RESILIENCE AND LIVABLE CITIES IN A WARMING WORLD

A FESTSCHRIFT IN HONOUR OF

TPL. DR. JOSHUA ADEWUMI ADEBISI FNITP, RTP



EDITED BY

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Editors:
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CHAPTER 17

INCREMENTAL HOUSING AND PHYSICAL PLANNING STANDARDS' COMPLIANCE IN IBADAN SUB-URBAN AREAS, OYO STATE, NIGERIA

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Abstract
Incremental housing is a gradual construction of homes by the residents over a period of time, particularly in developing countries. The majority of these houses have contributed to the creation of informal settlements, due to non-compliance with Physical Planning Standards (PPS). The existing literature on incremental housing has focused more on financing and tenure insecurity, with little attention paid to compliance with PPS. This study, therefore, examined incremental housing compliance with PPS in the sub-urban Local Government Areas of Ibadan, Nigeria. The concept of Survival Strategy was used for the study. Survey research design was adopted, and mixed-method sampling strategy was used in administering questionnaires to 1,038 occupiers of incremental buildings from 4,152 in 12 neighbourhoods out of 124 identified by Oyo State Ministry of Lands, Housing, and Urban Development (OSMLHUD). Data were analysed using descriptive statistics and logistic regression at α0.05, while qualitative data were content analysed. The study reveals that 71.1% of the respondents have resided in their houses between 11 and 30 years, while those who have completed one room, two rooms and three rooms constituted 57.4%, 28.1% and 14.5% respectively. 73% of the respondents did not have ABP. Observed stages of development were core (56.1%), expanded (22.3%), and consolidated (21.6%). Houses with pit toilet/latrine, unplastered walls and uncompleted roofs were 84.3%, 62.5% and 52.4 % respectively while 72.1% lack functional windows. About 89.5% of the buildings were situated <6m from the PL, 36.4% <10m from EHV, and 18.7% <15m from streamline, while 85.2% did not have parking facility. Hypothesis tested discovered that obtaining ABP is a function of age (OR=1.05, CI: 1.02-1.08), income (OR=1.11, CI: 1.07-1.15), education (OR=1.22, CI: 1.15-1.30), and awareness (OR=1.6, CI: 1.45-1.88). Challenges for enforcing compliance with PPS include limited funding, insufficient personnel, and inadequate equipment. Tenure insecurity, poor awareness, and high cost of documentation were hindrances to obtaining BPA. Therefore, awareness of planning permit and compliance are necessary.

Keywords: Incremental housing, physical planning standards, approved building plan

1.0 Introduction

The United Nations estimates that there will be roughly 8 billion people on the planet by 2030, two billion more than there were in 2008 (UNPF, 2007). The UN-Habitat (2012) projects that by 2050, there will be 9.6 billion people on the planet, with the majority of this growth taking place in less developed regions' metropolitan areas. Sub-Saharan Africa is responsible for a significantly substantial portion of the urban population's expansion, which is predicted to quadruple between 2010 and 2030 and is

expanding faster than in any other region (UN-Habitat, 2015). Since land is not growing, the excess population will move to the sub-urban areas, where nearly all of the population growth (90%) will be absorbed by the urban areas of the less developed region, expanding the population by 2 billion people (UN-Habitat, 2016).

Inadequate housing is one of the consequences of the developing world's fast urbanisation. According to UN-Habitat (2020), 1.6 billion people live in substandard housing, and over 100 million homeless people are compelled to live without any shelter at all, primarily in squatter settlements and suburban slums in developing countries. The number of people in slum regions in 2020 was anticipated at 1.4 billion (UNPF, 2007). In Asia, Africa, Europe and North America, Latin America, the Caribbean, and Oceania, the proportion of slum residents is 881 million (53%), 238 million (15%), 13 million (less than 1%), 111 million (7%), and 24 million (2%). 3 billion people, or about 40% of the world's population, are expected to require access to quality housing by 2021, according to UN-Habitat, with an average of five people residing in each home. This corresponds to 96,000 new units of accessible and reasonably priced housing each day. One in four people, according to the report, live in situations that are harmful to their financial stability, health, and general well-being. Adefulure (2016) states that most new urban dwellers will settle in unlawful settlements in informal city areas, and that strategies for informal housing, which range from coercive eviction to neglect and denial of infrastructure and services, are being replaced by incremental housing alternatives.

Ojo (2016) asserts that housing is a system of settings in which a specific system of activities takes place. Housing encompasses not only the dwelling unit but also the neighborhood and its environmental quality profiles. Depending on the owner's financial capacity, such a system of activities may be completed quickly or over an extended period of time. Incremental housing is the type that takes a long time to finish, if it is finished at all. Since the 1960s, the significance of incremental housing in housing development has been recognised (UN-Habitat, 2015). Incremental housing construction is based on low-income households, who often have no other option except to construct their own shelters. As a result, millions of households use their own labour, savings, resources, and talents to build their homes. Generally speaking, incremental housing is a strategy that enables homeowners to progressively upgrade and expand their homes over time as opposed to having to pay for an entire house up front (Agarwal, 2019). According to Gilbert (2020), incremental housing allows homeowners to upgrade and enlarge their homes through staged building (initial, stabilising, and consolidating phases).

The practice of building shelters gradually and improving their size and quality over time is known as incremental housing development, according to Cirolia, *et al* (2021).). Initially, the methodical construction process primarily provides a temporary shelter. It is possible to achieve later horizontal and vertical extensions while anticipating the usage of durable materials in later phases. Cirolia, *et al* (2021) contends that this kind of construction process is heavily influenced by the priorities of each home, the amount of money available, and adjustments based on the size of the family. According to Baker et al, (2018), incremental housing is defined by affordable, responsive, and flexible housing processes that allow families to gradually expand and upgrade their homes. However, their legal status is typically precarious, and they are underserved by the current urban infrastructure, which leads to unhealthy living.

Incremental housing development is marred with varieties of issue such as building without ancillary facilities (water, toilet, bathroom, kitchen, etc.) and accessibilities like roads which amalgams livability challenges for the people of such area (Adeyeni, 2016). According to Section 16(3)(d) of the Federal Republic of Nigeria's 1999 Constitution, which is titled "Fundamental Objectives of State Policy," the Nigerian State is required to provide all of its residents with appropriate and sufficient housing (Federal Republic of Nigeria, 1999). However, its attainment is still unrealisable, hence individual efforts through incremental housing development becomes the norms. In Nigeria, only the high and to certain extent the moderate-income households can afford to develop decent and affordable housing units in the comfortable residential estates of the upper class (Ojong, *et al,* 2021). Low income housing is carried out by inventors, owner-occupiers or squatters (by stage construction/incrementally) in informal settlements such as slums and squatter settlements. Olakunde (2014) asserts that because the housing gap primarily impacts lo - and moderate-income individuals, incremental housing systems have not been able to adequately meet their needs. This is due to the fact that homeowners usually use subpar materials and take 15 years to complete a residential unit (Adefulure, 2016). The conditions for both qualitative and quantitative housing deficits were set by economic crises and the predicament of governance (Ajakaiye and Akinbinu, 2000).

Proliferation of incremental housing is characterised by alteration of the land size, variation in the use of land, development of squalor and informal settlement among others. Other challenges posed by incremental housing on physical development is that of aesthetic deviation from the plan in which developers erect incremental structure sporadically without following a particular order to the extent that the whole aesthetic view and natural scenery of the physical area where these incremental housing are concentrated become unsightly (Adeyeni *et al,* 2016). The related challenges of incremental housing on the physical development of the neighbourhood is that they are devoid of town planning regulation in which air space, setback, front line, building coverage etc. are never adhered to, thereby leading to chaotic building development in the neighbourhood where those incremental housing abound (Olakunde,2014). According to Adeyeni (2016), incremental housing development is a collection of debilitating housing conditions where a number of factors combine to create deteriorated buildings, a high occupancy rate, a physically uninteresting environment in terms of social amenities and landscaping, a lack of public facilities or their inadequate provision, low rent, bad architectural design, and general vandalism. Other major problems relating to incremental housing development include conflicting land uses, poor aesthetics and unsightly cityscape.

Through incremental housing, more people, particularly the impoverished—occupy ecologically fragile locations, occasioned by lack of required capital to complete their intended abode at once. Thus, attention needs to be drawn to the necessity for more detailed research to unravel the analysis of incremental housing development especially within the context of compliance with physical planning standards. According to Bredenoord (2019), despite the challenges and limitations, incremental housing is nevertheless prevalent practically everywhere these days; it occurs on a big scale and is unavoidable for many. In the sub-urban local government districts where the impoverished

reside, these issues are especially common. Distorted or poorly managed planning policies are often linked to adverse socio-psychological, economic, and environmental outcomes in sub-urban local government regions (Taiwo, 2022). In light of these circumstances, the goal of this study is to critically analyse incremental housing compliance with physical planning standards in the sub-urban local government areas of the Nigerian city of Ibadan. In these areas, the production of incremental housing is most rapidly uncontrolled, devoid of basic infrastructure and utility services, and composed of illegal residential buildings.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Incremental Housing as Survival Strategy

Duque and Pastrana's 1973 investigation of impoverished districts in Santiago, Chile, is credited with giving rise to the idea of survival strategy (Tipple, 2016). The idea was used at the time to emphasise the productive and active role of the impoverished in urban areas, as well as to acknowledge their behaviour as rational and well-informed (Whiteman, 2006). People's strategic reactions to economic crises have been widely analysed using the "Survival Strategy". It is a useful method for investigating the dynamic character of the setting where decisions about livelihood are made. There has been a lot of interest in using survival strategy as an analytical framework (Whiteman, 2006). The idea has proven beneficial because it focuses on the tactics of the underprivileged and those who live in marginalised places, including the Ibadan metropolis' sub-urban local government districts. Such a fear is justified for a number of reasons. First of all, it is remarkable to use the term "strategies" to describe what the impoverished do to survive when faced with financial hardships, as the concept implies that they frequently lack the luxury of choosing from a variety of options. Second, since it is assumed that the impoverished react more strongly to economic change, the term "survival strategies" is justified when used to characterise their responses to economic crises.

Therefore, the poor use incremental house building as a survival strategy to meet their housing needs. Even while many African city dwellers live in poverty, many people who have adapted their means of subsistence in response to the economic, environmental, and climatic crises may not have done so primarily to survive. The survival strategy is particularly relevant to the study of incremental housing development because the problem of incremental housing is common among the poor in developing world. The poor bear the effects of housing crisis more than the rich. People that are affected often devise survival strategies within their income level to find solution to the housing problem. One of such strategies is the incremental housing development. The rich can afford to acquire the basic housing facilities required for toileting, cooking, illumination, ventilation and recreation while the poor may result to the use of open defecations, use of fossil fuel for cooking, use of unhygienic water for domestic purpose and living in substandard housing.

The concept best explains the attitude of the populace to the housing in a less regulated society. As residents adopt diverse survival strategies to cope with housing challenges confronting them through incremental housing development, the tragic effects of such unguided development are bore by the common people. Every additional

incremental housing unit in the sub-urban often constitutes additional stress and consequences on the available infrastructural facilities.

2.2 Empirical Review

2.2.1 Incremental Housing Compliance with Physical Planning Standards

Incremental housing, commonly practiced in developing countries, involves the phased construction of homes by individuals or families based on available financial resources. While this approach offers a practical and affordable solution to the housing needs of lo - and middle-income earners, it often exists outside the boundaries of formal planning frameworks. Most incremental housing developments begin informally, lacking building permits, land titles, or technical supervision. As a result, they typically fall short of complying with physical planning standards and regulations, which are designed to guide urban development through zoning laws, minimum plot sizes, building codes and infrastructure requirements (UN-Habitat, 2015; Durand-Lasserve and Royston, 2015)

Physical planning standards and regulations are designed to guide urban development, ensuring that constructions meet safety, health, and environmental conditions (UN-Habitat, 2012). But according to (Oyesiku, 2010), these rules include land use policies, construction standards, zoning laws, and development control measures. Compliance with these standards is crucial to prevent haphazard development, mitigate environmental disrepair, and promote the well-being of urban residents. Notwithstanding, the rigidity and complexity of these regulations can pose hurdles to incremental builders, who may dearth the resources or knowledge to navigate formal approval processes (Payne, Durand-Lasserve, and Rakodi, 2009). Conversely, in many developing countries, the formal planning system does not align with the realities of low-income households, leading to widespread non-compliance or informal construction practices (Tipple, 2000).

The challenge of ensuring compliance arises from the misalliance between rigid planning standards and the flexible, informal nature of incremental housing. These standards often fail to account for the socio-economic realities of urban poor populations, leading to widespread non-compliance and the proliferation of informal settlements (Rakodi, 2014; Watson, 2014). The imperative to bridge this gap requires comprehensive policy frameworks, participatory planning, and regulatory flexibility that support rather than reprimand gradual housing improvements. In this regard, regularisation programs, technical support for self-builders, and the recognition of indigenous building practices are essential strategies for integrating incremental housing into formal planning systems (Cirolia and Scheba, 2021; Arimah, 2019). Therefore, a balanced approach that recognises both the inevitability of planning standards and the practical veracities of incremental development is fundamental for stimulating equitable and sustainable urban growth.

Incremental housing developments must comply with local building codes, including standards for structural integrity, fire safety, and accessibility (World Bank, 2020; UN-Habitat, 2020). These codes are essential to ensure the resilience and safety of self-built or gradually expanded homes. Developments must adhere to zoning regulations, including land use designations, density limits, and building height

restrictions. These zoning laws guide urban form and help avoid unharmonious land uses (Mahabir *et al*., 2020). Housing units must be built with adequate setbacks from property lines, roads, and other structures. Buffers are often required to reduce environmental impact and ensure emergency access (Chirisa and Dumba, 2019). Incremental developments must meet minimum standards for infrastructure, including access roads, drainage systems, water supply, and electricity (UN-Habitat, 2020; Ojong and Wapwera, 2021). Secure land tenure is a prerequisite for legal incremental housing. Complying with land ownership regulations helps reduce the risk of eviction and encourages investment in housing improvements (Payne, Durand-Lasserve, and Rakodi, 2022).

Developments must adhere to environmental laws, principally those governing water quality, air pollution, and solid waste management. Compliance helps reduce negative environmental impacts and supports sustainable urban growth (Adelekan *et al*., 2020). Incremental housing must be constructed with consideration for public health. This includes sanitation, waste disposal, ventilation, and the provision of clean water (World Bank, 2020; Ezeh *et al*., 2022). It is encouraging that new construction satisfies the legislative requirements for accessibility, guaranteeing equal access to housing and related services for individuals with disabilities (UN-Habitat, 2020).

There are many difficulties at the intersection of regulatory compliance and incremental housing. Despite the existence of development control measures, incremental housing developments frequently fail to comply, according to a study by Asibey et al. (2023) conducted in Kumasi, Ghana. This is due to a number of factors, including builders' lack of awareness of the regulations, their desire to avoid incurring additional costs associated with compliance, bureaucratic obstacles in obtaining permits, and insufficient enforcement by local authorities. Ghana is not the only country facing these issues; many other quickly urbanising cities, particularly Ibadan, are also experiencing similar patterns. Residents of informal or non-compliant settlements are routinely refused access to basic services and disenfranchised from formal government structures, according to Mahabir *et al*. (2020). Their access to work, healthcare, and education is restricted by their lack of legal status. Urban development plans frequently overlook these neighborhoods, which exacerbates social marginalisation and poverty cycles (Payne *et al*., 2022; World Bank, 2020).

3.0 Materials and Methods

3.1 Study Area

Ibadan Metropolis is geographically located between Latitude $7^{0}23^{1}$-$7^{0}28^{1}$ North of the Equator and Longitude $3^{0}33^{1}$- $3^{0}53^{1}$ East of the Greenwich Meridian Line. Founded in 1829 as a war camp for warriors from Oyo, Ife and Ijebu by Lagelu who was then the Jagun of Ife, it was known then as "Èba - Òdań" which means by the edge of the meadow (Soladoye, 2024). Ibadan became the rallying point for the Yorubas because of its rapid cosmopolitan nature. It is the only city that has 16 entry points sharing boundaries with Ijebu-Ode, Ijebu-Igbo, the Egbas, the Remos, the Ibarapas, Oyo, Iwo, Ikire, among others.

The capital of Oyo State, Ibadan, is located in the south-eastern region of Oyo State in southwest Nigeria, approximately 119 kilometers (74 miles) northeast of Lagos

and 120 kilometers (75 miles) east of the country's international border with the Republic of Benin (Tomori, 2019). At 3,080 square kilometers (1,190 square miles), it is the largest city in Nigeria after Bauchi, Lagos and Kano, and is situated where the forest and savannah converge.

Table 1: Extent of Built-up Area (km^2)

Year	Extent of Built-up Area (km^2)	Total area (km^2)	Percentage (%)	
1972	119.351	3244.246	3.68	
1982	219.901	3244.246	6.78	
1992	607.405	3244.246	18.72	
2002	948.388	3244.246	29.23	
2012	1212.18	3244.246	37.36	
2022	1392.72	3244.246	42.93	
Year	**Rate of Change (km^2)**	**Rate of Change (%)**	**Annual Rate km^2**	**%**
1972 – 1982	100.55	8.66	10.055	0.87
1982 – 1992	387.504	50.00	38.750	5.00
1992 – 2002	340.983	27.54	34.098	2.75
2002 – 2012	263.792	49.86	26.379	4.99
2012 – 2022	180.54	50.00	18.054	5.00

Source: Author's Computation, 2022

Figure 1 displays the location of Oyo State within the context of Nigeria. Out of the 33 LGAs in Oyo state, Ibadan metropolitan area covers 11 LGAs consisting of five urban and six sub-urban LGAs (see figure 2). The urban LGAs consist of Ibadan North, Ibadan North East, Ibadan North West, Ibadan South East and Ibadan South West. Sub-urban LGAs include Akinyele, Ido, Oluyole, Ona-Ara, Egbeda and Lagelu. Figures 3 however showcases the major settlements in the study area.

The sub-urban LGAs can be thought of as a transitional area where urban and rural land uses coexist and suburban growth is occurring. Both "urban/rural vacators" and "native stayers" locate homes there. Residential neighborhoods are varied and, in most instances, physical improvements are not planned and basic infrastructural amenities and utility services are absent. The majority of the roads that connect the different neighborhoods in this LGA lack proper drainage channels, which makes transportation momentarily challenging during rainy seasons. The physical expansion of the city into formerly rural areas of these LGAs is changing the way people live and use their land. Expansion of residential building is most rapid in these LGAs. The importance of informal economy in these places reflects in the proliferation of informal housing units. Development of self-help housing, which is also known as incremental housing, is prevalent. Because most of the roads connecting the many areas in this LGA lack proper drainage channels, movement becomes temporarily challenging during wet seasons. The way people live and use their property is changing as a result of the city's physical expansion into these traditionally rural LGAs

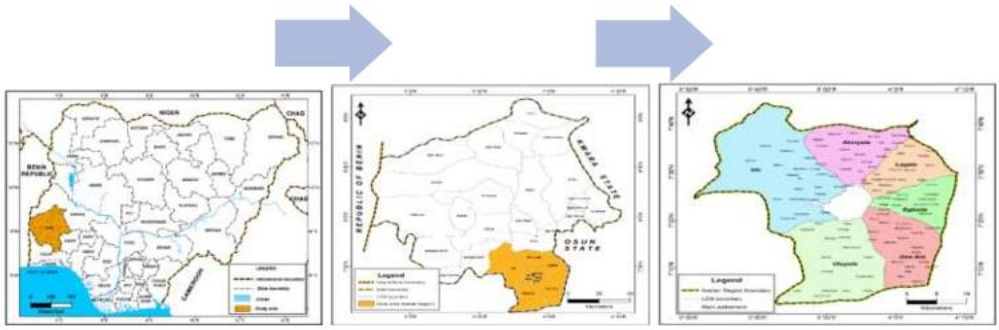


Figure 1: Oyo State in the Context of Nigeria **Figure 2: Sub-Urban LGAs in the Context of Oyo State** **Figure 3: Major Neighbourhoods in the Sub-Urban LGAs**

Source: Department of Geography, University of Ibadan, 2022

3.2 Methodology

A multi-stage sampling strategy was used to administer the household questionnaire because it was not feasible to conduct a comprehensive survey of all buildings in the study area due to time and resource constraints. The first step was to identify the six LGAs that currently make up the basic primary sampling unit in the sub-urban interface of Ibadan Metropolis: Akinyele, Egbeda, Ido, Lagelu, Oluyole, and Ona-Ara LGA. The second step involved using a purposive sampling technique to choose two suburbs from each of the six LGAs . The third stage, the researcher systematically selected appropriate number of household heads from each of the selected streets.

Meanwhile, the boundaries of each of the sub-urban local government were delineated using cadastral maps. The number of incremental residential building in the selected suburbs were determined at the third stage using records obtained from Landlords Associations obtained from each of the local government area and complimented with ground trothing. A total of 1,038 incremental buildings were randomly selected from 4,152 in 12 neighbourhoods out of 124 identified by Oyo State Ministry of Lands, Housing, and Urban Development (OSMLHUD). This constituted sample size for the study (see table 2).

Table 2: Sample Size

LGA	First Neighbourhood Selected	No. of Buildings	No. of Incremental Buildings	Sample Size (20%)	Second Neighbourhood Selected	No. of Buildings	No. of Incremental Housing Units	Sample Size (20%)	Total
Egbeda	Adegbayi	1,563	416	104	Egbeda	1243	276	69	173
Ido	Apete	2,026	464	116	Ido	1118	308	77	194
Akinyele	Moniya	1327	344	86	Aroro	1119	232	58	144
Ona-Ara	Idi-Osan	1,512	452	113	Akanran	909	300	75	188
Oluyole	Arapaja	1,631	480	120	Ayegun	1288	324	81	202
Lagelu	Iyana Church	1,222	316	79	Iyana –Offa	815	240	60	137
Grand Total		9,281	2,472	618		6,492	1,672	420	1,038

Source: Author's compilation, 2022

Meanwhile, primary data were sourced through direct observation, questionnaire administration, in-depth interview and focus group discussion. In order to collect relevant primary data using non-contextual methodology, household head questionnaire was used to collect relevant information that enabled the researcher to assess the main determinants of incremental housing development. The secondary sources of data for this study include an extensive review of the literature. Published materials such as textbooks, journals, and newspapers as well as the publications of various organisations on housing, physical planning and environmental issues were consulted. Necessary planning, academic and consultancy reports on environmental issues and housing from national and international agencies, universities and other institutions of research were also used where necessary.

Also, unpublished materials such as Thesis, dissertations, technical reports on housing and environmental related agencies as well as academic and consultancy reports on housing from national and international agencies, universities and other institutions of research were also consulted for additional secondary data. Data on Certificate of Occupancy (C of O) and building plan approval were sourced from the Oyo State Ministry of Lands, Housing and Urban Development.

4.0 Results and Discussion

4.1 Socio-Economic Attributes of the Respondents

Age distribution of the household head clearly revealed that 36.0 per cent of the household head were within the age bracket of 51-60 years, 22.1 per cent claimed to be within the age bracket of 41-50 years, whereas 19.7 per cent of them claimed to be within the age 61-70 years. Also 13.8 per cent of them were within the age of 31-40 years and 4.7 per cent of the respondents claimed to be within the age bracket of 21-30 years. The dominance of the age bracket, 51-60 years might not be unconnected with the fact that these are those grouped of people that see incremental housing development as a panacea for solving their housing. With respect to the literacy level of the respondent, 30.5 per cent of the respondents claimed to have Secondary/Technical/Grade II certificates, 26.2 per cent claimed to have completed Primary School or Standard VI. Also 11.1 per cent of them claimed not to have formal education, 6.9 per cent of the respondents claimed to have post-secondary school certificate and 5.1 per cent had Qur'anic education only. For most of the respondents who lacked formal education, the interviewers read and interpreted the contents of the questionnaire to the respondents in an indigenous language. In terms of monthly household head gross income, the majority of incremental housing developers (38.2%) reported receiving between N31,000 and N50,000, 25.5% reported earning less than N30,000, and 24.2% reported earning between N51,000 and N100,000. In contrast, 6.5% and 5.6% of respondents reported earning between N200,000 and N101,000-N150,000, respectively.

According to this distribution, most developers of additional housing units are low-income individuals, which is why the bulk of them end up constructing homes on stages. Majority of the households (48.5%) claimed to have 5-10 members, 16-20 (38.4%), 11-15 (4.8%) and 16-20 (4.9%). This is an indication that the study area does have large

household size per building (without recourse to the number of rooms per building), this is a serious concern for physical planning as high occupancy ration can lead to

Table 3: Socio-Economic Characteristics of the Respondents

Age Group of Respondents	No of Respondents	Per cent
21 – 30	49	4.7
31 – 40	143	13.8
41 – 50	229	22.1
51 – 60	374	36.0
61 – 70	205	19.7
70 and above	35	3.4
Total	1038	100.0
Highest Level of Education of Respondents	No of Respondents	Per cent
No formal education	115	11.1
Qur'anic education only	53	5.1
Incomplete Primary School	176	17.0
Complete Primary/Standard 6	272	26.2
Secondary/Technical/Grade II	317	30.5
Tertiary Education	72	6.9
Others	33	3.2
Total	1038	100.0
Gross income of household head per month	No of Respondents	Per cent
Below #30,000	265	25.5
#31,000- 50,000	397	38.2
#51,000-#100,000	251	24.2
#101,000-#150,000	58	5.6
#200,000 and above	67	6.5
Total	1038	100.0
Size of household (Persons)	No of Respondents	Per cent
2-5	399	38.4
5-10	503	48.5
11-15	50	4.8
16-20	51	4.9
Above 25	33	3.2
Total	1038	100.0
Length of stay in the house	No of Respondents	Per cent
Less than 10 years	138	13.3
11-20 years	361	34.8
21-30 years	408	39.3
31-40 years	76	7.3
Above 40 years	47	4.5
Total	1038	100.0

Source: Field Survey, 2023.

overcrowding, increased pressure on local services such as health, education and waste management. Other physical planning implications of large household size per building include reduced environmental quality, increased risks of disease transmission and reduced quality of life.

Table 3 reveals that most of the respondents (39.3%) had been occupying their present housing units for the past 20 to 30 years or more, only 13.3 per cent residents claimed that they move to their present houses in less than 10 years ago, 11-20 years (34.8%), 31-40 years (7.3%) and above 40 years (4.6%). This distribution indicates that vast majority of the respondents have stayed more than 10 years in the area, hence they do have a good knowledge of what is obtainable in incremental housing development in the study area.

4.2 Housing Condition and Complimentary Facilities

To assess the physical look of the chosen incremental dwellings, a wall finishing inquiry was conducted. The results show that 62.5% of the buildings had neither external painting nor plastering (Table 4). Nevertheless, just 31.4% of the buildings were plastered, whilst only 6.1% of the incremental housing evaluated had both plastering and painting. This supports the claim made by Alabi *et al.* (2021), that plastering and painting buildings in Africa are done specifically for concrete protection and ornamentation, respectively. This finding suggests that the incremental developers consider housing to be nothing more than a place to live.

An investigation into the roof finishing of incremental housing units sampled revealed that 52.4 per cent of the housing units have changed colour, while 27.8 per cent had rusting and minor sagging while 3.5 per cent are rust, leaky, sagging and removal. However, only 16.5 of the housing unit exhibited neat paint and no sagging. Plate 4.2 shows roof finishing of a typical incremental housing unit. Building roofs must undergo routine inspection in order to identify minor concerns before they become serious ones. The main building will show sign of deterioration when the roofing structure is at the state of despair, and the most of the time this does not happen suddenly but rather gradually, which is why the building structure needs to be closely monitored (Adu-Gyamfi, 2021). Unfortunately, the roofs of many incremental housing units in the study area are neglected, showing signs of deterioration that are typified by color changes, rust, and occasional leaks. According to Adu-Gyamfi (2021) housing condition can be classified into four major groups namely:

i. No Damage: This is a desirable condition that the building should be at any point in time. This is only achievable through regular maintenance of the housing unit.
ii. Low Damage: This is a minor deficiency that may not hamper the functionality of a housing unit. This is characterised by angular crack of <5mm in width.
iii. Moderate Damage: This is a significant deficiency in housing unit. However, if such defect is not amended, it may constitute a direct threat to the health and life of the occupants. This is represented by angular crack of 5-15mm.
iv. Severe Damage: This is a critical housing condition that is unsafe for human habitation. This is typified by the angular crack of >15mm.

Table 4: Complimentary Facilities of Incremental Housing

Stages of Housing Developed	No of Buildings	Per cent
Core	582	56.1
Expanded	232	22.3
Consolidated	224	21.6
Total		100.0
Wall Finishing	No of Buildings	Per cent
Not Plastered	649	62.5
Plastered	326	31.4
Plastered and painted	63	6.1
Total	1038	100.0
Roof Finishing	No of Buildings	Per cent
Neat paint, No sagging	169	16.3
Change Colour	544	52.4
Rusting and minor sagging	289	27.8
Rust, leaky, sagging and removal	36	3.5
Total	1038	100.0
Housing Condition		
No damage	38	3.7
Low damage	188	18.1
Moderate damage	306	29.5
Severe damage	506	48.7
Total	1038	100.0

Source: Field Survey, 2023.

Also, Plate 1 and Plate 2 depict wall finishing and roof conditions of sampled incremental housing units respectively. Field observation reveals that housing units with cracks, mouldy and damp wall which typifies severe damage constitutes 48.7 per cent, moderate damage represents 29.5 per cent while incremental housing units with no damage represents a meagre 3.7 per cent.



Plate 1: Wall Finishing of a Typical Incremental Housing Units at Adegbayi, Egbeda LGA



Plate 2: Roof Condition of a typical Incremental Housing Unit at Ayegun, Oluyole L.G.A

Source: Author's Fieldwork, 2023

4.3 Factors Responsible for Occupation of Housing Units before Completion

An investigation into factors restraining the respondents from completing their house before occupation shows that the majority (46.7 per cent) of the incremental housing developers attributed it to lack of funds, 40.8 per cent to the high cost of building materials, while 6.8 per cent and 3.6 per cent of the respondents attributed the factors to maltreatment from the landlord and family pressure, respectively (Table 5). An indication that the financial factor is the main problems that restrict developers of incremental housing to complete their respective houses before they occupy such houses. This validates the focus group discussion, during which a discussant said that *"everybody needs adequate housing, but inadequate funds are the major bane to their desire"* (FGD, Secretary Landlords Association, 3 years, August 4, 2023).

Table 5: Factors Responsible for Occupation of Housing Units before Completion

Factors	No of Respondents	Per cent
Lack of funds	506	46.7
High cost of building materials	424	40.8
Maltreatment from the landlord	71	6.8
Family pressure	37	3.6
Total	1038	100.0

Source: Field Survey, 2023

4.4 Non-Compliance with Physical Planning Standards

According to Michael et al. (2023), despite the existence of numerous physical planning standards as a magic bullet to encourage the expansion of human settlement in an orderly manner, incremental housing development does not comply with these regulations because builders are not well-informed about the measures that are already in place, they do not want to incur additional costs, avoid unnecessary formalities, the permit acquisition process is bureaucratic, and city authorities do not strictly enforce the regulations. A key informant in the Oyo State Ministry provides the following account:

> *"They simply circumvent the law by breaking it, mostly by squatting in large numbers, building illegally, and frequently by breaking building codes. Unfortunately, widespread violations of these laws result in the development of new slum areas, which are thought to be dangerous* and unhealthy for the *people living there. Paradoxically, the issue appears to be straightforward. Because there is a huge disparity* between their resources and *what is needed to create* a *typical* house, the people *desire* to build but *are unable* to *do it* in *accordance with* the minimum building *regulations. On the other hand,* the government to whom they pay *taxes is unable to provide* housing subsidies to *reduce* this *disparity* for a *number of reasons. However, challenges for enforcing compliance with physical planning standards include limited funding, insufficient personnel, and inadequate equipment". (KII,* Director, Development Control, 29 years, 2023).

They simply circumvent the law by breaking it, mostly through illegal construction and mass squatting, and most of the time, However, in 1981, the then-local

government commissioner in charge of planning gave the order not to demolish any structure that was still under construction and had broken a building rule but had not been discovered until it reached the lintel level. This was viewed by many as a means of avoiding the difficulties of getting the authorities to approve the proposal. The majority would gather the required materials by Friday afternoon, the official end of the day, at the latest, and then start construction on the house. By Sunday evening, the house would have reached the lintel level and would not be subject to the planning authority's authority. This persisted until 1983, and the politicisation of the state's building regulations is largely to blame for the chaotic growth seen in the majority of Ibadan's sub-urban LGAs. It has been challenging for succeeding governments to correct this error.

One of the discussants in a Focus Group Discussion (FGD) on challenges in complying with physical planning standards in Sub-urban local government areas of Ibadan, opined that

> *"We don't even know what the standards are. Nobody has told us what we need to do to build our houses according to the law"* (FGD, Ex-Officio Member, Landlords Association, 5 years, August 11, 2023)

while another discussant reiterates that "*The cost of complying with the standards is too high. We can't afford to hire professionals to design and supervise our building projects.*

(FGD, Chairman, Landlords Association, 5 years, August 11, 2023)

4.5 Existing Physical Planning Standards on Residential Buildings

Spaces standards usually make available normal criteria for assessing town development and it is often mostly used as yardstick to measure their level of compliance with physical planning regulations (Asibey, 2023). Tables 7 showcases space/plot area, plot coverage and set-back for residential buildings and existing physical planning standards on residential buildings in Oyo State.

Table 7: Existing Physical Planning Standards on Residential Buildings in Oyo State

S/N	Plot Density	Plot size and Area		Maximum plot coverage in %	Front (m)	Rear (m)	Left side (m)	Right side (m)
		Plot size	Plot Area (m^2)					
1	Low Density	30.00 x 36.00	1080.0	35	6.0	3.0	4.5	4.5
2	Medium Density	24.38 x 30.00	720.0	40	6.0	3.0	3.0	3.0
3	High Density	18.00 x 30.00	540.0	45	4.5	3.0	3.0	3.0

Source: Oyo State Bureau of Physical Planning and Urban Development, 2019

4.6 Planning Standards Being Violated by the Developers

Table 8 shows the various aspects of planning standards being violated by the developers of incremental housing units. The study reveals that 26.1 per cent of respondents violated planning standards in all ramifications while 22.9 per cent of them violated plot coverage standards, 15.8 per cent of them violated planning standards that are related to setbacks from property boundaries, setback from centre line (10.5%) and plot sizes (11.6%). Also, 8.2 per cent of the developers violated the floor area ratio standards. The remaining 5.8 per cent of the respondents were those respondents that did not comply with planning standard relating to height of building. This confirmed the assertion that most of the incremental housing units built in the sub-urban local government areas of Ibadan metropolis constitute what can be termed as slum or informal development as testified by Popoola *et al* (2015). This connotes that most of the incremental housing developers do not abide by planning regulations and standards when constructing their houses (Lawanson *et al,* 2012).

Table 8: Aspect of Planning Standards Being Violated by the Developers

Aspects of planning standard violated	Expected Planning Standard	No of Respondents	Per cent
Setback from centre line	12m	109	10.5
Setback from property boundaries	6m/3m/3m	164	15.8
Floor Area Ratio	1:2	85	8.2
Plot coverage	45%	238	22.9
Plot size	540m^2	111	10.7
Height of building	5m	60	5.8
All ramifications	All of the above	271	26.1
Total		1038	100.0

Source: Fieldwork, 2023.

4.7 Reasons for Non-Compliance with Physical Planning standards

Table 9 showcases the reasons for non-compliance with physical planning standards by respondents include lack of awareness (18.4%) as most property owners claimed not be aware of the planning regulations and standards applicable to their properties. Financial constraints were cited as a contributing factor by 22.6% of respondents because it can be expensive to comply with planning regulations and property owners do not have the funds to make the required adjustments. On the other hand, property owners may violate planning regulations if they are not adequately enforced (13.3). Corruption was responsible for 26.7% since it can result in non-compliance because property owners may buy off officials to ignore infractions, and planning standards can be complicated and hard to understand, which can cause inadvertent non-compliance to physical planning standards (13.6%).

Table 9: Reasons for Non-Compliance with Physical Planning standards

Reasons	No of Respondents	Percent
Lack of awareness	191	18.4
Financial constraints	235	22.6
Resistance to change	54	5.2
Inadequate enforcement	140	13.5
Corruption	277	26.7
Complexity of regulations	141	13.6
Total	1038	100.0

Source: Fieldwork, 2023.

4.8 Hypothesis Testing

In order to test the null hypothesis which states that "compliance of incremental housing is a function of owner's income, age, educational status and level of awareness". A multinomial regression model was applied. The model estimates the probability of each compliance category (compliant, partially compliant and non-compliant) based on the independent variables. Compliance status of incremental housing development using five predictors namely income, education, location, awareness and housing type. Model fit otherwise known as Goodness-of-fit test obtained as p-value = 0.012 with Pseudo-R-squared = 0.351.

Therefore, higher income is linked to lower probabilities of being somewhat compliant (OR = 0.56) and compliant (OR = 0.87), according to Table 10, higher education is linked to higher probabilities of partial compliance (OR = 1.27) and compliance (OR = 1.94). The probabilities of being fully compliant (OR = 1.43) but not partially compliant (OR = 1.01) are higher with age. Increased probabilities of being somewhat compliant (OR = 1.83) and complying (OR = 2.51) are linked to high awareness of planning requirements. Meaning that income of household head, educational attainment of incremental housing owner, age of household head and awareness of planning regulations are good predictors of compliance of incremental housing with planning standards. This output provides insights into the relationships between the predictors and the compliance of incremental housing development. The analysis assists to understand the factors that are associated with different levels of compliance and inform policy intervention to improve compliance.

Table 10: Regression Coefficients

Predictor	Compliant vs. Non-Compliant	Partially Compliant vs. Non-Compliant
Income (High vs. Low)	0.87 (0.43, 1.75)	0.56 (0.27, 1.15)
Education (Tertiary vs. Primary)	1.94 (1.23, 3.06	1.27 (0.81, 2.01)
Age(<40years vs. >40 years	1.43 (0.93, 2.20)	1.01 (0.65, 1.58)
Awareness (Yes vs. No)	| 2.51 (1.63, 3.87)	1.83 (1.15, 2.92)

Source: Fieldwork, 2023

5.0 Conclusion and Recommendations

Shelters built using the incremental housing development technique are gradually enhanced in size and quality over time. This kind of construction process varies according to the size of the family, individual household priorities, and available income. It is thought to be the method by which low-income households gradually increase their housing expenditures as their income allows. The extremely sluggish development process and the resulting insufficient homes for low-income groups are two effects of incremental housing production. Despite the challenges and limitations that come with this type of house development, incremental housing is present practically everywhere in the suburban region and the rate of production is rising.

With a set of straightforward indicators for tracking the gradual construction of homes in Africa, the chapter has been able to address the research's policy implications as a useful tool for planners, policymakers, environmentalists, and development program managers. Useful suggestions for enabling tools include regularising tenure, making it easier for the impoverished to obtain housing finance, providing infrastructure, establishing the building sector, and offering an institutional framework for organising and overseeing different phases of the incremental housing development.

Improving land access, providing low-income earners with security of tenure, expediting the approval of building plans, supplying infrastructure services and promoting new residential development, implementing efficient housing finance policies and mechanisms, and sourcing building materials locally to support affordable housing are some of the strategies for creating an environment that is conducive to housing development.

Recommendations made by residents for sustainable housing delivery include building house of choice within the income earned, regulations of the activities of land owners and sellers, reduction in cost of building materials, easy acquisition of loan from government, and effective development control. Government intervention through facilitating quick approval of building plan, enforcement of Land Grabbing Act and provision of infrastructure services are few of the factors opined by residents as sustainability of the recommendation.

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