SUSTAINABILITY ASSESSMENT OF COVID-19 PROTOCOLS AND INFRASTRUCTURAL DEFICIENT SOCIETIES IN POST-COVID ERA IN AFRICA: A CASE OF NIGERIA

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ABSTRACT
Africa recorded her first confirmed COVID-19 case in Egypt on 14 February, 2020. Thus far, the number of new confirmed cases and deaths increased despite the World Health Organization (WHO) protocols. The study aims at determining if the conceived and adopted protocols against COVID-19 and the post-COVID era in the infrastructural deficient societies of Africa and indeed Nigeria are sustainable. Empirical research design was adopted based on the data randomly drawn from a population who are residents of the Federal Capital Territory (FCT) Abuja, Anambra, Lagos, Kano, Rivers States, States termed most vulnerable to infection in Nigeria. The sampling unit was based on a pilot study, using four hundred randomly selected adult residents who are literate in the sampled States using online structured questionnaire, supplemented by phone call - oral interviews, and other literature sourced from secondary sources. The primary data used for the study were obtained through the administration of questionnaires via online, and were analyzed using both descriptive and inferential statistics. The results were presented in tables, graphs and charts. The Mean Weighted Value statistical analysis was carried out with the Gross Mean Weight Value (cut-off point) at 2.60. The study found that Unplanned, Uncoordinated and Unregulated Transport System, Epileptic Power Supply, Dominant Primary Economic Production, Unplanned Settlement, Corruption, Congested Settlement, Congested Market Places, Small Traders and Artisans sustenance on daily basis, Nigeria's Mono-economy, Import Dependency and Shortage of Food militated against the COVID-19 control protocols and still subsists in post-COVID era. It therefore recommends massive infrastructural development in African countries for sustainability, diversify economic activities in order to create additional values to the socio-economic activities that will lead millions of Africans out of poverty, put in place and enforce sustainable hygiene protocols that will promote and guarantee good health and healthy environment of the societies in Africa.

Keywords: *Infrastructural deficiency, COVID-19 Protocols, Sustainability, Assessment, Post-COVID era, Africa*

1. INTRODUCTION

Corona Virus Disease 2019 (COVID-19) is a contagious respiratory and vascular disease caused by Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2). The world's index case was recorded in Wuhan, Hubei Province, China on 31 December, 2019. It has spread from China to other parts of the world causing a global pandemic (Ippolito et al., 2020). There are two schools of thoughts on the origin of COVID-19. One school of thought has it that, it was transmitted from animals (Bats and Pangolins) to humans (Hui et al., 2020; Kandola, 2020), and the other is that it originated from a failed Biological Laboratory experiment being carried out in Wuhan Institute of Virology (WIV), Wuhan, China (Beyerstein, 2021).There are also two major variants of the "lab leak" theory that is in circulation which are:

"(1) COVID 19 evolved naturally and leaked pure and uncut from the Wuhan Institute of Virology when researchers were archiving wild bat corona viruses for study, and
(2) Scientists at the WIV engineered or altered COVID 19 from a natural virus or viruses, either through benevolent gain-of-function research, in which scientists make a virus more dangerous in order to understand it better, or through bio-weapons research" (Beyerstein, 2021).

The virus was declared a Public Health Emergency of International Concern (PHEIC) on 31 January, 2020 by the World Health Organization (WHO) (WHO, 2020a; Ayadiuno and Ndulue, 2020). Common symptoms of COVID-19 are fever, cough, fatigue, breathing difficulties, and loss of smell and taste. Symptoms begin from one to fourteen days after exposure to the virus. While most people who are exposed to the virus have mild symptoms, others develop acute respiratory distress syndrome (ARDS), (WHO, 2020b).

COVID-19 mainly spreads through the air when infected people are very close to other long enough, primarily through small droplets or aerosols, as the infected persons breathe, cough, sneeze, sing, or speak. It can spread as early as two days before infected persons show symptoms (pre-symptomatic), and from asymptomatic (no symptoms) individuals. People remain infectious for up to ten days in moderate cases, and two weeks in severe cases. The standard diagnosis method is by real-time reverse transcription polymerase chain reaction (rRT-PCR) from a nasopharyngeal swab.

Currently, there are generally acceptable and proven vaccines or specific treatments for COVID-19, even though several of the vaccines have high levels of efficacy, like many other vaccines, COVID-19 vaccines are not 100% effective (WHO, 2020). Acceptable management for infected persons includes the treatment of symptoms, supportive care, isolation, and experimental measures. Preventive measures according to World Health Organization (WHO) are social/physical distancing, quarantining, ventilation of indoor spaces, covering coughs and sneezes, hand washing, and keeping unwashed hands away from the face, use of hand sanitizers and use of face masks or coverings in public gatherings to minimize the risk of transmissions (WHO, 2020). These measures support an old saying "*Prevention is better than cure"*.

This paper assesses the sustainability of the efforts of government through the preventive controls approach adopted by African countries with regard to the WHO measures in an infrastructural deficient society with Nigeria as a case study. Africa recorded her first confirmed covid-19 case in Egypt on 14 February, 2020. About two weeks later, on 27 February, 2020 to be precise, Nigeria recorded her first case. Thus far, the number of confirmed cases and death had been on the increase despite the World Health Organization (WHO) protocols (Ayadiuno and Ndulue, 2020). The measures to control the spread of the disease in Nigeria became punitive and caused much suffering to poor people because of weak institutions that were ineffective in responding to the pandemic, dilapidated social infrastructures and lack of social welfare programs that would have catered for the poor and vulnerable citizens who were affected by the crisis (Ozili, 2020).

Researchers have shown that much of African cities' life is not formally planned and managed; Informal settlements have become a way of life in many cities, with precarious livelihoods and people living in close proximity; Rates of poverty are high and development is uneven. The COVID-19 pandemic exposed the fragility of cities, particularly those in which the informal sector plays a large role and there appears to be a big governance gap in the containment of COVID-19 pandemic in Africa (Nzeadibe, et. al., 2020).

The lockdowns imposed to manage or contain the spread of COVID-19 froze economic activities and caused massive job losses and supply chain disruptions. Evidences show that the vulnerability of millions of informal workers was heightened by government COVID-19 policies and protocols in Africa as well as Nigeria. About 80% of Nigerians are daily earners. And a significant number of people who live in Nigerian urban areas are poor and live in slums that lack basic services (Nzeadibe, et. al., 2020).

`Lock down as a measure taken by Federal Government of Nigeria to prevent the spread of the Corona virus disease was ineffective. On the 29 March 2020 when the lock down was imposed, only Lagos, Ogun States and Abuja (Figure 1a) were affected, with Kano (Figure 1b) included on 27 April 2020, yet the Virus spread to other thirty-four (34) States and Abuja (Figure 1c) prior to the lifting of the lockdown on 5 May 2020, because there was still movement across State borders despite the restriction order on movement (Ayadiuno and Ndulue, 2020; Ridwan, Kazeem and Omokanmi, 2020).

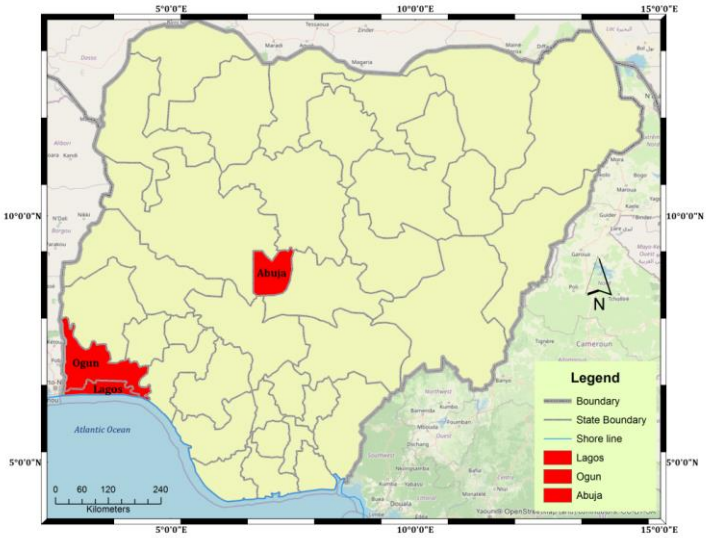


Fig 1a

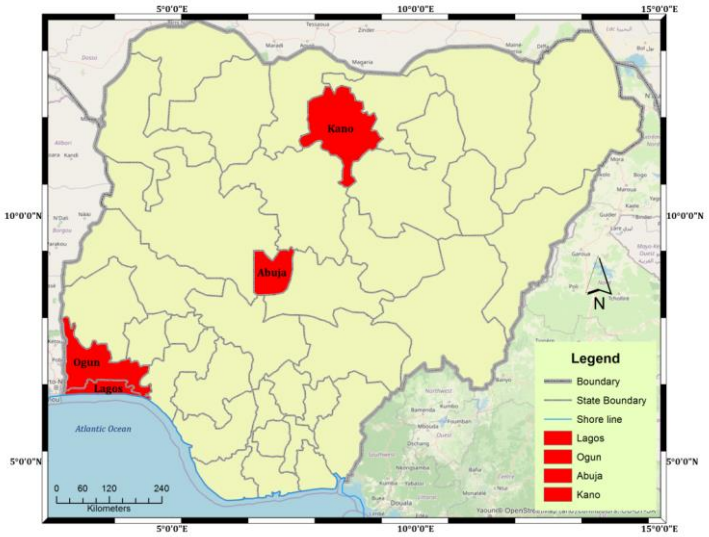


Fig 1b

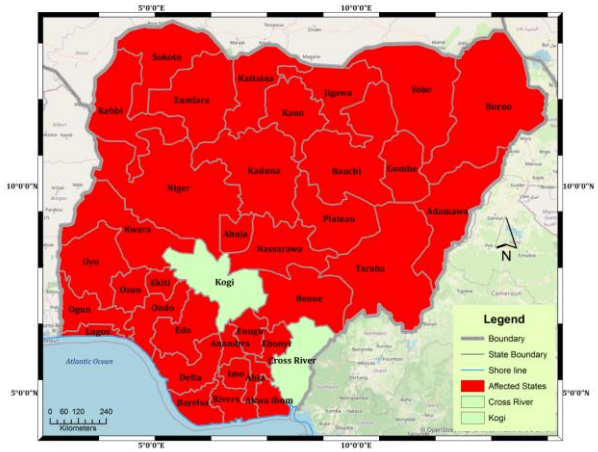


Fig 1c

Figs 1a, 1b and1c: States with COVID-19 Confirmed Cases before and During the Lockdown
Source: ArcGIS Earth, Modified by the Authors, (2021)

Consequently, even though there had been a global decline in the spread of the Virus, and pockets of new variants in some places, there was still an increase on a daily basis of the Virus in Nigeria with an increase of 56 new confirmed cases as at 4 July 2021, bringing the total numbers of confirmed cases as was obtained and presented in table 1.

Table 1: Confirmed cases of the Virus in Nigeria as at 4 July, 2021

S/No	States Affected	Number of Cases (Lab Confirmed)	Number of Cases (on Admission)	Number Discharged	Number of Deaths
1	Lagos	59802	831	58,515	456
2	FCT	19898	180	19,552	166
3	Kaduna	9123	20	9,038	65
4	Plateau	9067	4	9,006	57
5	Rivers	7334	34	7,199	101
6	Oyo	6872	12	6,734	126
7	Edo	4910	0	4,725	185
8	Ogun	4691	7	4,633	51
9	Kano	4005	6	3,889	110
10	Ondo	3483	27	3,391	65
11	Kwara	3144	21	3,068	55
12	Delta	2650	22	2,556	72
13	Osun	2578	6	2,520	52
14	Enugu	2464	0	2,435	29
15	Nasarawa	2384	0	2,345	39
16	Katsina	2110	21	2,055	34
17	Gombe	2098	18	2,036	44
18	Ebonyi	2039	5	2,002	32
19	Akwa Ibom	1931	1	1,912	18
20	Anambra	1909	64	1,826	19
21	Abia	1693	-2	1,673	22
22	Imo	1661	0	1,624	37
23	Bauchi	1549	0	1,532	17
24	Benue	1366	15	1,327	24
25	Borno	1344	1	1,305	38
26	Adamawa	1134	4	1,098	32
27	Taraba	1001	0	977	24
28	Niger	935	5	913	17
29	Bayelsa	906	1	879	26
30	Ekiti	880	6	863	11
31	Sokoto	775	0	747	28
32	Jigawa	534	6	512	16
33	Yobe	488	0	479	9
34	Kebbi	450	42	392	16
35	Cross River	402	0	384	18

S/No	States Affected	Number of Cases (Lab Confirmed)	Number of Cases (on Admission)	Number Discharged	Number of Deaths
36	Zamfara	244	3	233	8
37	Kogi	5	0	3	2
	Total as at July, 2021	**167859**	**1360**	**164378**	**2121**

Source: NCDC, (2021)

Table 2: Confirmed cases of the Virus in Nigeria as at 18 May, 2023

S/No	States Affected	Number of Cases (Lab Confirmed)	Number of Cases (on admission)	Number Discharged	Number of Deaths
1	Lagos	104,286	1,143	102,372	771
2	FCT	29,535	9	29,277	249
3	Rivers	18,112	-3	17,960	155
4	Kaduna	11,675	3	11,583	89
5	Plateau	10,365	4	10,286	75
6	Oyo	10,352	0	10,150	202
7	Edo	7,928	0	7,606	322
8	Delta	5,858	576	5,170	112
9	Ogun	5,810	11	5,717	82
10	Kano	5,429	11	5,291	127
11	Ondo	5,173	315	4,749	109
12	Akwa Ibom	5,010	6	4,960	44
13	Kwara	4,691	452	4,175	64
14	Gombe	3,313	8	3,239	66
15	Osun	3,311	29	3,190	92
16	Enugu	2,952	13	2,910	29
17	Nasarawa	2,853	469	2,345	39
18	Anambra	2,825	46	2,760	19
19	Imo	2,691	3	2,630	58
20	Ekiti	2,466	0	2,438	28
21	Katsina	2,418	0	2,381	37
22	Benue	2,317	88	2,204	25
23	Abia	2,263	0	2,229	34
24	Ebonyi	2,064	28	2,004	32
25	Bauchi	2,028	2	2,002	24
26	Borno	1,629	5	1,580	44
27	Taraba	1,517	32	1,451	34
28	Bayelsa	1,373	2	1,343	28
29	Adamawa	1,312	134	1,140	38
30	Niger	1,183	165	998	20

S/No	States Affected	Number of Cases (Lab Confirmed)	Number of Cases (on admission)	Number Discharged	Number of Deaths
31	Cross River	947	0	922	25
32	Sokoto	822	0	794	28
33	Jigawa	669	2	649	18
34	Yobe	638	4	625	9
35	Kebbi	480	10	454	16
36	Zamfara	375	0	366	9
37	Kogi	5	0	3	2
	Total as at 18 May, 2023	**266,675**	**3,567**	**259,953**	**3,155**

Source: NCDC, (2023)

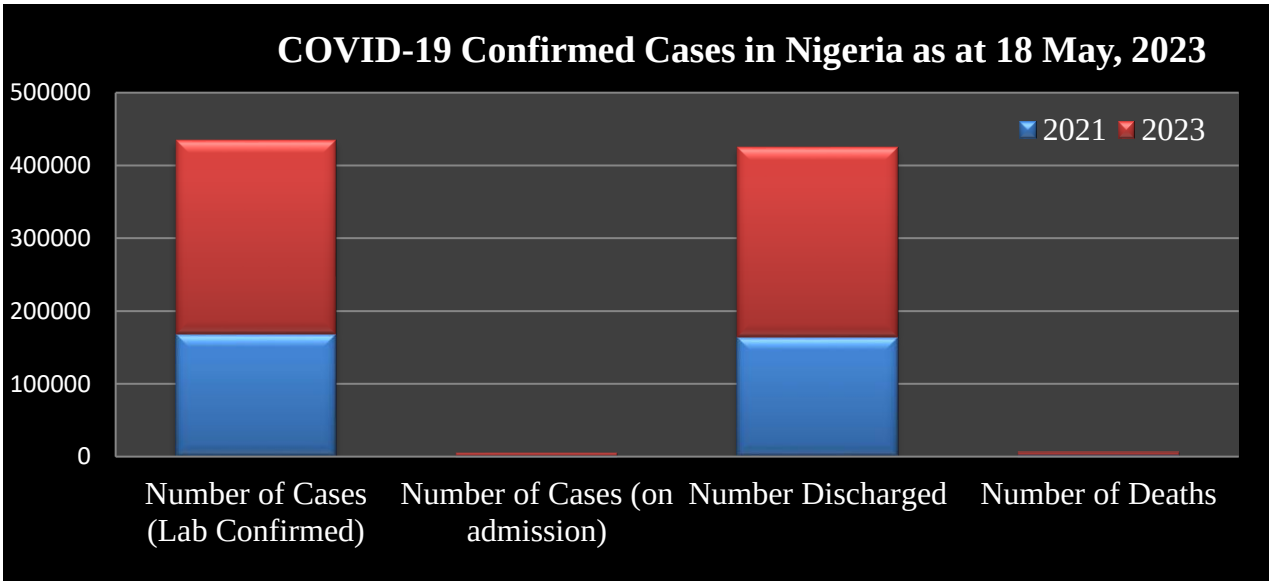


Fig 2: Status of confirmed cases of the Virus in Nigeria as at 18 May, 2023

Hypothesis:

H_0: 'the effort through the conceived and adopted protocols against COVID-19 and post-COVID era in the infrastructural deficient societies of Africa and indeed Nigeria are not sustainable'.

2. MATERIALS AND METHOD

The methodology adopted in this study is geared towards the ultimate realization of the aim of the study. The study made use of primary and secondary data. A pilot study was conducted in the sampled areas through phone calls to friends and acquaintances in the sampled areas in other to explore information about the World Health Organizations (WHO) protocols as was adopted and implemented in Nigeria in particular and Africa at large.

2.1 Data Collection

The study was purposively based on the data drawn from a target population in the States of Anambra, Lagos, Kano, Rivers and the Federal Capital Territory (FCT) Abuja. The States therefore were sampled based on the assumption that they are the most vulnerable in Nigeria. Lagos, Kano, Rivers States and the FCT Abuja are the points of international connection (entry points) with other countries of the world, while Anambra State is sampled as the State with the most travelled citizens (Ayadiuno and Ndulue, 2020). Enugu State was exempted because the International Airport

at Enugu was out of service during the peak period of the pandemic. The same sample framework applied by Akukwe and Ogbodo, (2015) and Ndulue and Ayadiuno, (2021), which is the Yamane (1967) formula for determining sample size was also used. The formula states that the sample size of a population that is more than hundred thousand (100,000) is four hundred (400), hence the Yamane's equation at ±5% level of precision below.

$S=N/1+N\ (e)^2$…….. (1)

Where, S= Sample size

1= Constant

N= Population size of the sampled States

e= Margin of error, usually 5% (0.05)

Four hundred (400) persons were sampled in the four states and the FCT Abuja; a total number of 400 structured questionnaires were distributed through e-mails to the authors' contacts in the respective sampled States and the FCT Abuja for onward distribution to respondents randomly, on the basis of willingness to respond and knowledgeable about the matter being discussed. The study also applied the use of oral interviews and discussions. During the oral interviews and discussions, reasons for the failure of the sustainability of the control protocols approach of the governments in Africa towards the containment of COVID-19 were raised by the respondents and they are: Distribution of Palliatives; Majority are Poor (high level of poverty); Most Employers of Labour are in the Private Sector; Unplanned, Uncoordinated and Unregulated Transport System; Epileptic Power Supply; Ineffective Water Supply System; Primary Economic Production; Unplanned Settlement (Slums); Irregular House Numbering; Inaccurate Data on Residents; Corruption; Congested Living Spaces (Settlement); Congested Market Places; Low Level of Capital for SME's; Small Traders and Artisans sustenance on daily basis; Nigerian Mono economy; Import Dependency; Low Level of Local Production; Shortage of Food; Disobedient to Law and Order. The data collected were analyzed using both descriptive and inferential statistics. The results were shown using tables, graphs and charts. The Mean Weighted Value statistical analysis was carried out on a Likert Scale of 1 – 4 (Likert, 1932; Akukwe, Krhoda and Oluoko-Odingo, 2018). Secondary data such as satellite imageries from ArcGIS Earth were used in map analysis. Published data from the internet and other literatures were extracted and also used. One-way ANOVA test was carried out to confirm the Mean Weighted Value statistical analysis result and also for the test of hypothesis.

3. DATA ANALYSIS AND RESULT DISCUSSION

The data generated from the study were presented and analyzed according to gender and the socio-economic characteristics of respondents.

3.1 Gender of the Respondents

The data collected on the sex of the respondents shows that 52.5% were males and 47.5% females. The study revealed that there are more males willing to respond than females in the discussion about Covid-19 protocols in Africa in general and Nigeria in particular.

3.2 Employment Status of Respondents

The survey of respondents' employment status was presented below. Both show the employment status of respondents. Majority of respondents interviewed are employed. Out of the total number of the 400 respondents that were sampled, 25.5% are Civil/Public Servants, 18.25% are private business owners, 36.5% are Artisans, 13.25% are Student/Apprentice, and 6.5% are either unemployed or retired.

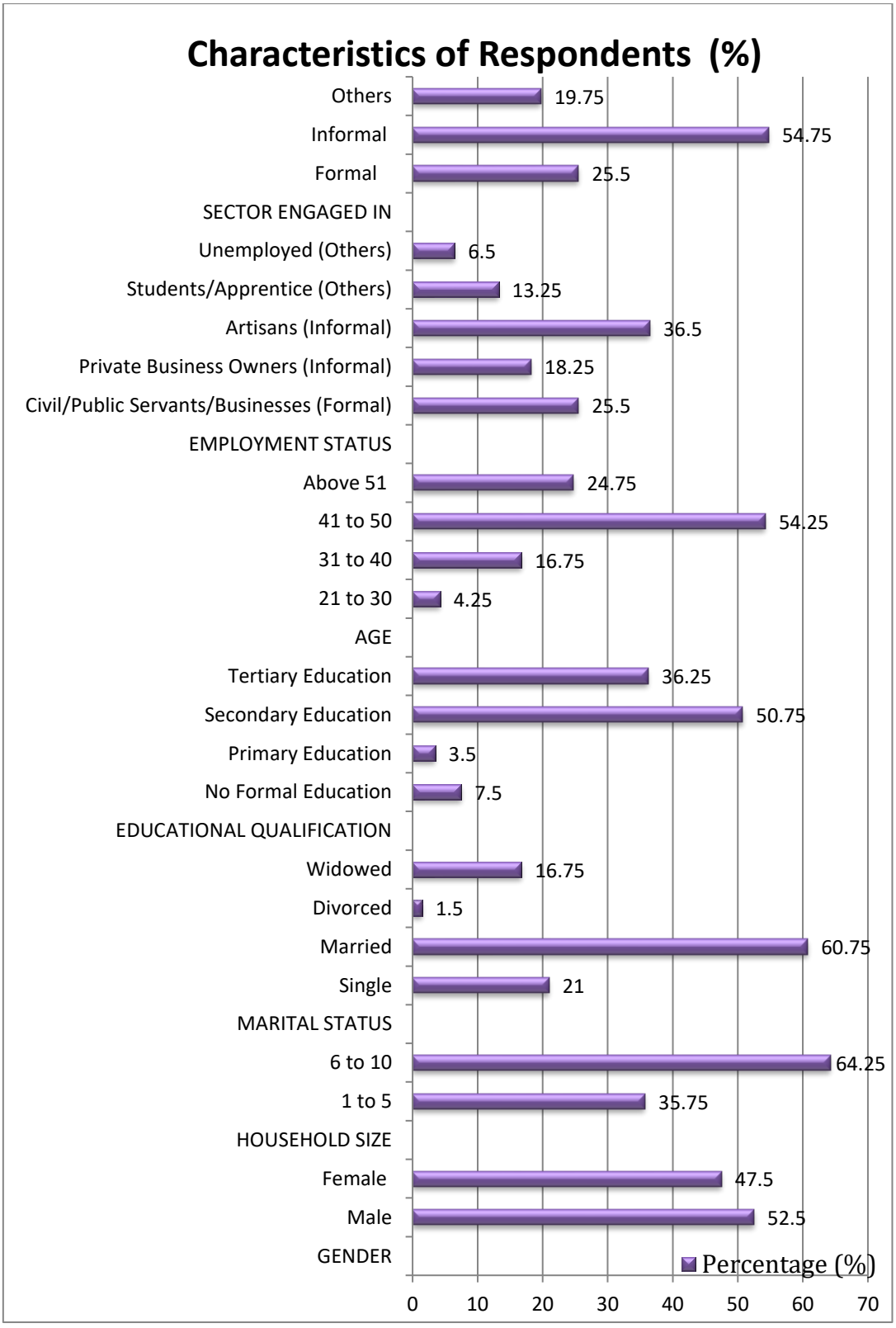
Furthermore, the employment status revealed also the sectors they engaged in. 25.5% are in the formal sectors, 54.75% are in the informal sectors and 19.75% are in others as shown in the table and the chart below.

Table 2: Characteristics of Respondents in the Sampled States

Variable	Frequency	Percentage (%)
GENDER		
Male	210	52.5
Female	190	47.5
HOUSEHOLD SIZE		
1 to 5	143	35.75
6 to 10	257	64.25
MARITAL STATUS		
Single	84	21
Married	243	60.75
Divorced	6	1.5
Widowed	67	16.75
EDUCATIONAL QUALIFICATION		
No Formal Education	30	7.5
Primary Education	14	3.5
Secondary Education	203	50.75
Tertiary Education	153	36.25
AGE		
21 to 30	17	4.25
31 to 40	67	16.75
41 to 50	217	54.25
Above 51	99	24.75
EMPLOYMENT STATUS		
Civil/Public Servants/Businesses (Formal)	102	25.5
Private Business Owners (Informal)	73	18.25
Artisans (Informal)	146	36.5
Students/Apprentice (Others)	53	13.25
Unemployed (Others)	26	6.5
SECTOR ENGAGED IN		
Formal	102	25.5
Informal	219	54.75
Others	79	19.75

Frequency total = 400 (number of respondents) and Percentage total = 100
Source: Authors Fieldwork, (2021)

The above data is represented in the chart below:



Source: Authors' computation using Microsoft Excel, 2007

3.3 The Reasons for the Failure of the sustainability of the control protocols approach for the containment of the spread of COVID-19

Twenty (20) reasons for the failure of the sustainability of the control protocols approach of the governments in Africa towards the containment of COVID-19 were identified from the pilot survey and Oral Interview Discussions (OIDs) carried out in the study areas, and their analysis is shown in

table 3. The respondents were asked to indicate the extent to which the above reasons have contributed to the failure of the sustainability of the control protocols approach of the governments in Africa towards the containment of COVID-19 on a scale of four (4), with 1 showing Strongly Disagree (SD); 2–Disagree (D); 3–Agree (A); and 4– Strongly Agree (SA).

Table 3 indicated the summary of the respondents' responses to the reasons of the failure of the sustainability of the control protocols approach of the governments in Africa towards the containment of COVID-19 as well as the calculated Mean Weight Value (MWV) and the Gross Mean Weight Value (GMWV) on the respondents' notions. As a rule (Likert Scale) the variables with MWV above the cut-off point of GMWV 2.60 were accepted while the variables with MWV below the cut-off point were rejected as shown in table 3.

Table 3: The reasons for the failure of the sustainability of the control protocols approach of the governments in Africa towards the containment of COVID-19

S/N	Reasons	Responses					Likert Conversion						
		Strongly Agreed	Agreed	Disagreed	Strongly Disagree	Total	4	3	2	1	Total	Mean Weight Value	Decision
1	Distribution of Palliatives	36	60	196	108	400	144	180	392	108	824	2.06	**Reject**
2	Majority are Poor (high level of poverty)	84	124	109	83	400	336	372	218	83	1009	2.52	**Reject**
3	Most Employers of Labour are in the Private Sector	80	140	103	77	400	320	420	206	77	1023	2.56	**Reject**
4	Unplanned, Uncoordinated and Unregulated Transport System	153	205	32	9.3	400	612	615	64	9.3	1300.3	3.25	**Accept**
5	Epileptic Power Supply	129	164	76	31	400	516	492	152	31	1191	2.98	**Accept**
6	Ineffective Water Supply System	53	67	163	117	400	212	201	326	117	856	2.14	**Reject**
7	Primary Economic Production	127	217	43	13	400	508	651	86	13	1258	3.15	**Accept**
8	Unplanned Settlement (Slums)	148	116	83	53	400	592	348	166	53	1159	2.90	**Accept**
9	Irregular House Numbering	55	149	121	75	400	220	447	242	75	984	2.46	**Reject**
10	Inaccurate Data on Residents	16	20	180	184	400	64	60	360	184	668	1.67	**Reject**
11	Corruption	77	135	140	48	400	308	405	280	48	1041	2.60	**Accept**
12	Congested Living Spaces (Settlement)	139	196	32	33	400	556	588	64	33	1241	3.10	**Accept**
13	Congested Market Places	107	121	135	39	400	428	363	270	39	1100	2.75	**Accept**
14	Low Level of Capital for SME's	28	35	183	155	400	112	105	366	155	738	1.85	**Reject**
15	Small Traders and Artisans sustenance on daily basis	204	153	31	12	400	816	459	62	12	1349	3.37	**Accept**
16	Nigerian Mono economy	160	145	68	27	400	640	435	136	27	1238	3.10	

												Accept
17	Import Dependency	125	136	79	60	400	500	408	158	60	1126	2.82	**Accept**
18	Low Level of Local Production	24	44	104	228	400	96	132	208	228	664	1.66	**Reject**
19	Shortage of Food	177	129	56	37	400	708	387	112	37	1244	3.11	**Accept**
20	Disobedient to Law and Order	47	68	105	180	400	188	204	210	180	782	1.96	**Reject**
	GMWV											**2.60**	

Source: Author's Field Survey, (2021)

The table above (Table 3) reveals the twenty (20) reasons for the failure of the sustainability of the control protocols approach of the governments in Africa towards the containment of COVID-19 with the responses of respondents using a likert scale of 1 – 4 (Likert, 1932; Akukwe, Krhoda and Oluoko-Odingo, 2018). Thus, reasons such as Unplanned, Uncoordinated and Unregulated Transport System has a MWV of (3.25); Epileptic Power Supply (2.98); Primary Economic Production (3.15); Unplanned Settlement (Slums) (2.90); Corruption (2.60); Congested Living Spaces (Settlement) (3.10); Congested Market Places (2.75); Small Traders and Artisans sustenance on daily basis (3.37); Nigerian Mono economy (3.10); Import Dependency (2.82) and Shortage of Food (3.11) were accepted. Other reasons such as Distribution of Palliatives (2.06); Majority are Poor (high level of poverty) (2.52); Most Employers of Labour are in the Private Sector (2.56); Ineffective Water Supply System (2.14); Irregular House Numbering (2.46); Inaccurate Data on Residents (1.67); Low Level of Capital for SME's (1.85); Low Level of Local Production (1.66) and Disobedient to Law and Order (1.96) were rejected because their MWV is less than 2.60 cut-off point.

3.4 Test of Hypothesis

The test for the hypothesis was carried out using One-way ANOVA in Microsoft Excel 2007, and the result is presented in tables 4 and 5.

Table 4: Summary of the One-way ANOVA for the test of hypothesis

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*	*Decision*
Distribution of Palliatives	4	824	206	16240	**Reject**
Majority are Poor (high level of poverty)	4	1009	252.25	17057.58	**Reject**
Most Employers of Labour are in the Private Sector	4	1023	255.75	21844.25	**Reject**
Unplanned, Uncoordinated and Unregulated Transport System	4	1300.3	325.075	111418.8	**Accept**
Epileptic Power Supply	4	1191	297.75	59254.92	**Accept**
Ineffective Water Supply System	4	856	214	7375.333	**Reject**
Primary Economic Production	4	1258	314.5	97929.67	**Accept**
Unplanned Settlement (Slums)	4	1159	289.75	55370.92	**Accept**
Irregular House Numbering	4	984	246	23444.67	**Reject**
Inaccurate Data on Residents	4	668	167	19865.33	**Reject**
Corruption	4	1041	260.25	22890.92	**Accept**
Congested Living Spaces (Settlement)	4	1241	310.25	91681.58	**Accept**
Congested Market Places	4	1100	275	28958	**Accept**

Low Level of Capital for SME's	4	738	184.5	15129.67	**Reject**
Small Traders and Artisans sustenance on daily basis	4	1349	337.25	141858.3	**Accept**
Nigerian Mono economy	4	1238	309.5	78296.33	**Accept**
Import Dependency	4	1126	281.5	42686.33	**Accept**
Low Level of Local Production	4	664	166	3888	**Reject**
Shortage of Food	4	1244	311	92687.33	**Accept**
Disobedient to Law and Order	4	782	195.5	193	**Reject**

Note: The decision was based on the Gross Mean Weighted Value (GMWV) of 2.60 cut-off point.
Table 4, shows the descriptive statistics – the total sum, average, and variance of the reasons for the failure of the sustainability of the control protocols approach of the governments in Africa towards the containment of COVID-19, which is still subsisting in post-COVID era.

Table 5: Result of the One-way ANOVA for the test of hypothesis

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	225591.5	21	10742.45	0.219063	0.999838	1.74084
Within Groups	2844213	58	49038.15			
Total	3069804	79				

The ANOVA table above (Table 5) is the analysis result meant to test the hypothesis that states that 'the effort of government through the conceived and adopted protocols against COVID-19 and post-COVID era in the infrastructural deficient societies of Africa and indeed Nigeria are not sustainable'. Note, if the significance value is less than .05 (*p*-value < .05), it means that the hypothesis will be rejected, and if on the other hand, the significance value is greater than .05 (*p*-value > .05), it means that the hypothesis will be accepted. The result in table 4 shows that the level of significance (*p*-value) is 0.999838, which is greater than 0.05; since the critical value 0.999838, is greater than 0.05, H_o is accepted and the alternative hypothesis H_1 is rejected. The analysis reveals that the H_o which states that 'the effort through the conceived and adopted protocols against COVID-19 and post-COVID era in the infrastructural deficient societies of Africa and indeed Nigeria are not sustainable' was accepted, while the alternate hypothesis H_1 which states that 'the effort through the conceived and adopted protocols against COVID-19 and post-COVID era in the infrastructural deficient societies of Africa and indeed Nigeria are sustainable' was rejected at 0.05 level of significance.

4. CONCLUSION AND RECOMMENDATIONS

It was discovered that Africa and indeed Nigeria were not ready when COVID-19 arrived in the continent in terms of improving healthcare facilities and other infrastructures even though they were aware of the Virus and the havoc that the pandemic caused in Europe, America, and other countries of the world. They were not ready to also successfully implement the WHO's protocols due to various reasons identified by the respondents during the peak of the pandemic. There has not been any significant indigenous idea, measure or protocol developed in Africa that is sustainable, rather they resorted to what appear to be a copy and paste approach from Europe, America, and other parts of the world not minding the peculiarity of their environment, economy, level of technology, advancement in healthcare facilities, infrastructural development, level of trust in government, corruption among others. Hence the measures that worked in Europe, America, and other parts of the world with a high degree of compliance and success could not record such success in Africa due to the various reasons highlighted. Now that the Virus has receded globally, there has not been any move in Africa and indeed Nigeria to drastically upgrade infrastructures in the case of another such devastating pandemic in the future.

The ones hurriedly put up during the peak of the pandemic have been left dilapidated due to lack of attention (Appendix A). The study therefore recommends that the African government should revisit their policies on healthcare, education and other social infrastructures in order to improve them for sustainability. Increase funding to the most important sectors of every economy like healthcare and educational institutions for research on health, and other educational related issues as is obtained in Europe, America, and other parts of the world. Massive infrastructural developments in Africa and indeed Nigeria together with investments in the real sector that will ensures job availability, diversified economic activities in order to create additional values to the socio-economic activities that will lead millions of Africans out of poverty, put in place and enforce sustainable hygiene protocols that will promote and guarantee good health and healthy environment of the societies in Africa, improved standard of living of Africans and indeed Nigerians.

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APPENDIX A

Abandoned water storage tank put in place during the COVID-19 period

Dilapidating hand washing facility put in place during the COVID-19 period

Abandoned hand washing facility placed in front of a building during the COVID-19 period

Emergence of Street gathering in post-COVID era

Congested market entrance in post-COVID era

Hand washing facilities hurriedly put in place during the peak of COVID-19 but are left abandoned the moment the pandemic declined. Such are the cases of other protocol measures of the WHO – Use of Hand Sanitizer, Regular Washing of hands, Use of Nose Masks, Social Distancing, No Coughing, No Shaking of Hands, among others. The Streets and market places are now as busy as they were before the COVID-19 pandemic, no more thought of the pandemic, yet the world is anticipating another possible outbreak with some countries preparing for it, but Nigeria and indeed Africa is not ready……or not interested.