state" of an organization or place accomplishing what it is expected to accomplish is defined as safety. Public norms and standards, associated architectural and engineering designs, business vision and mission statements, operational strategies, and personnel policies describe "what it is meant to perform." Safety is a normative idea for any organization, place, or function, large or little. It adheres to situation-specific definitions of what is acceptable and expected (Charles, 2010). The sensation of being safe on the road system and the assurance that the user will not be seriously harmed or killed while using it are both referred to as safety. Perception is a passenger's perception of a service after utilizing it and comparing it to what he expected and experienced previously. Passengers' perceptions of public transportation after COVID-19 are a subjective assessment of the service given, based on the user's encounter with the service provider (Ramos et al., 2019). The process of assessing service quality entails determining service criteria or features that have a direct impact on how people perceive public transportation.

These parameters include physical distancing, used of hand sanitizer, avoiding crowded vehicles, crowd management, provision of body temperature screening devices, physical distancing marking, denying entry of symptomatic passengers taken by other passengers and public transport operators as COVIS-19 precautionary measures. In today's world, the success of a public transit system is associated with the ability of the system to attract and retain passengers. Therefore, the quality of the service provided is important, since an increase or decrease in the quality of

service will impact the satisfaction of passengers, thus influencing the usage of the system (Imhimmed Mohamed Irtema et al., 2018).

In Abuja, about 57% of trips are by public transport and shared taxi (Emmanuel John 2020).

The implications of this, with particular regards to our kind of public transport and shared taxi system, are huge. First, the terminals and bus stop for loading and offloading of most transport companies are crowded, while vehicles, especially those of the informal and semi-formal transport, are overloaded with tight seating arrangements. Numerous transit systems have reduced services to increase safety for operators while discouraging nonessential trips to decrease the risk to those who have to use public transportation (Agency, 2020).

Methodology

The study area is Abuja the Federal Capital Territory of Nigeria which was relocated from Lagos due to population growth, land shortage for urban expansion, manipulation of the master plan and congestion of the traffic, in the former capital city, Lagos, the Federal Capital Territory (FCT) Abuja (the current capital city of Nigeria) was proclaimed the capital city of Nigeria in 1976. The government seat was formally moved to FCT Abuja in 1991 (Enoguanbhor et al., 2019).

The FCT Abuja is covered by the regional plan for land use (3.1), while the plan for urban land use was limited to the district of Abuja and split into 4 phases. The four planning stages included respectively the districts 5, 15, 19 and 29. Stage 1 included the central district (planned for Government headquarters and Central Business District) as well as four other districts. And they have a specifically identified target population of 3 million inhabitants. The city was planned to be an effective and desirable community at each point of its development – with Phase 1 built to accommodate 230,000 households across Phases II and III, 585,000 and 640,000 simultaneously, towards Phase IV expected to contain 1. 7 million. It puts its overall population at 3.1 million inhabitants (Enoguanbhor et al., 2019). The Abuja density in 2007 is about 190 / km, with GDP at $5.01 billion and per capita at $3.285 (Abdulkarim, 2020).

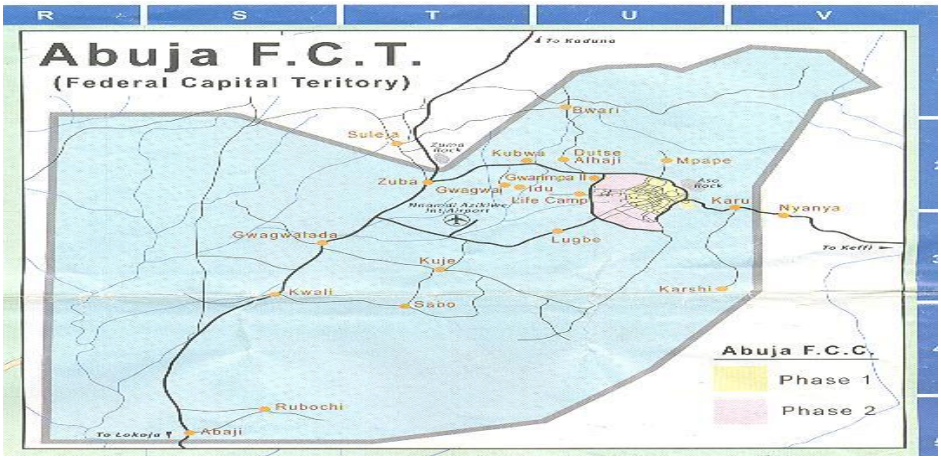

Fig 3.1: Map of Federal Capital Territory Abuja,

The method of the study is quantitative primary data questionnaires to help assessing passenger's safety perception of public transport system during post COVID-19 era in the Federal Capital Territory Abuja, Nigeria. The online survey questionnaires were employed as method of data collection. Five of the six FCT Area Councils were purposively selected, because they accounted for almost 96% of FCT‟s population. These Area Councils were the closest to the city centre where majority of the intra commuters reside. The Area Councils were: Abuja Municipal Area Council (AMAC), Bwari, Gwagwalada, Kwali and Kuje. In each of the five area councils, all the major settlements and terminals which serve as commuters‟ traffic concentration points for smaller settlements around them were covered during questionnaire survey. The data for the study was analyzed using descriptive statistics. Descriptive statistics have been used to analyzed demographic data and individual questionnaire items. IBM Statistical Package for Social Science (SPSS) version 26 were used as aid for the analysis.

Result and Discussion

The questionnaire has designed based on six section: demographic, trip characteristics, community practices, level of satisfaction, level of safety and behavioural responses. The questionnaire has been validated after a pilot survey conducted.

Table 4.1 below presents the respondent's profiles which have been described based on each construct.

Table 1.1: Demographic Profiles.

Respondents Profiles	Option	Frequency	Percentage
Gender	Male	163	90.1%
	Female	18	9.9%
Age	Less than 18yrs	96	53%
	18-25yrs	24	13.3%
	26-35yrs	33	18.2%
	36-45yrs	22	12.2%
	46-55yrs	5	2.8%

	Above 55yrs	1	0.6%
Employment Status	Student	115	63.5%
	Employed	48	26.5%
	Unemployed	16	8.8%
	Pensioner	2	1.1%
Residential Area	Abuja Municipal Area Council	145	80.1%
	Bwari Area Council	18	9.9%
	Gwagwalada Area Council	9	5%
	Kwali Area Council	4	2.2%
	Kuje Area Council	5	2.8%
Monthly Household Income	Below 20,000 Naira	110	60.8%
	20,001-30,000 Naira	16	8.8%
	30,001-40,000 Naira	9	5%
	40,001-50,000 Naira	7	3.9%
	Above 50,000 Naira	39	21.5%

Table 4.1 present the demographics profiles of the respondents. Based on the table, more than half of the respondents are male with 163 respondents representing 90.1%. Female only make of 18 respondents representing 9.9%. In terms of age, most of the respondents are below 18yrs with 96 respondents representing 53%. The second highest group is respondents with the age between 26-35yrs with 33 respondents represent 18.2%. Followed by 18-25yrs with 24 respondents representing 13.3%. The fourth group are between 36-45yrs with 22 respondents representing 12.2%. This shows that majority of the respondents are active population. Also concerning the employment status of the respondents, majority of the respondents are student with 115 respondents representing 63.5%. This shows that majority of the respondents use public transport for the purpose of going to school and coming back home. Then followed by employed with 48 respondents representing 26.5%. This shows that the respondents use the public transport for the purpose of going to the place of work and coming back home. The third group are unemployed with 16 respondents representing 8.8%.

However, from the perspective of the residential area, majority of the respondents lives in Abuja Municipal Area Council with 145 respondents representing 80.1%. Followed by Bwari Area Council with 18 respondents representing 9.9%. The third group are those that are residing in Gwagwalada Area Council with 9 respondents representing 5%. The least group are those that are residing in Kwali Area Council with 4 respondents representing 2.2%. Moreover, from the perspective of the respondent monthly income, majority of the respondents have a monthly income of below N20,000 with 110 respondents representing 60.8%. Followed by respondents that are earning Above N50,000 with 39 respondents representing 21.5% which is moderate income. The third group are those that are between N20,001-N30,000 with 16 respondents representing 8.8%. The least group are those that are earning N40,001-N50,000 with 7 respondents representing 3.9%.

Table 1.2: Trip Characteristics.

Trip Characteristics	Option	Frequency	Percentage
How frequently do you use public transportation a week?	1 day a week	115	63.5%
	2-4 days a week	33	18.2%
	5-6 days a week	18	9.9%
	Everyday	15	8.3%
What is the approximate walking to the nearest transit stop/station from your place of residence?	Less than 400 metres	140	77.3%
	400-799 metres	27	14.9%
	800 metres and above	14	7.7%
How much time do you spend waiting at a transit station/stop?	Less than 2 minutes	102	56.3
	2-4 minutes	28	15.5%
	5-9 minutes	30	16.6%
	10-14 minutes	13	7.2%
	15 minutes and above	8	4.4%
What is the distance of your typical commute using public transport?	Less than 2 kilometres	104	57.5%
	2-4 kilometres	21	11.6%
	5-9 kilometres	28	15.5%
	10-14 kilometres	13	7.2%
	15 kilometres	15	8.3%
What is the in-vehicle travel time you spend when riding public transport?	Less than 15 times	109	60.2%
	15-29 minutes	29	16%
	30-44 minutes	24	13.3%
	45-59 minutes	10	5.5%
	Above 60 minutes	9	5%

Table 1.2 present the descriptive statistics of the trip characteristics of the respondents. From the table, majority of the respondents used public transport once in a week with 115 respondents representing 63.5%. then follow by the those that are using public transport 2-4 days a week with 33 respondents representing 18.2%. The third group

are those that are using public transport between 5-6 days a week with 18 respondents representing 9.9%. Also, concerning approximate walking to the nearest transit from place of residence, majority of the respondents walk for less than 400 metres with 140 respondents representing 77.3%. followed by 400-799 metres with 27 respondents representing 14.9%. The last group are those that walk for 800 metres and above before reaching the bus stop with 14 respondents representing 7.7%. However, when ask about time spend when waiting at the bus stop, majority of the respondents spend less than two minutes with 102 respondents representing 56.3%. Followed by those that spend 5-9 minutes with 30 respondents representing 16.6%. The next group are those that spend 2-4 minutes with 28 respondents representing 15.5%. The fourth group are those that spend 10-14 minutes while waiting at the transit station/stop with 13 respondents representing 5.5%. Moreover, when asked about the distance of their typical commute using public transport, majority of the respondents asserted that the distance is less than 2 kilometres with 104 respondents representing 57.5%. Followed by 5-9 kilometres with 28 respondents representing 15.5%. The third group is 2-4 kilometres with 21 respondents representing 11.6%. The fourth group are those with distance of 15 kilometres which represent 8.3% with 15 respondents. Nevertheless, when asked about the in-vehicle travel time spend when riding public transport, majority of the respondents spend less than 25 minutes with 109 respondents represent 60.2%. Followed by 15-29 minutes with 29 respondents representing 16% The third group are 30-44 minutes with 24 respondents representing 13.3%. The fourth group are those that spend 45-59 minutes in-vehicle travel time while using public transport with 10 respondents representing 5.5%.

Commuting Practice

From the findings in table 1.3, majority of the respondents practicing precautionary measures as shown by the means ranging from 4.32 to 4.66.

Table 1.3: Descriptive Statistics for items Measuring Commuting Practice.

Structure variables	SD	D	N	A	SA	Mean	Std. Dev
I always wear facemasks when riding public transport as a precautionary measure	7 (3.9%)	6 (3.3%)	2 (1.1%)	12 (6.6%)	154 (85.1%)	4.66	0.96
I always use a hand sanitizer when travelling using public transport as a precautionary measure	9 (5.0%)	8 (4.4%)	7 (3.9%)	21 (11.6%)	136 (75.1%)	4.48	1.09
I always practicing physical distancing when travelling on public transport as precautionary measures	12 (6.6%)	13 (7.2%)	11 (6.1%)	14 (7.7%)	131 (72.4%)	4.32	1.26
There is minimum interaction with drivers, staff and other passengers as a precautionary measure	10 (5.5%)	8 (4.4%)	12 (6.6%)	19 (10.5%)	132 (72.9%)	4.41	1.14
I always avoid crowded vehicles when using public transport as a precautionary measure	9 (5.0%)	12 (6.6%)	13 (7.2%)	14 (7.7%)	133 (73.5%)	4.38	1.18

Based on the above table 1.3, majority of the respondents express their willingness towards the precautionary measures when using public transport.

Level of Satisfaction

From the findings in table 1.4, most of the respondents are either satisfied or very satisfied with the precautionary measures taken by other passengers as shown by means ranging from 4.29-4.45.

Table 1.4: Descriptive Statistics for items measuring level of satisfaction with other passengers.

Structure Variables	VUS	US	N	S	VS	Mean	Std. Dev.
Are you satisfied with the wearing of facemasks as COVID-19 precautionary measures taken by other passengers?	7 (3.9%)	14 (7.7%)	8 (4.4%)	14 (7.7%)	138 (76.2%)	4.45	1.13
Are you satisfied with the use of hand sanitizer as a COVID-19 precautionary measures taken by other passengers?	7 (3.9%)	12 (6.6%)	14 (7.7%)	19 (10.5%)	129 (71.3%)	4.39	1.12
Are you satisfied with the physical distancing practice as COVID-19 precautionary measures taken by other passengers?	13 (7.2%)	11 (6.1%)	14 (7.7%)	15 (8.3%)	129 (71.3%)	4.29	1.26
Are you satisfied with the minimum interaction with drivers, staff, and other passengers as COVID-19 precautionary measures?	7 (3.9%)	9 (5.0%)	19 (10.5%)	17 (9.4%)	129 (71.3%)	4.39	1.10
Are you satisfied with the avoiding crowded vehicles practice as COVID-19 precautionary measures?	12 (6.6%)	7 (3.9%)	9 (5.0%)	24 (13.3%)	129 (71.3%)	4.39	1.17

Table 1.4 present the level of satisfaction of respondents about the precautionary measures taken by other passengers. Based on the Table, majority of the respondents very satisfied with the wearing of face masks as COVID-19 precautionary measures taken by other passengers with 138 respondents representing 76.2%. Followed by those that are unsatisfied with 14 respondents representing 7.7%. Also, concerning using hand sanitizer, majority of the respondents are very satisfied with the use of hand sanitizer as COVID-19 precautionary measures taken by other passengers with 129 respondents representing 71.3%. Followed by those that satisfied with 19 respondents representing 10.5%. 14 respondents representing 7.7% are neutral, while 7 respondents representing 3.9% are very unsatisfied with the used of hand sanitizer as COVID-19 precautionary measures taken by other passengers. However, about physical distancing taken by other passengers as COVID-19 precautionary measures, majority of the respondents are very satisfied with 129 respondents representing 71.3%. Followed by 15 respondents representing 8.3% that are satisfied. The third group are those that are neutral with 14 respondents representing

7.7%. 13 respondents representing 7.2% are very unsatisfied with the physical distancing practices taken by other passengers as COVID-19 precautionary measures. Moreover, when asked about minimum interactions with drivers, staff and passengers, as COVID-19 precautionary measures, majority of the respondents are very satisfied with 129 respondents representing 71.3%. 19 respondents representing 10.5% are neutral. 17 respondents representing 9.45 are satisfied with the assertion. 7 respondents representing 3.9% are very unsatisfied with the minimum interaction with drivers, staff, and passengers as COVID-19 precautionary measures. Nevertheless, concerning about the avoiding of crowded vehicles practice as COVID-19 precautionary measures, majority of the respondents are very satisfied with 129 respondents representing 71.3%. 24 respondents representing 13.3% are satisfied with the assertion. 12 respondents representing 6.6% are very unsatisfied with the avoiding of crowded vehicles taken by other passengers as COVID-19 precautionary measures.

From the finding in table 1.5, majority of the respondents are either satisfied or very satisfied with the precautionary measures taken by public transport operators as shown by the means ranging from 4.41 to 4.49.

Table 1.5: Descriptive Statistics for items measuring level of satisfaction with public transport operators.

Structure Variables	VUS	US	N	S	VS	Mean	Std. Dev.
Are you satisfied with physical distancing marking taken by public transport operators as a COVID-19 precautionary measures?	9 (5.0%)	7 (3.9%)	9 (5.0%)	24 (13.3%)	132 (72.9%)	4.45	1.09
Are you satisfied with provision of body temperature screening devices taken by public transport operators as a COVID-19 precautionary measures?	7 (3.9%)	11 (6.1%)	14 (7.7%)	12 (6.6%)	137 (75.7%)	4.44	1.11
Do you feel satisfied with denying entry of symptomatic passengers taken by public transport operators as a COVID-19 precautionary measures?	6 (3.3%)	8 (4.4%)	14 (7.7%)	17 (9.4%)	136 (75.1%)	4.49	1.04
Are you satisfied with the provision of hand sanitizer taken by public transport operators as a COVID-19 precautionary measures?	9 (5.0%)	9 (5.0%)	14 (7.7%)	16 (8.8%)	133 (73.5%)	4.41	1.14
Are you satisfied with the cleaning and disinfection of vehicles taken by public transport operators as COVID-19 precautionary measures?	9 (5.0%)	9 (5.0%)	12 (6.6%)	14 (7.7%)	137 (75.7%)	4.44	1.132

Table 1.5 present the perspective of the respondents about the precautionary measures taken by public transport operators. Based on the table, majority of the respondents are very satisfied with the physical distancing marking taken by public transport operators as COVID-19 precautionary measures with 132 respondents representing 72.9%. 24 respondents representing 13.3% are satisfied with assertion. 9 respondents representing 5.0% are very unsatisfied with the physical distancing marking taken by public transport operators as COVID-19 precautionary measures. Also, when asked about the provision of body temperature screening devices by public transport operators as COVID-19 precautionary measures, 137 respondents representing 75.7% are very satisfied with it. Followed by 14 respondents representing 7.7% which are neutral. The third group are 12 respondents representing 6.6% are satisfied with the assertion. 7 respondents representing 3.9% are very unsatisfied with the provision of body temperature screening devices as COVID-19 precautionary measures. However, when asked about the denying entry of symptomatic passengers taken by public transport operators as COVID-19 precautionary measures, most of the respondents are very satisfied with 136 respondents representing 75.1%. 17 respondents representing 9.4% are satisfied with the assertion. 14 respondents representing 7.7 are neutral. 7 respondents representing 3.9% are very unsatisfied with the denying entry of symptomatic passengers taken by public transport operators as COVID-19 precautionary measures. Moreover, when asked about the provision of hand sanitizer taken by public transport operators as COVID-19 precautionary measures, most of the respondents are very satisfied with 133 respondents representing 73.5%. Followed by 16 respondents representing 8.8% that satisfied with the statement. 14 respondents representing 7.7% are neutral, while 9 respondents representing 5.0% are very unsatisfied with the provision of hand sanitizer taken by public transport operators as COVID-19 precautionary measures. Nevertheless, when asked about cleaning and disinfection of vehicles taken by public transport operators as COVID-19 precautionary measures, most of the respondents are very satisfied with 137 respondents representing 75.7%. Followed by 14 respondents representing 7.7% are satisfied with it. 12 respondents representing 6.6% are neutral while 9 respondents representing 5.0% are very unsatisfied with the provision of hand sanitizer taken by public transport operators as COVID-19 precautionary measures.

Level of Safety

From the findings in table 6.1, majority of the respondents are satisfied with the safety level of the public transport facilities as shown by the means range from 4.06 to 4.34.

Table 6.1: Descriptive statistics for items measuring level of safety of public transport facilities.

Structure Variable	VUS	US	N	S	VS	Mean	Std. Dev.
I feel safe using waiting areas/platforms	8 (4.4%)	11 (6.1%)	21 (11.6%)	16 (8.8%)	125 (69.1%)	4.32	1.16
I feel safe using ticket machines and/or fare collection system	6 (3.3%)	14 (7.7%)	19 (10.5)	16 (8.8%)	126 (69.6%)	4.34	1.14
I feel safe using seats at transit stations/stops and vehicles	6 (3.3%)	17 (9.4%)	22 (12.2%)	13 (7.2%)	123 (68.0%)	4.27	1.19
I feel safe using grab handles in vehicles for standing passengers	18 (9.9%)	16 (8.8%)	19 (10.5%)	12 (6.6%)	116 (64.1%)	4.06	1.42

Table 6.1 present the descriptive statistics for items measuring level of safety of public transport facilities. From the table, majority of the respondents feel very safe using waiting areas/platforms with 125 respondents representing 69.1%. Followed by 21 respondents representing 11.6% that are neutral. 16 respondents representing 8.8% feel safe with the assertion while 8 respondents representing 4.4% feel very unsafe using waiting areas/platforms. Also, about feeling safe when using ticket machines and/or fare collection system, most of the respondents feel very safe with 126 respondents representing 69.6%. Followed by 19 respondents representing 10.5% that are neutral. 16 respondents representing 8.8% feel safe about it. 6 respondents representing 3.3% feel very unsafe to use the ticket machines and/or fare collection system. However, concerning feeling safe using seats at transit stations/stops and vehicles, majority of the respondents feel very safe about it with 123 respondents representing 68.0%. Followed by 22 respondents representing 12.25 that are neutral. 17 respondents representing 9.4% feel unsafe about it. 13 respondents representing 7.2% feel safe to use seats at transit stations/stops and vehicles. Moreover, concerning feeling safe when using grab handles in vehicles for standing passengers, majority of the respondents feel very safe to use it with 116 respondents representing 64.1%. 19 respondents representing 10.5% are neutral. 18 respondents representing 9.9% feel very unsafe while 16 respondents representing 8.8% feel unsafe using grab handles in vehicles for standing passengers.

Conclusion and Recommendation

In the light of the findings from the analysis, the following conclusion were deduced.

- Based on the finding from the analysis, most of the public transport users are satisfied with the COVID-19 precautionary measures (physical distancing, used of hand sanitizer, avoiding crowded vehicles, crowd management, provision of body temperature screening devices, physical distancing marking, denying entry of symptomatic passengers) taken by other passengers and public transport operators.
- Regarding the level of safety, majority of the respondents are satisfied with the level of safety when using public transport facilities (waiting area, ticket machine, seats at transit station/stop, and grab handles for standing passengers).

Recommendation

Relevant authorities (NCDC, NPF) should focus on raising the public awareness of "physical distancing" and "avoiding crowded vehicles" as part of the COVID-19 precautionary measures when using public transport. The public transport operators should improve in the aspect of crowd management, by limiting the capacities of public transport vehicles while at the same time increasing the frequency of services during peak hour, to accommodate the existing travel demand. Stronger surveillance systems should be developed to constantly monitor the commuting practices of public transport users, so that they do not violate the rules of "physical distancing" or "boarding a public transport vehicle that exceeds its prescribed capacity" and penalties can be imposed on offenders based on the evidence. Besides, public transport users should also ensure that they practise physical distancing and avoid crowded public transport vehicles all the time.

Also, grab handles appear to be the most frequently used facilities by public transport users, especially standing passengers, for support on moving vehicles. Therefore, the public transport operators should increase the frequency of grab handles sanitisation, so that public transport users feel safer to use them. The safety and hygiene standards of other public transport facilities (such as seats, ticket machines, fare collection system) and infrastructures (such as waiting areas, stations, platforms, toilets) also should be set higher. Other than frequent sanitisation, the cleaning and disinfection process should be hastened by utilising more efficient and modern methods or technological devices, so that the journeys of public transport users will not be affected by any delays.

Reference

1. Abdulkarim, S. (2020). *The Impact of Road Transport Policy on Economic Development in Federal Capital Teritory Abuja, Nigeria*. Unpublished Master's Thesis Submitted to the Departmant of Urban & Reagional Planning, Universiti Teknologi Malaysia. In Partial Fulfillment for the Award of Master of Science Transportation Planning.
2. Agency, U. S. F. E. M. (2020). *COVID-19 Best Practice Information: Public Transportation Distancing*. 2019–2021. https://www.hsdl.org/?abstract&did=838376.
3. Astroza, S., A. Tirachini, R. Hurtubia, J. A. Carrasco, A. Guevara, M. Munizaga, M. Figueroa,
4. and V. Torres. (2020). "Mobility Changes, Teleworking, and Remote Communication during the COVID-19 Pandemic in Chile." *Transport Findings*, July. https://doi.org/10.32866/001c.13489.
5. Charles, P.J. (2010). Investments Principles and Concepts. John Wiley & Sons, Inc.
6. Emmanuel John (2020). Covid-19 Implications for Public Transport and Shared Taxi in
7. Nigeria. https://www.transformative-mobility.org/news/covid-19-implications-for-public-transport-and-shared-taxi-in-nigeria. Retrieved on 03/04/2021.
8. Enoguanbhor, E. C., Gollnow, F., Nielsen, J. O., Lakes, T., & Walker, B. B. (2019). Land cover change in the Abuja City-Region, Nigeria: Integrating GIS and remotely sensed data to support land use planning. *Sustainability (Switzerland)*, *11*(5). https://doi.org/10.3390/su11051313.
9. Imhimmed Mohamed Irtema, H., Ismail, A., Nazri Borhan, M., M Abdelsalam, H., B.Z Alshetwi, A., Ismael Albrka, S., Milad, A., Mohashhash, B., Y. Y. Alfakhri, A., Muhammad Das, A., A.M. Yahia, H., & Musbah Al Allam, A. (2018). Perceptions Passengers on Service Quality: Public Transport in Kuala Lumpur. *International Journal of Engineering & Technology*, *7*(2.29), 865. https://doi.org/10.14419/ijet.v7i2.29.14273
10. Ismail, R., Hafezi, M. and Nor, R. (2013) 'Passengers Preference and Satisfaction of Public Transport in Malaysia, Part II: A Comparative Analysis of Komuter and LRT Network', *Research Journal of Applied*

Sciences, Engineering and Technology, 6, pp. 1450-1456.
11. Gössling, S. (2020). Risks, resilience, and pathways to sustainable aviation: A COVID-19 perspective. *Journal of Air Transport Management*, *89*(August), 0–3. https://doi.org/10.1016/j.jairtraman.2020.101933
12. Jimoh, A. (2021). Federal Capital Territory Records 994 Accidents in 2020
13. https://www.nta.ng/news/20210201-fct-records-994-accidents-in-2020-frsc/
14. Molloy, J., T. Schatzmann, B. Schoeman, C. Tchervenkov, B. Hintermann, and K. W.
15. Axhausen. 2020. "Observed impacts of COVID-19 on travel behaviour in Switzerland based on a large GPS panel." Working paper. IVT, ETH Zurich.
16. Naik, J. K. (2020) 'Impact of Covid-19 on the usage of public transport', *Times of India*. Available at: https://timesofindia.indiatimes.com/readersblog/creative-thoughts/impact-of-covid-19-on-the-usage-of-public-transport-21917/.
17. NCDC. (2021). Nigerian Centre for Diseases Control Covid-19 Tracking Dashboard.
18. http://covid19.ncdc.gov.ng/. Retrieved on 21/2/2021
19. Ojekunle, J.A., & Oluwole, M.S. (2016). The Application of Geographic Information System
20. (GIS) in the Determination of Public Transport Access Level in the Federal Capital Territory, Abuja- Nigeria. J. Geog. Regional Plann. 8(9):1554-1564.
21. Parsons, H., Mackenzie, S. H., Filep, S., & Brymer, E. (2019). *Good Health and Well-Being*. *February*, 0–10. https://doi.org/10.1007/978-3-319-69627-0
22. Pettersson, F., Hrelja, R., (2020). How to create functioning collaboration in theory and in
23. practice - practical experiences of collaboration when planning public transport systems. International Journal of Sustainable Transportation 14 (1), 1–13. https://doi.org/10.1080/15568318.2018.1517842.
24. Ramos, S., Vicente, P., Passos, A. M., Costa, P., & Reis, E. (2019). Perceptions of the public transport service as a barrier to the adoption of public transport: A qualitative study. *Social Sciences*, *8*(5). https://doi.org/10.3390/socsci8050150
25. Rao, P.G., Kumar, A.A., Shekhar, V., (2019). Multi-pronged approach with synergisation of
26. travel modes and institutional linkages–critical for sustenance of urban transportation. World Scientific News 116, 46–61.
27. Shen, J., Duan, H., Zhang, B., Wang, J., Ji, J., Wang, J., Pan, L., Wang, X., Zhao, K., Ying, B.,
28. Tang, Song., Zhang, J., Liang, C., Sun, H., Lv, Y, Li, Y., Li, T., Li, L., Liu, H., Zhang, L., Wang, L., & Shi., X. Prevention and Control of Covid-19 in Public Transportation: Experience from China. *Journal of Public Transportation.* https://doi.org/10.1016/j.envp01.2020.115291 0269-7491/0 2020.
29. Tirachini, A., & Cats, O. (2020). COVID-19 and public transportation: Current assessment, prospects, and research needs. *Journal of Public Transportation*, *22*(1), 1–34. https://doi.org/10.5038/2375-0901.22.1.1
30. UITP. (2020). "Management of COVID-19: Guidelines for Public Transport Operators."
31. Factsheet, March 2020. International Association of Public Transport (UITP). Accessed December 4, 2020. https://www.uitp.org/ management-covid-19-guidelines-public-transport-operators.
32. Wang, X., Yuen, K. F., Shi, W., & Ma, F. (2020). The determinants of passengers' safety behaviour on public transport. *Journal of Transport and Health*, *18*(June), 100905. https://doi.org/10.1016/j.jth.2020.100905.
33. WHO (Producer), 2018. Global status report on road safety 2018. Retrieved from.
34. https://www.who.int/violence_injury_prevention/road_safety_status/2018/en/
35. Wielechowski, M., Czech, K., & Grzęda, Ł. (2020). Decline in mobility: Public transport in Poland in the time of the COVID-19 pandemic. *Economies*, *8*(4), 1–24. https://doi.org/10.3390/ECONOMIES8040078