# Developers Compliance with Urban Residential Development Control Measures in Kaduna Metropolis, Nigeria

Salihu, N.<sup>1</sup>, Ankeli, I. A.<sup>2</sup>, Nuhu, M. B.<sup>3</sup>, Sanni, M. L.<sup>4</sup>, Sule, I. A.<sup>3</sup>, Aliyu, A. A.<sup>1</sup>, Gwamna S. E<sup>5</sup>, & Hamza, U. Y.<sup>6</sup>

<sup>1</sup>Department of Estate Management, Bayero University, Kano, Nigeria. <sup>2</sup>Department of Estate Management and Valuation, Federal Polytechnic, Ede <sup>3</sup>Department of Estate Management and Valuation, Federal University of Technology, Minna, Niger State. <sup>4</sup>Department of Urban and Regional Planning, Federal University of Technology, Minna, Niger State. <sup>5</sup>Department of Estate Management and Valuation, Niger State Polytechnic, Zungeru, Nigeria <sup>6</sup>Depart of Estate Management, Waziri Umaru Federal Polytechnic Birnin Kebbi <sup>1</sup>Snasiru.esm@buk.edu.ng; <sup>2</sup>thonyankeli@gmail.com; <sup>3</sup>mbnuhu@futminna.edu.ng; <sup>4</sup>Sanni.lekan@futminna.edu.ng; <sup>5</sup>suleabbass76@futminna.edu.ng; <sup>6</sup>aaaliyu.esm@buk.edu.ng; <sup>7</sup>emshega@gmail.com; <sup>8</sup>Hamzayaro002@gmail.com

Corresponding author: <u>Snasiru.esm@buk.edu.ng</u>,

### Abstract:

This study critically assesses the level of compliance with urban planning and physical development control measures of residential property in Post Covid-19 era in some selected neighbourhoods in Kaduna metropolis. Quantitative research approach was used to collect survey data from real estate firms' portfolio's using Open Data Tool Kit application. Data collected were analysed with the aid of descriptive (percentage, cluster bargraph) and inferential (ANOVA) statistical techniques. The results show among others that compliance with regulations on numbers of people in a room, room size and setbacks is low this negates part of covid-19 guidelines. Dilapidating housing and ancillary service negatively affects staying at home strategy and clients' willing to pay, thus limiting investors' ability to make repairs and increases the chance of mortgage default because of increasing stunted rental growth. Consequently, the study recommends that with the consistent rise in mutation of the virus, policy makers should formulate and holistically implement policies that capture new residential demand trends that improve quality of life in post pandemic environment. Also, sustainable and all-inclusive campaign strategy is required that accommodate covid-19 protocol for residential building guidelines with a view to curtailing surge in infection rate and decrease mortality rate now and in the future.

Keywords: Compliance, land use, development control measure, residential property, pandemic

# INTRODUCTIONS

Population growth in most cities in Sub-Saharan Africa has increased demand for housing. The phenomenon has stimulated squalid residential development in nooks and cranny of cities (Salihu *et al.*, 2021) overwhelming most local and central government. This has resulted in inadequate and overstretched basic infrastructure. The mutating nature of the dreaded coronavirus of December 2019 (Covid-19) has gone beyond national and international boundaries including Nigeria. Total/partial lockdown was the first protocol employ by government of many nations in line with World Health Organisation (WHO) guideline Nigeria inclusive. The policy guidelines particularly emphasised total/partial lockdown and social distancing in order to reduce mortality rate by restraining the virus spread. In fact, Covid-19 has globally stress-tested urban system within and across all sectors (particularly the housing sector) and regions and has been exacerbated by the volatile economic shock. Total/partial lockdown and social distancing in Nigerian cities has affected the housing sector (Olanrele and Thontteh 2020) by creating Volatility and hostility in the property market trends living the operators in mystery of tackling the lacuna caused by the global health pandemic. Unquestionably investing in residential properties upturn the disposable income of households (Arimah & Adeogbo, 2000). The pandemic's effect on housing is visible particularly on the income streams of investors and, more pronounced where deteriorating basic housing infrastructure is evidently increasing and overstretched by the Work from Home (WFH) strategy.

Undoubtably, with the new normal the taste and preference of client in terms of housing will be to a large extent guided by social distance-induced demand change (Organization for Economic Cooperation and Development,

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2020) which is hoped to address the current health crisis. In simpler terms, consumer's decision in terms of renting or buying a house is anchored primarily on the dynamics of a property type that meets the work from home functionality (Salihu, 2022; Chiwuzie et al., 2019) and have the wherewithal to safeguarding (lower density homes and working remotely) a household from the dreaded pandemic. Hence, household decision is based on the supposition that poor housing condition particularly overcrowding worsens the public health impact of the pandemic (Brandily et al., 2020).

On the other hand, modification/alteration of new, on-going or existing housing in compliance with the specification (spacious housing) of Covid-19 protocol are ways stakeholders might respond to the household social distance induced demand change. In this era, "new normal" consumers'/clients' preference for housing will consistently evolve over time. In fact, the Covid-19 pandemic has unsettled construction efforts in two-folds. First, in terms of new construction and on-going plans for developers' and second distorted real estate plans in terms of inability to pay for habitable housing accommodations (OECD, 2020; Ankeli et al., 2021). Alteration of developers' plans and affordability problem of clients will vary according to regions and also depends on the level of timing and strictness of confinement, socio-economic status and public health crisis. Therefore, compliance scenario will differ across region. Thus, there is need for more research in this domain to unearth regional peculiarity.

It is in the light of the aforementioned, this paper contributes to the body of knowledge that investigate Post Covid-19 in terms of compliance with housing development regulations in the Nigeria property market by assessing the level of compliance of developers to urban planning and physical development control measures in Post Covid-19 era in four selected residential neighbourhoods in Kaduna metropolis, Nigeria.

# LITERATURE REVIEW

The outbreak of the Covid-19 pandemic has stress-tested all nations, irrespective of their socio-economic and political status. In fact, the developed nations are worst hit. Uncertainty and economic disruption have been striving both in the corporate and private sphere owing to how to subdue transmission of the virus. In Nigeria, the effect is enormous in the housing sector (Olanrele and Thontteh 2020), these effect might be attributed to non-referral to the planning authority or building regulations in the initial property development stage particularly in the urban areas where development is vivid. Non-adherence to planning regulations affect the intrinsic and extrinsic attributes of housing that are used in determining price (Salihu et al., 2021; Nuhu et al., 2022).

Equally, laxity in implementing planning regulations give developers the latitude to develop property based on profitability index only, allowing for development of property at an extreme latitude (small dwelling unit) which create great concern (Ogbonna et al., 2017) while on the other hand the pandemic is a respiratory infectious disease that require social distancing (spacious environment) as a control measure. For example, structural design standard if not sternly enforced may result to overcrowding (Salihu, 2022). However, overcrowding has demonstrated to worsen the public health impact of the pandemic (Brandily et al., 2020). This is dangerous especially in Nigeria where extended family ties are accommodated. With this recent development Covid-19 can adversely strive and distort the residential property subsector of the economy hence the need for renewed interest in this domain to curtail the unprecedented rental crisis that is looming ahead.

### **Theoretical framework**

This study's theoretical underpinning is the Public Interest Theory on Regulation "PITR" (Christensen, 2010). Applying the theory relative to this study, PITR reinforce the certainty that building development in Kaduna metropolis requires adherence to stipulated planning standards which are mostly enforced by the local or central government through compulsory directive, absolutely issued to improve the inhabitants' overall quality of life in terms of health and economy.

In the past two decades, a number of studies have surface and provide important information relative to compliance with residential urban planning regulations. For example, Odekunle et al. (2019) studied the effect,

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challenges and way forward in development control, Abubakar et al., (2013) reviewed model of compliance, Bogoro and Nghalmi, (2014) studied knowledge, practice and attitude of development control, Adeogun et al. (2017) concentrated on development control and rental value, Jimoh et al. (2017) did research on nature, extent and effect of development control contravention, Matey et al. (2017) studied zoning standards in areas under customary land tenure, Popoola et al. (2017) worked on legal and institutional framework for development control practice, Ogbonna et al. (2017) did research on compliance with property development, Salihu et al. (2018) studied development control measures and sustainable development goal, Ojo-Fajuru and Ambrose (2018) centred their study on encroachment and causal factors affecting compliance, Ngetich et al. (2016) and Omollo, (2019) concentrated on efficiency of development control, Osuizugbo, (2019) and Onaiwu, (2020) study the public adherence to 'structural' development control while Omollo and Opiyo (2021) did study on urban road planning. But one of the most significant current discussions is the multi-faceted effect of Covid-19 on cooperate and private lives of occupant of the built environment. This multi-faceted effect has triggered further research questions and investigation.

The significance of adherence to housing planning standard in surmounting, aiding and controlling overcrowding cannot be over-emphasised, there has been very little quantitative assessment of compliance level relative to Post Covid-19. More so, taste and preference of consumers in terms of housing changes over a time horizon (Chiwuzie et al., 2019; OECD, 2020). Therefore, it has become imperative to critically assess developers' compliance level with residential development control and physical planning regulations in Post covid-19 era in Kaduna metropolis.

# **RESEARCH METHODOLOGY**

Quantitative research strategy was used for this study; in which primary data (neighbourhood, physical and location attribute) of residential properties were collected from Estate survey and valuation firms in Kaduna metropolis with the aid of cross-sectional survey method. The property type employed for this study comprises one, two and three-bedroom residential property in Unguwan-rimi, Barnawa, Malali and Sabon-tasha. By June 2020 countries were progressively recouping expansionary territory caused by Covid-19 (OECD, 2020) hence this study's data collection time span started from July 2021 to August, 2021. In this study, purposive random sampling technique was used to select 580 residential properties for data collection in these locations (Kjercie and Morgan, 1970; Salihu, 2022). On-site measurement of geometric variables and their out-door spaces were used to collect the primary data. Open Data Tool Kit application checklist was used to enter the data. The collected primary data were subsequently downloaded and put to cleaning and filtering test to check for half-filling of the checklist form. 12 forms were deleted because they were below 85% filled (Pallant, 2011), hence could not be used for further analysis.

Also, criteria for assessment were based on the basic minimum standard of residential development as enshrined in KASUPDA manual of 2017. Consequently, on-site direct observation/checklist were scored based on the principle that where a developer complied with basic minimum standard 1 point is scored and otherwise 0 "noncompliance to basic minimum standard" (Ogbonna et al., 2017). More so, the on-site survey data were ordinal data which later were converted to percentages (percentages data are often treated as continuous data, because the percentage can take on any value along the continuum from zero to 100%) to achieve the study aim. Aggregate horizontal multiple bar-chart were used, for ease of assessing and reporting the level of aggregate compliance of a developer within a neighbourhood or if not to a given regulation while the inter-rate compliance to the regulation were classified as follows 0 - 49% = low compliance, 50 - 100 = High compliance (Ogbonna et al., 2017). Also, one – way ANOVA was further performed on percentage data (continuous data) in order to demonstrate if there is statistically significant difference in mean score of level of compliance among the neighbourhoods.

### FINDINGS/DISCUSSIONS

Figure 1 shows the aggregate level of compliance with structural regulations standard in Unguwan-rimi, Barnawa, Malali and Sabon-tasha in the study area. Data indicates that compliance with basic minimum standard

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of building coverage, fire extinguisher, colour code, store size, certificate of fitness and habitation and, as built drawing are below 50% compliance rate. This indicates that the basic requirement of social distancing was partially achieved because the basic requirement of spaciousness of housing in term of reducing overcrowding to achieve social distancing was below 50%. Regrettably, overcrowding worsens the public health impact of covid-19 (Brandily et al., 2020). This finding on continual reductions in dwelling space by developers in Nigeria property market validate Ogbonna et al. (2017). More so, small room size traps and increases thermal heat which lessens the chances of reducing cross ventilation and overcrowding so as to achieve social distance. Hence in part, contributed to the rate of infection in Kaduna metropolis.



Figure 1: Relative horizontal bar-chart of structural regulations

Figure 2 Compliance with basic minimum standard on neighbourhood regulations in study areas. Inferences from the Figure indicates that regulations on garbage receptacle, drainage system, waste disposal system and security in Sabon-tasha and a general change in use and habitation is below 50% compliance rate. This suggest that the proliferation of waste within Sabon-tasha neighbourhoods is vivid most especially during the lockdown. Also, insecurity is shown to have been at 32.05% suggesting the need for a sustainable security measure in the study area.

Figure 3 presents compliance with location regulations in the study neighbourhoods. Result from the Figure indicates that numbers of trees are below 50%, though the KASUPDA manual of 2017 proscribes that each property should have at most four to six trees depending on the plot size. Tree shade are multi-beneficial to occupants; hence it improves their quality of life (Bello and Yacim, 2013). The shortfall in numbers of trees might have increased the indoor thermal heat of the residential properties to the detriment of the occupants during the total lockdown and work from home approach employed by the Covid-19 presidential task force within Nigeria.

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Figure 2: Relative horizontal bar-chart of neighbourhood regulations



### Figure 3: Relative horizontal bar-chart of location regulations

Observation from the results (Figures 1, 2 and 3) on the level of compliance with urban land use planning regulations induced the need for further evaluation of the data obtained from the study areas. ANOVA was further used to establish whether there is equal mean in the level of adherence to ULUPR within the study areas and the results are presented in Tables 1-6.

Table 1 Analysis of variance for compliance with structural regulations

Source	DF	SS	MS	F	P-value	- The	result
Factor	3	8598	2866	3.50	0.018	from Ta	able 1
Error	104	85099	818			shows	that
Total	107	93698				there	is
						sign	ificant

difference in the mean rate of compliance with structural regulation attributes in the study areas of Unguwanrimi, Barnawa, Malali and Sabon-tasha with p-value = 0.018.



the means score Table 2 shows Barnawa has higher mean of 76.57 in compliance with structural regulation

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attributes as compared with Unguwan-rimi, Malali and Sabon. In simpler terms, Barnawa has a better compliance level in the study area.

Table 3 Analysis of Variance showing Variations in Extent of compliance with neighbourhood regulations in Unguwanrimi, Barnawa, Malali and Sabon-tasha

Source	DF	SS	MS	F	P-value
Factor	3	7422	2474	3.17	0.036
Error	36	28098	781		
Total	39	35521			

Table 3 shows variations in extent of compliance with neighbourhood regulations in the study neighborhoods. From the Table, the p-value = 0.036 and it infers that there is a significant difference in extent of compliance with neighbourhoods' regulations in Unguwan-rimi, Barnawa, Malali and Sabon-tasha.

Table 4. Mean s	Lable 4. Mean score of Neighbourhood/regulations							
				Individual	L 95% CIs F	or Mean	Based on	
				Pooled StI	Dev			
Level	N	Mean	StDev	+	+	+	+	
Unguwan-rimi	10	78.83	28.02		(	*	)	
Barnawa	10	82.74	27.79		(	*	)	
Malali	10	80.66	28.08		(	*	)	
Sabon-tasha	10	49.45	27.85	(*	*)			
				+	+	+	+	
				40	60	80	100	

Pooled StDev = 27.94

In addition, the mean score Table 4 showed that, Barnawa has the highest mean = 82.74 in extent of compliance with neighbourhood regulations as compared with Unguwan-rimi, Malali and Sabon-tasha.

Table 5. Analysis of Variance showing Variations in Extent of compliance with location regulations in Unguwan-rimi, Barnawa, Malali and Sabon-tasha

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Source	DF	SS	MS	F	P-value	
Factor	3	458	153	0.36	0.781	
Error	16	6734	421			
Total	19	7192				

Table 5 shows the result of one-way analysis of variance showing variations in extent of compliance with location regulations in the study neighbourhoods with p-value = 0.781 and it infers that there is no significant difference in extent of compliance with location regulations in Unguwan-rimi, Barnawa, Malali and Sabon-tasha.

Table 6. Mean score of location regulations/

		×		Individual 95% CIs For Mean Based on
				Pooled StDev
Level	N	Mean	StDev	++++++
Unguwan-rimi	5	86.98	12.78	()
Barnawa	5	86.68	11.11	()
Malali	5	88.90	9.46	()
Sabon- <u>tasha</u>	5	76.64	36.16	()
				++++++
				60 75 90 105

Pooled StDev = 20.52

Lastly, the result from the mean score Table 6 shows that, Malali have the highest mean score = 88.90 in extent of compliance with location regulations as compared with Unguwan-rimi, Malali and Sabon-tasha. **Conclusion** 

Findings from the study suggest that compliance with structural regulation was partially achieved because the basic requirement of spaciousness of housing in terms of reducing overcrowding was below 50%. Overcrowding worsens public health impact of covid-19 (Brandily et al., 2020), these findings substantiate Ogbonna et al. (2017) in terms of small internal and housing space.

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The findings also show that compliance with neighbourhood regulations regarding change in use and habitation is below 50% indicating that a some percentage of houses in the neighbourhoods have informal status hence aggravate formation of squalor settlements, while Sabon-tasha neighbourhood had a greater percentage of non-compliance in terms of insecurity, garbage receptacle, solid waste disposal, road drainage system suggesting the need for an inclusive sustainable measures to tackle the challenges in the study area.

More so, findings on compliance with location regulations suggest that regulation on number of trees is below 50% compliance. Tree shades are known to have positive effect on occupants hence improve their quality of life (Bello and Yacim, 2013). The short fall in number of trees most undoubtedly intensifies the indoor thermal heat composition of the rooms particularly during the lockdown. Indoor thermal heat in Kaduna metropolis hampered the rate of compliance with Covid-19 presidential task force order (social distance) put in place to reduce the spread of the dreaded virus. Similarly, rise in indoor thermal heat induced change in demand structure (taste and preference) of home seeker to a better housing type that meet their current taste and preference. It is without doubt that the pandemic had induce change in demand structure in some location, this led to voids in residential properties.

It is in view of the finding that this study recommends that policy makers should formulate and holistically implement policies that capture new residential demand trends that improve quality of life in post pandemic environment. This could be achieved through increase in public campaign on sustainable waste disposal and security, maintenance and repairs. Also, planting of trees, need for cross ventilations these will attract client and increase rental and capital appreciation. With a view to curtailing surge in infection rate and decrease mortality rate now and in the future.

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