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RESIDENTIAL NEIGHBORHOODS VULNERABILITY TO COMMUNICABLE DISEASES IN IBADAN, NIGERIA; BUILDING CODE AND COVID-19 PANDEMIC

Alex A. SEWO
digitalfronts@gmail.com
Directorate of Physical Planning and Project Management
University of Ibadan

C.O OLATUBARA
Department of Urban and Regional Planning
Faculty of Environmental Design and Management
University of Ibadan

ABSTRACT

Debauching building code, a regulated policy for development control in Ibadan is on the increase. Building setbacks create airspace between two buildings. Covid-19 virus are spread from person to person. Studies had linked compact housing development to disease spread, and had focused on sanitation law enacted to control development in Lagos province after 1924 bubonic plague, little attention had been paid to development control and airborne diseases in Nigeria. This study focused on building code and residential neighborhood vulnerability to infectious diseases spread (Covid-19 pandemic) in Ibadan. Concept of vulnerability drive the study. 1005 buildings in old quarters, estates and sprawl environments were sampled. Purposive sampling technique was used to collect primary data using structured questionnaire. Descriptive statistics and GIS were employed to analyzed collected samples, to identify neighborhood at risk of infectious diseases spread and hot spots in Ibadan.
Distances between buildings in old quarters' average (1.2m), estates, 6m, sprawling 3m. Covid-19 can airborne up to 2m when a victim sneezes or cough. Neighborhood in Old Quarters showed highest exposure to the spread of infectious diseases (55%), sprawling settlements (35%). Housing Estates (10%). Factors responsible for building code degradation in Ibadan are poverty, ineffective enforcement of development control and weak political will for policy implementation. Residents in old quarters and sprawling areas of the metropolis are more at risk of contracting airborne diseases and spreading covid-19 pandemic in Ibadan. Town Planners should ensure strict adherence to building code using development control tools in Nigeria urban centres.

***Keywords**: Buildings Code, Development Control, Infectious Diseases, Setback, Vulnerability*

INTRODUCTION:

Human have always deployed strategies to combat diseases and other life threatening circumstances (Ojeh and Origho 2012). Establishing new settlements, choice of safe location, compound layout system, town walls for security etc., were designed and or evolved to sustain man and his habitat (Faleye, 2017). 16th century London was walled to ward off raiders (Haensch et al. 2010), Chambery, a French settlement founded on a wide valley, in a crossroad of ancient routes were surrounded by mountain that served as shields (Wikipedia.org). Erekiti Luwoye, an Igbotako suburb community, in Ondo south senatorial district was established as a result of 1918 influenza pandemic and 1924 bubonic pandemic that affected the parent town, Oloto, a settlement on the bank of Ufara River which connects old Okitipupa, Ondo, Akure, Akoko and Ekiti divisions with Lagos province (History of Igbisin-Oloto, undated). These ancients' strategies were modified especially in West-Africa by the incursion of slave merchants' expedition, facilitating new community pattern and socio-demographic characteristics, given room for quick spread of diseases outbreak (Beinger et al 1919, Rodney, 1972, Faleye 2017). Incessant outbreak and spread of Small Pox, Chicken Pox, Influenza Pandemic, Bubonic Plague, Cholera etc in the kingdoms with altered spatial settings were aided by sudden population surge. The surge was made possible by the unprecedented rush to convert open spaces within traditional compound to

tenements housing development to maximize economic values, but, without necessary recourse to housing and layout standard, a condition seeing as perfect bread for communicable diseases (Sewo 2021).

Studies had linked crowded tenements with disease spread (George 1972). One of the earliest findings was Arnott (1840), who identified low, winding, dirty narrow and crowded streets of New York City to fever breakout. The spread of bubonic plague of London 1665- 1666, a disease caused by *Yersinia pestis* bacterium, and transmittable through human flea bite was alluded to crowded tenements (Haensch et al. 2010). Charwin (1965) fingered poor sanitary condition and crowded tenement as breading and spreading factors for typhus, typhoid and relapsing fevers diseases in Glasgow. George (1972) article, 'public health, then and now', reviewed the interrelationship between tenements and typhus in New York City, 1840-1875. Low quality housing in crowded quarters of New York were identified as a key factor for the spread of typhus and typhoid fever. Crowded tenements laced with buildings lacking in sanitary facilities, ventilation, standard space setbacks were identified as the direct implication of modified African settlement pattern, therefore, considered to have presented a perfect condition for breading infectious diseases and spreading in Lagos 1924 bubonic disease outbreak (Faleye 2017). Compact tenement in most cities were identifies as dangerous fronts for Covid-19 spread in Nigeria (Ukpali *et al*, 2021).

Ravaging the world currently is Covid-19 pandemic. The disease breakout was discovered in Wuhan, China, 17th November, 2019, reported by WHO on 30th January 2020 and declared pandemic on 11th March, 2021 (CDC2021). The disease transmit when people breathe in air contaminated by droplet small airborne particles. The risk of breathing in the contaminated air is highest in and around the area where people and or buildings are in close proximity. The virus can transmit over longer and or up to two metres, particularly indoors. The transmission can also occur, rarely, via contaminated surfaces or fluids. People remain contagious up to 20 days and can spread the virus even if they do not develop symptoms (Wikipedia accessed, Oct. 2nd, 2021, CDC 2021). First incident reported in Oyo state was 13th March, 2020 (Usman *et al* 2020). The global cases keep rising and as at 28th September, 2021, two hundred and thirty two million three hundred and thirty four thousand six hundred and ten million (232,334,610) global cases, 204,752 national cases and 8,683 cases in Oyo state while a total of 191 fatality had been recorded in the state (CDC, NCDC 2021). Notwithstanding this rising cases, World Health Organization (WHO) advised world economy to reopen (WHO, 2020). Conditions for reopening world economy were to strictly follow safety protocol and vaccination, though, just a fraction of the population, 1.4 million persons of 211 million Nigerian (0.68 %) had been vaccinated as at August 3, 2021 (Adepoju, 2021). It has been reported that most residents of Nigeria cities dwellers pay little attention to recommended social distancing protocol (Ogunbiyi, 2021). Observing two meters minimum distance, use of nose and or face mask, regular washing of hands with soap in a running water, use of alcohol based-sanitizers, avoiding crowded places, and maintaining high standard cleanliness and hygiene are necessary conditions for breaking the spread of Covid-19 (Ukpali *et al*, 2020).

In Ibadan and other parts of Nigerian cities, the low income residence of high density areas are yet to come to term with the monstrous nature of the pandemic resulting from communicable diseases. Careless, riotous, unfound claiming, and believe without scientific proofs reign in these territories (Ogunbiyi, 2021). This believe and the populace behavior often reverberated in risk of disease spread, waves and in strained/mutated variants exhibited by Covid 19 mutations. While 1918 influenza pandemic lasted about two years, 1924 plague lasted 6 years in Nigeria. Factors considered to have aided breading and spreading of these diseases in Lagos province over a century ago still subsist and replicate itself in places like Ibadan (Beinger et al 1919). Ukpali *et*

al, 2020) noted, 'most Nigerian cities were developed before planning, evolving into modern day social economic and political headquarters which further promotes compact and unregulated housing development, capped with high population densities'. These development contained buildings built close to one another, without appropriate setbacks, height control and coverage thus, defying social distancing in events of outbreak of pandemics such as covid-19 and severe acute respiratory syndrome (SARS). Sewo 2021, identified poor sanitary conditions, high population concentration, crowded and high building density, high level of illiteracy and poor lifeline facilities especially in and around Ibadan pre-colonial quarters. Fear that covid-19 disease spread may mimic 1924 plague pattern drives this study. Existing literature had focused on sanitation laws and slum clearance to combatting diseases outbreak in Nigeria, this paper examined building code and residential neighborhood vulnerability to Covid-19 in Ibadan, Nigeria.

Study Area and Research Justification:

Ibadan, one of the largest city in Nigeria has 11 Local Government Authorities (LGA) generally described along its five urban and six rural divide (Ustman 2020). The interior parts of the urban LGA are characterized by Old quarters. The fringe of the rural LGAs is fast evolving to sprawling development (Sewo 2021). Oyo state planning regulations defined tenement space standard into low, medium and high density residential layout (Lawal and Ogunsesan 2017). Traditionally, residential space in Yoruba kingdoms are layout in compounds settings however this has been disparaged by densification starting from 1972 while the native indigenes struggle with space to have a presence within their father`s compound, a chaotic situation which has transformed to shanty development where room density average 11 persons and distance between buildings, revolve around one metre in Ibadan traditional core (Sewo 2021). Most of the neighborhoods in this axis appears environmentally chaotic and unsightly. In these quarters, foot paths defined street and thoroughfare cut through residential abode (Sewo 2021). Planning as defined by Kebble 1969, is an act and science of ordering the use of space. Ordered spaces are meant to naturally combat and control environmental vices, diseases inclusive. In standard space division where low density neighborhoods measures 1800msq with large expanse of greenery and setback measuring up to 20m as found in Agodi gate and University of Ibadan senior staff quarters. High density residential area measures only 540msq with 2.5 to 3m setback as found in Mokola, Agbowo, Orogun, Oketunu, etc. Old and New Bodija, Alalubosa, Iyangaku etc, are compendium of low, medium and high density residential areas. While strict adherence to space standard have the ability to deter and or curb airborne diseases, old quarter and the urban fringes where building code were not respected are considered infectious disease vulnerable areas. Same condition also make such neighbourhood an Epi-Centre and possible covid 19 hot spot in Ibadan. In a statement of Professor Bolanle Wahab while ruminating over housing and population density`s abilities to aid the spread of infectious diseases in Nigeria, he posted, in Oyo state NITP whatapps Platform, 2020, '*how do we control disease spread in this manner? Shouldn't our environment benefit from disease break out by rethinking our city planning modalities?* Upon these queries, these paper was established.

Conceptual Underpinning and Research Methodology

In responses to above queries, using relevant concept and statistical model, Place Vulnerability Concept and statistical indexes were employed. Place vulnerability explain the degree at which a place is exposed to hazard or stress by aggregating negative environmental factors with external forces capable of distorting a system. (Cutter 2000; Pelling, 2003). The concept had been employed to study environmental risk, hazard, impact of climate induced disaster and resilience using factors such as as high population, high building density, poverty, poor housing condition. These factors had also been found to be key promoter of infectious diseases especially in 19th century`s influenza pandemic and bubonic plague. Vulnerability to infectious diseases in the study area were measured using social vulnerability indicators; constructed with indexes on percentage

of women population, percentage of children population, fraction of old age, rent values (showed level of poverty) (Sewo 2021). In addition, Survey research method was used to collect data for its ability to provide varied access to primary and secondary information, its accuracy and representative. Questionnaire containing, socio economic characteristics, building and household characteristics and vulnerability attributes was employed (*location, age of respondents, housing quality, housing density, knowledge of infectious diseases*), Information on Covid-19, and way out of the pandemic. Using multistage sampling techniques diseases were classified into infectious and noninfectious. Infectious were also classified into water borne and airborne. Neighborhood with poor residential qualities and high occupancy ratio were identified while a total of 51 neighborhoods were randomly selected from INEC registration ward delineation. Socio vulnerability indicators were constructed on the selected neighborhoods to explain population pattern, Housing Density, and rent values. Of 11 LGAs in Ibadan, 7 (58%) were selected to map infectious diseases hotspot vulnerable neighborhoods to Covid-19 pandemic in Ibadan, Oyo state. The analysis was run using descriptive statistics and Epi-data 2.1, a GIS software for spatial data entry by combining demographic indicators with socio vulnerability indicators.

DISCUSSION AND FINDINGS

1. **Demographic and Infectious Diseases vulnerability**:

Population Density: Of 51 neighborhoods evaluated, 34 housing units in old quarters (64.5%, (Appendix 1), had over 10 persons living in a single housing unit, 3 in post-colonial neighborhoods and 14 in neighborhoods at the fringe. The neighborhoods with the highest person per housing unit are Idi-Arere and Bode (14 persons per housing units). This has an implication for disease spread in Ibadan and shows propensity of these neighbourhoods spreading diseases in an unprecedented manners in the city. The economies of the city is run mostly by the grassroots. The grassroots persons are found majorly as the traders in the market places, street hawkers, corner shops, local restaurants artisan, commercial drivers and janitors in government and private establishment. A high density neighbourhood with 12 person average per household would require little time to spread communicable disease around their neighbourhood and to the other parts of the city. Agugu in the old quarter is the most vulnerable neighbourhood due to population density in Ibadan, thus, a hot spot for communicable diseases in Ibadan (Appendix 1).

2. Building Densification: Similar to population concentration is building densification. Setback to buildings are not in existence, traditional core is defined by foot paths and compact buildings layout. Airspaces between buildings in High Density neighbourhood`s minimum standard ranges between (5 to 6) metres. Contrary to this standard is the findings in the old quarters whereas setbacks are mostly (1 to 1.2) meteres, this, perhaps, defined the strain in identifying boundaries between two buildings. (Table 2a and 2b). The core is crowded both in population and housing density (Traditional Quarters 65.5%, High Density Area, 35.5%). Covid-19 virus airborne up to 2 meters and more in an enclosed environment. A neighbour whose window is opposite a covid-19 affected persons, stand a higher risk of contracting the disease. This scenario of contracting disease unwittingly from neighbours is likeable to a situation referred to as *orofoganna* in Yoruba parlance. The act of a person who intrudes into tet-a-tet would rudely be referred to as *orofoganna*. By literal interpretation, orofoganna would mean a conversation slipping over the wall. Adapting this lexis, a system through which a person contracted a disease in the comfort of his home from the next door neighbour would be referred to as orofoganna mechanism. Orofoganna mechanism would be one of the implications of spreading contagious diseases in the compacted tenement and high density neighbourhoods in Ibadan, Nigeria. Evaluating place vulnerability based on housing unit density found old quarters highly vulnerable and the fringe mildly vulnerable. Specifically, social vulnerability index constructed in this regards also pin Agugu, a neighbourhood in old quarters as the hub of communicable disease for its extremely

high compacted building (highest number of building per hectare) in Ibadan neighbourhood (table 1).

Table 1: Poverty Measurement

Building Density	Frequency	Percentage
High Density Area	357	35.5
Traditional Core Area	648	64.5
Total	1005	100.0

Source; Sewo, 2021

Table 2a: Sampled Communities Buildings Setbacks

Observed Setback	**Right Side**		**Left Side**		**Rear**	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
(0-1)m	89	28.8	288	28.7	377	37.5
(1.1-2)m	333	33.1	337	33.5	95	9.5
(2.1-3)m	312	31.0	311	30.9	183	18.2
(3.1-4)m	27	2.7	28	2.8	104	10.3
(4.1-5)m	12	1.2	11	1.1	75	7.5
(5.1-6)m	14	1.4	14	1.4	141	14.0
Above 6.1m	18	1.8	16	1.6	30	3.0
Total	1005	100.0	1005	100.0	1005	100.0
Table 2b: Adjacent Building Proximity (Approach)						
1-2)m	337	33.5				
2.1-4)m	124	12.3				
4.1-6)m	29	2.9				
6.1-8)m	23	2.3				
8.1-10)m	21	2.1				
Above 10.1m	471	46.9				
Total	1005	100.0				

Sources; Sewo, 2021

3. Poverty: as parts of the social vulnerability indicators, poverty is measured using Mean House Rent value (Sewo, 2021). This study measured poverty in the three residential neighbourhoods using materials used for wall construction, sanitation facility, neighbourhood accessibility and general housing condition. This study found that a very high percentage (54.9%) of the old quarter's buildings were constructed with mud, most housing units (50.2%) are without toilet facility and lack waste management facilities (Table 3.0). Most streets are impassable and buildings are generally in dilapidating state (Plate 1). These conditions clearly shown a neighbourhood ridden with poverty. Cutters, (2008) considered accessibility as a lifeline. A community without accessibility is more susceptible to delayed evacuation during pandemic and inaccessibility contributes to increasing risk of (infectious disease) spread which makes such neighbourhood hazardous. Mean house rent representing poverty showed that the old quarters, the post-colonial quarters and the urban fringe are mostly vulnerable (Appendix ii). This is however not without the exception of neighbourhood in the medium and low neighbourhoods' quarters in Alalubosa, Agodi, parts of Bodija, Oluyole etc. this findings were subject to social vulnerability index using mean house rent to represent poverty. Sanyo, Moslem and Boluwaji neigbourhoods, been contiqous communites and or extension of old quarters where the local mainly resides were found mostly vulnerable to communicable diseases in Ibadan.

Communicable disease hotspot in where residents are highly vulnerable in Ibadan were found mostly in the old quarters and partly in urban fringe Fig. 1.0.

Table 3. Condition of Buildings

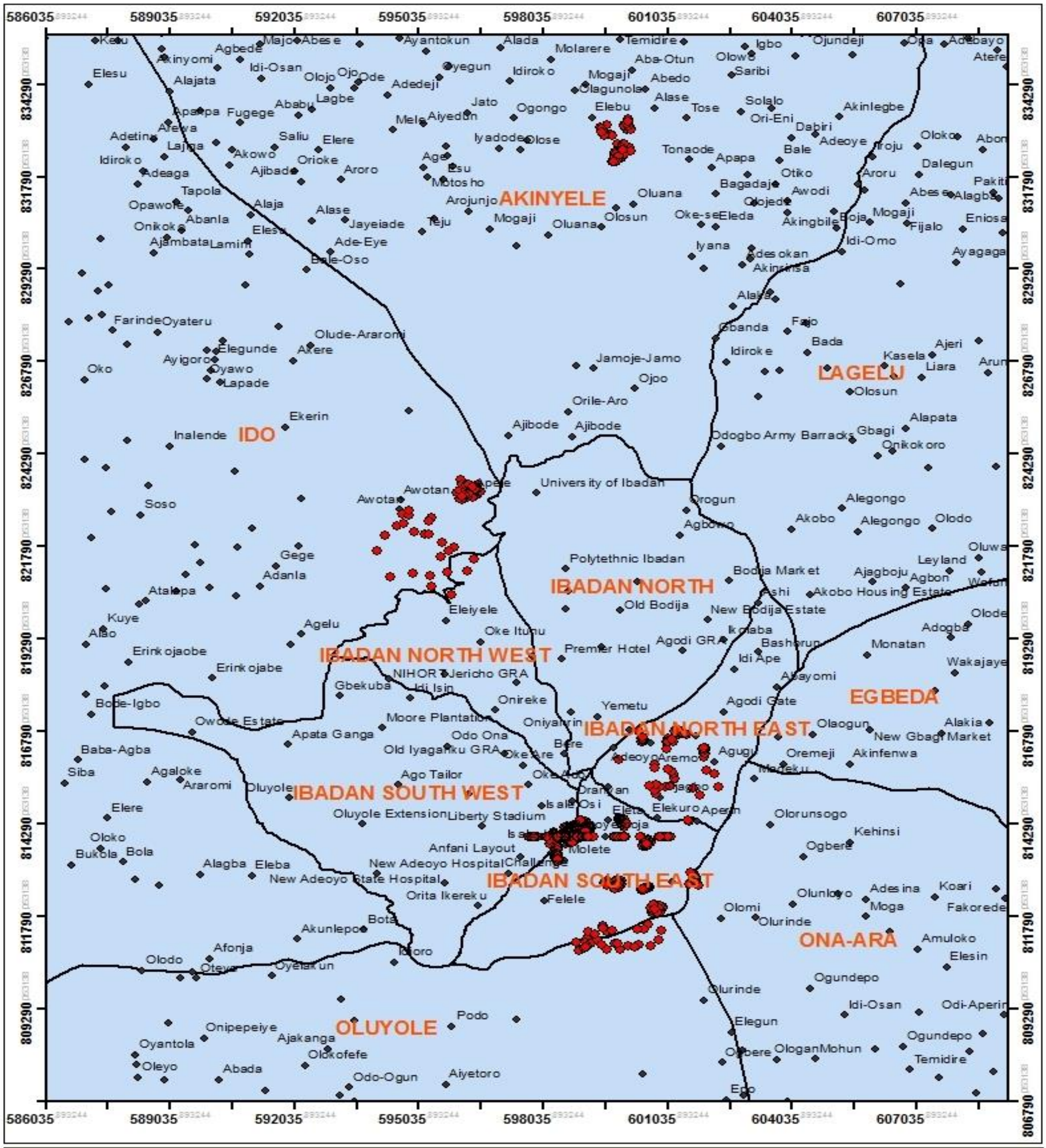
Building Condition		
Good	362	36.0
Needs Minor Repairs	138	13.7
Needs Major Repairs without facilities	505	50.2
Total	1005	100.0
Material Used for Wall		
Block	453	45.1
Mud	552	54.9
Total	1005	100.0

Source: Sewo, 2021

Plate 1.0: Failed Service Road, Balaro, Old Quarters, Ibadan

Source: Sewo, 2021

Fig. 1.0 Ibadan Old Quarters; Red Dots indicates Communicable Disease Hot Spot



CONCLUSION

The 400 years Europe second pandemic, the 18th century typhus fever of great Britain, 1918 Spanish flu pandemic mid-19th century New-York typhus breakout and Lagos 1926 bubonic plague spread, and 2020 corona virus breakout were all blamed on crowded tenement, lack of sanitation and poor hygiene. CDC 2021 also identified risk of Covid-19 transmission within three to six feet of an infectious source and encouraged physical distancing, adequate ventilation, and avoidance of crowded indoor. These conditions were not met in the old quarter's neighborhood of Ibadan, thus, the vulnerability of the city to Covid-19 and other associated airborne disease spread.

Since the study area runs afoul communicable disease control standard, and an appropriate conditions to deterring and or curbing other forms of infectious diseases spread, the need to enforce development control and building code in Ibadan becomes necessary. As Covid-19 pandemic reaches its third wave, WHO, warns, the disease has come to stay. This paper identified old quarters as infectious diseases hot spot in Ibadan due to compact housing, high population density, urban densification and high rate of poverty. The post-colonial quarters are mostly vulnerable due to mobility rate and economic activities. The fringes are vulnerable through unbelief, sprawling, high mobility and economic activities. Vulnerability through quantum of viral load in an enclosed environment is beyond the scope of this paper, thus creating a research gap.

Recommendation

As opined by CDC 2021, the risk for infection decreases with increasing distance from the source, yet, Covid-19 can be transmitted from inhalation of virus in the air in a distance farther than two meters. In an enclosed facility, the spread of the virus from an infectious person exhaling virus indoors for an extended time (more than 15 minutes and in some cases hours), leading to virus concentrations in the air space is sufficient to transmit infections to people more than 2m away, people who have passed through that space soon after the infectious person had left are also at risk.

Therefore, physical distancing, adequate ventilation and avoidance of crowded indoor spaces are recommended for Covid-19 and allied diseases control in the study areas. Town Planners are to ensure and enforce building code through development control in other parts of the city to avoid orofoganna mechanism and to forestall further densification, compact tenements and gentrification of the city`s future.

Appendix 1

Housing Unit Per Neighbourhood Index

SN	Sampled Residential neighbourhood	A 2016 Population Projected 3.5% per annum from 1996 projection {(3.5/100)+1)^{20} x 1996 value		B Average person per building	C Total Housing Unit per neighbourhood C=A/B	D Housing Unit Index C/Max. C
1	Idi-Arere	5631	Old Qaurter	14	402	0.05
2	Bode	20368	Old Qaurter	14	1455	0.19
3	Molete	12581	Old Qaurter fringe	14	899	0.12
4	Idi-Arere	8308	Old Qaurter	12	692	0.09
5	Oke Suna Eleta	10326	Old Qaurter	12	860	0.11
6	Idi-Aro	23883	Old Qaurter	12	1990	0.26
7	Bode (SW)	10956	Old Qaurter	12	913	0.12
8	Elekuro	34300	Old Qaurter	12	2858	0.37
9	Owode-Odooba	50120	Old Qaurter	12	4176	0.54
10	Odo-Oba	50151	Old Qaurter	12	4179	0.54
11	Oke-Olokun	34246	Old Qaurter	12	2853	0.37
12	Felele	52619	Post-Colonial	12	4385	0.57
13	Odinjo	58655	Old Qaurter	12	4887	0.64
14	Yejide Rd.	18357	Old Qaurter	12	1530	0.20
15	Molete 2	25751	Post-Colonial	12	2146	0.28
16	Isale-Jebu	11016	Old Qaurter	12	918	0.12
17	Papa Aiyetoro	2048	Old Qaurter	12	170	0.02
18	Ifelajulo	2138	Old Qaurter	12	178	0.02
19	Elere	2038	Old Qaurter	12	170	0.02
20	Islamic Mission	10956	Old Qaurter	12	913	0.12
21	Kudeti	17277	Old Qaurter	12	1440	0.19
22	Modina Elekuro	34300	Old Qaurter	12	2858	0.37
23	Modina Papa	34300	Old Qaurter	12	2858	0.37
24	Sanyo	9939	Fringe	4	2484	0.32
25	Moslem	5626	Fringe	4	1407	0.18
26	Boluwaji	7426	Fringe	4	1857	0.24
27	Labiran	7424	Old Qaurter	11	675	0.08
28	Ojagbo	31223	Old Qaurter	11	2839	0.37
29	Adekile	31324	Old Qaurter	11	2848	0.37

30	Koloko	42506	Old Qaurter	11	3864	0.50
31	Aremo	42507	Old Qaurter	11	3864	0.50
32	Gbelekale	2664	Old Qaurter	11	242	0.03
33	Aperin	16463	Old Qaurter	11	1497	0.20
34	Ode-Aje	29543	Old Qaurter	11	2686	0.34
35	Agugu	84513	Old Qaurter	11	7683	1.00
36	Oluyoro	21282	Old Qaurter	11	1934	0.25
37	Oke-Ofa	29392	Old Qaurter	11	2672	0.35
38	Oje	14473	Old Qaurter	11	1316	0.17
39	Elebu Junction	29909	Fringe	6	4984	0.65
40	Balogun	29909	Fringe	6	4984	0.65
41	Sawmill	29909	Fringe	6	4984	0.65
42	Morubo	14556	Fringe	6	2426	0.32
43	Papa Area	14556	Fringe	6	2426	0.32
44	Oja Area	14556	Fringe	6	2426	0.32
45	Station Road	14556	Fringe	6	2426	0.32
46	Academy	45001	Post-Colonial	11	4091	0.53
47	Orisunbare	2039	Old Qaurter	11	185	0.02
48	Odinjo 2	58655	Old Qaurter	11	5332	0.69
49	Ifelodun Elere	2038	Old Qaurter	11	185	0.02
50	Ajegunle Balaro	2228	Old Qaurter	14	159	0.02
51	Odo Oba 2	50151	Old Qaurter	11	4559	0.59

Source; Sewo 2021

Appendix ii

Calculation of Social Vulnerability Index for Mean Rent Monthly House Value

S/N	LGA	Sampled Residential neighbourhood	Mean three Bedroom House Rent Value/Month (₦) in neighbourhood	Mean three Bedroom House Rent/ Value/Month (₦) in LGA	Value difference (N) of Neighbourhood and LGAs (X)	X + Absolute Value of Maximum X (Y)	Mean house value Vulnerability score (Absolute value Y/maximum Y)
1	Ib.South-West	Idi-Arere	2000	3500	1500	6500	0.6
2	Ib.South-West	Bode	2000	3500	1500	6500	0.6
3	Ib.South-West	Molete	3000	3500	500	5500	0.5
4	Ib.South-West	Ajegunle Balaro	2250	3500	1250	6250	0.6
5	Ib.South-East	Idi-Arere	2000	2500	500	5500	0.5
6	Ib.South-East	Oke Suna Eleta	2000	2500	500	5500	0.55
7	Ib.South-East	Idi-Aro	2000	2500	500	5500	0.55
8	Ib.South-East	Bode	2000	2500	500	5500	0.55
9	Ib.South-East	Elekuro	2000	2500	500	5500	0.55
10	Ib.South-East	Owode-Odooba	2000	2500	500	5500	0.55
11	Ib.South-East	Odo-Oba	2000	2500	500	5500	0.55
12	Ib.South-East	Oke-Olokun	2000	2500	500	5500	0.55
13	Ib.South-East	Felele	2000	2500	500	5500	0.55
14	Ib.South-East	Odinjo	2000	2500	500	5500	0.55
15	Ib.South-East	Yejide Rd.	2000	2500	500	5500	0.55
16	Ib.South-East	Molete	2000	2500	500	5500	0.55
17	Ib.South-East	Isale-Jebu	2000	2500	500	5500	0.55
18	Ib.South-East	Papa Aiyetoro	2000	2500	500	5500	0.55
19	Ib.South-East	Ifelajulo	2000	2500	500	5500	0.55
20	Ib.South-East	Elere	2000	2500	500	5500	0.55
21	Ib.South-East	Islamic Mission	2000	2500	500	5500	0.55
22	Ib.South-East	Kudeti	2000	2500	500	5500	0.55
23	Ib.South-East	Modina Elekuro	2000	2500	500	5500	0.55
24	Ib.South-East	Modina Papa	2000	2500	500	5500	0.55
25	Ib.South-East	Academy	2500	2500	500	5500	0.55

26	Ib.South-East	Orisunbare	2000	2500	500	5500	0.55
27	Ib.South-East	Odinjo	2000	2500	500	5500	0.55
28	Ib.South-East	Ifelodun Elere	2000	2500	500	5500	0.55
29	Ib.South-East	Odo Oba	2000	2500	500	5500	0.55
30	Oluyole	Sanyo	5000	10000	5000	10000	1.0
31	Oluyole	Moslem	5000	10000	5000	10000	1.0
32	Oluyole	Boluwaji	5000	10000	5000	10000	1.0
33	Ib.North-East	Labiran	2000	2200	200	5200	0.5
34	Ib.North-East	Ojagbo	2000	2200	200	5200	0.52
35	Ib.North-East	Adekile	2000	2200	200	5200	0.52
36	Ib.North-East	Koloko	2000	2200	200	5200	0.52
37	Ib.North-East	Aremo	2000	2200	200	5200	0.52
38	Ib.North-East	Gbelekale	2000	2200	200	5200	0.52
39	Ib.North-East	Aperin	2000	2200	200	5200	0.52
40	Ib.North-East	Ode-Aje	2000	2200	200	5200	0.52
41	Ib.North-East	Agugu	2000	2200	200	5200	0.52
42	Ib.North-East	Oluyoro	2100	2100	100	5100	0.5
43	Ib.North-East	Oke-Ofa	2000	2200	200	5200	0.52
44	Ib.North-East	Oje	2000	2200	200	5200	0.52
45	Akinyele	Elebu Junction	5000	4000	-1000	4000	0.4
46	Akinyele	Balogun	5000	4000	-1000	4000	0.40
47	Akinyele	Sawmill	5000	4000	-1000	4000	0.40
48	Iddo	Morubo	5000	4000	-1000	4000	0.40
59	Iddo	Papa Area	5000	4000	-1000	4000	0.40
50	Iddo	Oja Area	5000	4000	-1000	4000	0.40
51	Iddo	Station Road	5000	4000	-1000	4000	0.40

Source: Author`s pre-field survey and construct, (2015) Note, the highest rent index is the most vulnerable area in the metropolis.

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