

# **Typological Analysis of Housing Development in Lagos Peri-urban Settlements**

**Adedire, F. M.<sup>1</sup> and Iweka, A. C. O.<sup>2</sup>**

<sup>1&2</sup> Department of Architecture, University of Lagos, Lagos, Nigeria

## **Abstract**

The research examined the typological analysis of housing development in the peri-urban settlements of Lagos State, Nigeria. Case study methodology was adopted using random sampling to select housing developments, under different housing initiatives, in purposively selected peri-urban settlements in Ibeju-Lekki Local Government Areas of Lagos State. Primary data were sourced from survey questionnaires, direct observations and in-depth interviews administered to household heads in the case study area. Data analysis was done using descriptive statistics to generate frequencies, percentages, cross tabulations of the variables. Findings show different housing typologies under three categories; owner-occupied, part-rental and full-rental housing. Housing typologies in the study area were influenced by different housing initiatives, and the socio-economic attributes of the residents which revealed a heterogeneous mix of the population in terms of culture, literacy level and household size. It is recommended that the residents' socio-demography should be put into consideration in building typology designs to enhance effective user performance in peri-urban housing development under different housing development schemes in Lagos State.

**Keywords:** *Peri-urban; housing typology; architecture; socio-demography; housing initiatives.*

## Introduction

Housing typologies in the emerging peri-urban settlements in Lagos, Nigeria is a product of many factors often not perfectly meeting the required needs of the end users. The complexity of the different actors in the peri-urban is giving rise to a new urbanism which if not controlled may lead to poor housing performance in the region. Presently, Lagos peri-urban plays significant role of housing a great percentage of urban population. Different housing initiatives are emerging with diverse housing architecture, mostly unsustainable designs. Government participation in housing is perceived to be ill-conceived because post occupancy evaluations have proven most housing typologies adopted failing to meet the users' needs (Ibem *et al.*, 2013).

The motive behind each development scheme would inform the typology of housing to be adopted. The predominant housing development in the peri-urban is executed under self-help housing which leaves design within the control of the households. Rising demand for housing and increased preference for single family houses is the major driver of self-help housing development in peri-urban settlements in developing countries (Gough and Yankson, 2000). Individual household

take responsibility for the construction of their housing units and associated with most self-help housing development is non-customized and standardised architectural designs which impact on the typology (Bangdome-Dery *et al.*, 2014). Non-Marxist/Liberal Housing Theory recognises that the major function of housing in a community is affected by the residents. Family financial status is key in the housing typology to be adopted. This is the premises for self-help housing development in most peri-urban (Tunstall *et al.*, 2013).

The private developer-led housing development is unique because it is formally regulated and is predominantly occupied by middle class and higher income migrants from the city centres (Simon, 2008). According to Marxist or radical theory, housing is seen as a use of value and exchange and a product whose consumption can only be realized by those with a housing need and those who can afford it. However, it encourages and fosters the exploitation by bodies like private developer often engaging in mostly unaffordable and unsuitable housing typologies for the low and middle income group. This theory is the basis for profit driven housing development by private developers in the peri-urban of Lagos. The state-led housing development

comes in the form of state intervention through industrial and housing development, and also to drive the growth of the suburb. Positive theory advocacy is what drives government-led housing. It emphasizes the role of housing quality as being factored by suppliers. It defines housing as an item of consumption to be supplied by government authorities. Housing is seen as socio-economic and environmental dimensions. Family and individuals economic status is factored into the design of housing typologies. Family economic status determines the course of improvement of the housing units, which play a major role in the operation of the housing market for various levels of social groups (Waziri & Roosli, 2013).

Prior studies on housing typologies have been limited to urban Lagos and none have investigated the factors influencing housing typologies in the emerging Lagos peri-urban settlements. Understanding of the relationship between residents' socio-demography, housing initiative and housing relationship is needed in policy design of peri-urban housing development to achieve residents' satisfaction. Therefore this study aims at analysing the typologies of housing in Lagos peri-urban and specifically seek to investigate the factors to be put into

consideration in achieving sustainable housing design and development.

### **Literature Review**

According to Isa & Jusan (2012), housing is a building structure that human lives for meeting shelter and social needs. Housing theories relate to Marxism, Radicalism and Liberalism. It is based on ideology and identity (Nassar, 2013). It is the social and spatial process in which building types are considered to be the convergence of social relation and spatial practices. There are three views to housing theories according to Soliman (2004). They are the Marxist theory or radical theory, Non-Marxist or Liberal theory and Positive theory. Under Marxist or radical theory, housing is seen in a capitalist social formation interest. It sees land as a precondition for housing production.

Non-Marxist/Liberal Housing Theory sees housing as one of the basic components that go into the movement of development due to the elements, materials and services. This theory believes that housing is among the basic components that go into the movement of development, due to the elements, material, and services which actively relate to different activities; whether in industry, manufacturing, or services, as with various building materials, like iron, cement and

timber; or infrastructure services, road networks and transportation (Tunstall *et al.*, 2013). Financial capacity is key. However, Positive Theory relates housing as socio-economic and environmental dimensions. Furthermore, family and individuals economic status is basic factors for determining housing priorities. Consequently, family economic status determines the course of improvement of the housing units and ultimately which play a major role in the mechanisms of the housing market for various levels of social groups (Waziri & Roosli, 2013).

Housing typologies refer to the distillation and classification of existing building types and urban forms in term of social function and spatial efficiency (Keyes, 2010). Housing typology defines members of the same household. It has evolved with technological innovations like the rise in the use of automobile and emergence of industrial building components. It changes according to the needs of the developers (Law *et al.*; 2008). Housing typology is based on need, scale, style and location. The patterns of housing investment, housing form, community services, settlement density and morphology are relevant to the growth and pattern of peri-urban development. Housing classification is

determined by society, affordability and legality in form of government-led, private development-led and self-help housing. Housing in the peri-urban exists under three types of initiative and governance; self-built housing development, private developer - led housing and state-led housing development (Shen & Wu, 2013).

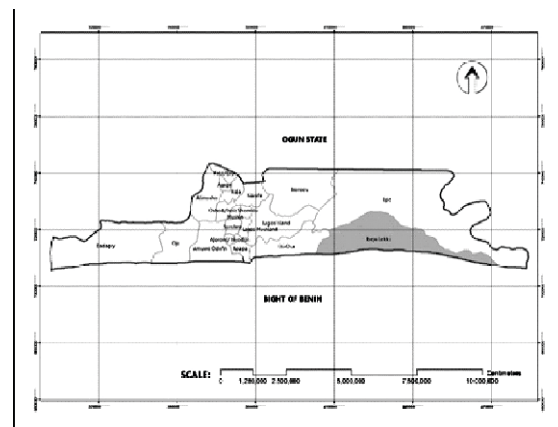
Housing typologies in the peri-urban in terms of socio-spatial attributes are classified into commodity housing, single family house and middle rise buildings. Each type of housing is dominated by different types of neighborhood. The commodity housing has co-renting as its unique attributes and serves the poor migrants. It is called rooming apartment and it is characterised by one apartment subdivided into many bedrooms. Further notable classification of peri-urban housing typologies are single family bungalow, semidetached bungalow, rooming house, storied apartment building and duplex (Olotuah, 2006). Considering household size, the floor space per person for living and working is the primary determinants of housing typology (Ravetz, *et al.*, 2013). Investigation by Binns, Maconachie, & Tanko (2003) on housing typologies in peri-urban of northern Nigerian cities are rooming house, detached

house, compound houses and blocks of flats. Rooming house is common to serve low income earners. It is adopted because of ease of design, low cost on construction and high return from rental.

Socio economic status has great influence on the housing typology. It is notably affected by income status of the residents. Socio-cultural diversity and the socio-economic characteristics of the residents greatly influence the physical characteristics of housing development in the peri-urban. Housing development in the peri-urban calls for consideration of the socio-economic attributes of the different income groups of the migrants but this is not the case in most peri-urban housing developments (Shen & Wu, 2013). Differentiating factors between the peri-urban resident groups could be through either socio economic factors, personal motivation for housing, housing choices preference and the resulting spatial differentiation. Non migrant groups are mostly home owners regardless of socio economic status. Rural migrants constitutes the root of rental housing in the peri-urban. This class of people eventually settles in low cost private rental houses in the peri-urban (Wu and Zhang, 2012).

### The Study Area and Scope of Study

Ibeju-Lekki Local Government Area is the selected case study area for this study. Ibeju-Lekki as shown in Figure 1 is one of the four Local governments outside Lagos metropolitan region. Within the past ten years, housing development has been on the increase to accommodate the overspill from central Lagos. The socio-demography comprise of multi-cultural and reasonably literate population. It has a land area of about 646 kilometers square which equals one quarter of the total land mass of Lagos state. Ibeju-Lekki had a population of 117,481 out of Lagos State's total of 9,113,605 according to the National population Commission (2006) census. The sample frame constitutes the existing housing units in peri-urban settlements in Ibeju-Lekki.



**Figure 1:** Map of Lagos State showing Ibeju-Lekki.

**Source:** Field Survey (2016).

### **Methodology**

The case study approach was applied by conducting a field survey of housing developments executed under different initiatives in the study area. Both qualitative and quantitative data were used. Quantitative data were extracted from the questionnaire instrument administered to household heads of randomly selected housing units in purposively selected 16 settlements in Ibeju-Lekki. Among the 370 questionnaires administered, total of 366 good and completed questionnaires were retrieved from the study area. Badly completed questionnaires were regarded as missing system in the analysis.

The questionnaires were administered mostly during the weekend to ensure a high response rate. Descriptive analysis was conducted on the data to generate percentages and frequencies of respondents' socio-demography, housing initiatives, housing typologies. Test of correlation was conducted to determine the factors influencing housing typologies in the study area. Data analysis for this study was carried

out using the Statistical Package for Social Sciences (SPSS) version 22 for windows for statistical analysis of the quantitative data.

### **Findings and Discussion**

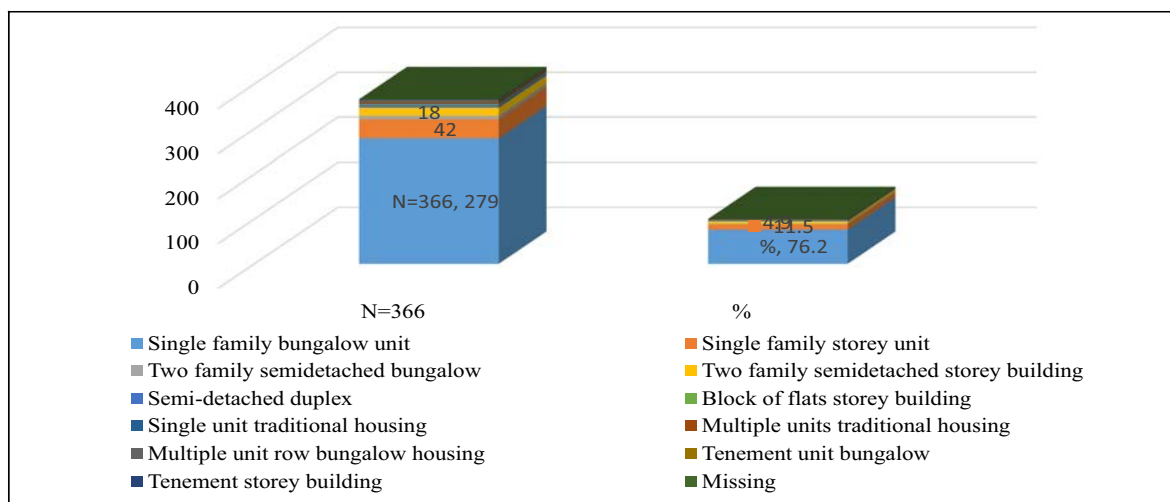
#### ***Characteristics of Housing Typologies in the Study Area***

Housing typologies in this study is discussed based on architectural typologies, occupancy, initiatives, units of household per building and the number of rooms per household. Analysis of the field survey presented in Table 1 shows the basic housing typologies identified in the study area. The three commonest housing types in the peri-urban are the single family bungalow unit which constitutes about 76.2%. The single storey family unit (11.5%) and two family detached storey building (4.9%). Other less prominent housing types are two family semidetached bungalow (2.2%), semidetached duplex (1.6%), multiple units traditional housing (1.1%), multiple unit bungalow row housing(1.1%), storey block of flats, single unit traditional housing(0.3%) and tenement storey building (0.3%).

**Table 1: Housing typologies in the study area.**

| Housing Typology                          | N=366 | %    |
|---|-------|------|
| Single family bungalow unit               | 279   | 76.2 |
| Single family storey unit                 | 42    | 11.5 |
| Two families semidetached bungalow        | 8     | 2.2  |
| Two families semidetached storey building | 18    | 4.9  |
| Semi-detached duplex                      | 6     | 1.6  |
| Block of flats storey building            | 2     | 0.5  |
| Single unit traditional housing           | 1     | 0.3  |
| Multiple units traditional housing        | 4     | 1.1  |
| Multiple unit row bungalow housing        | 4     | 1.1  |
| Tenement unit bungalow                    | 0     | 0    |
| Tenement storey building                  | 1     | 0.3  |
| Missing                                   | 1     | 0.3  |

Source: Field survey (2017).

**Figure 2: Housing typologies in the study area**

### The Generic Classes and Types of Peri-Urban Housing Developments in the Study Area

Three classes of housing development were identified in the study area. They are full family occupation, part family/part rented occupation and rental housing. Each class

has different types of housing attached and also specific socio-spatial characteristics.

#### *Full Family Occupation*

Single family bungalow unit (Figure 3), is the most prevalent in both Ibeju-Lekki peri-urban settlements. It is predominantly

owner occupied and not part rented. Analysis of the questionnaire shows the prevalence of this housing typology among the low income group, the Yoruba ethnic group, age group of 45-56 years and household size of 3-5 persons. Some housing units are also single storey family housing (Figure 4 and 5) and a wholly owner occupier especially among the polygamous families in the peri-urban. The single unit traditional housing is the regular housing unit among the natives built to be lived in by all extended families and usually with poor quality building materials.

#### ***Part Family Occupation/Part Rented***

The two families' semidetached bungalow housing (Figure 10) in the peri-urban is partly owner occupied and partly rented out. Part of the building is usually occupied by the owner while the other wing of the bungalow is rented out for investment purpose and also often for security purpose in areas of the peri-urban that are far from the active areas. Two families' semidetached storey housing unit (Figure 6 and 7), is like the two families semidetached but different in that it is storey. The owners usually occupy one unit of the whole housing while the other wing is rented out.

The semidetached duplex housing unit

(Figure 8 and 9) is a two winged duplex buildings in which one is owner occupied and the other rented out. It is common in developer-led housing and also among the middle income earners. Multiple units' traditional housing is built by association of extended family members, often having part rented out while another will be occupied by the natives. It is rather an inheritance housing in the peri-urban of Ibeju-Lekki.

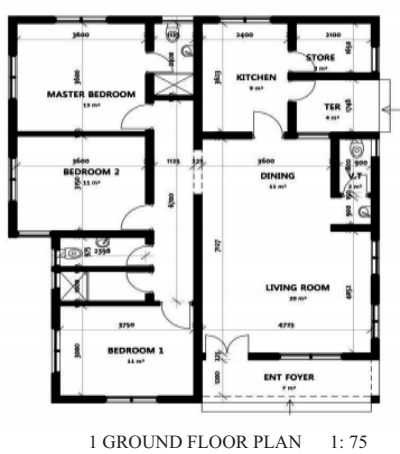
#### ***Rental Housing***

Block of flats storey housing (Figure 14) is a multi-family housing built mostly and purposely for profit and mostly not occupied by the owners. Tenement bungalow unit, commodity housing (Figure 11) is a single unit rental housing, sharing common sanitary facilities and built purposely for low income and the poor. Tenement storey building (Figure 12 and 13) is a bigger form of tenement housing, it has a ground and first floor but each floor has rows of sanitary facilities communally shared.

Finally, multiple unit row housing (bungalow) consists of many households units on the same parcel of large lands built for rental purpose and not for the owner occupier.

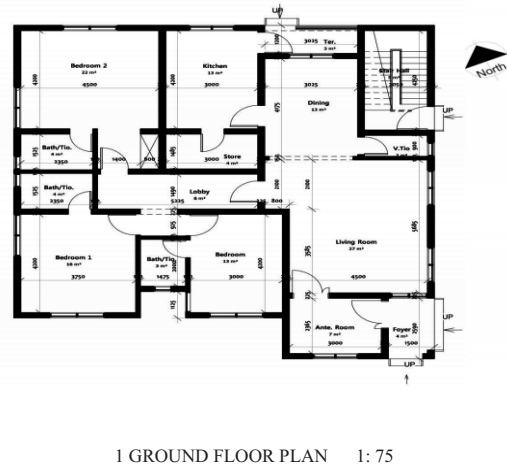


**Architectural Design Typologies in the Study Area**  
*Class A. Full Family Occupation*



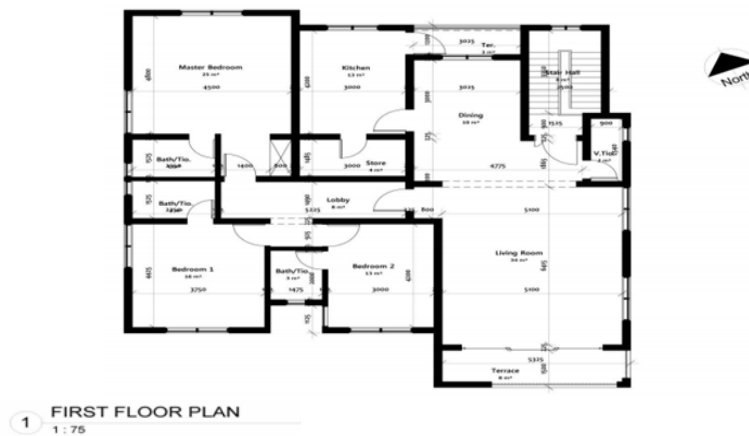
**Figure 3 (Type 1):** Typical floor plan of a single family bungalow housing in the study area.

Source: Field work (2017).



**Figure 4 (Type 2):** Typical Ground floor plan of a single storey family housing unit in the study area.

Source: Field work (2017).



**Figure 5 (Type 2):** Typical First floor plan of a single storey family housing unit in the study area.

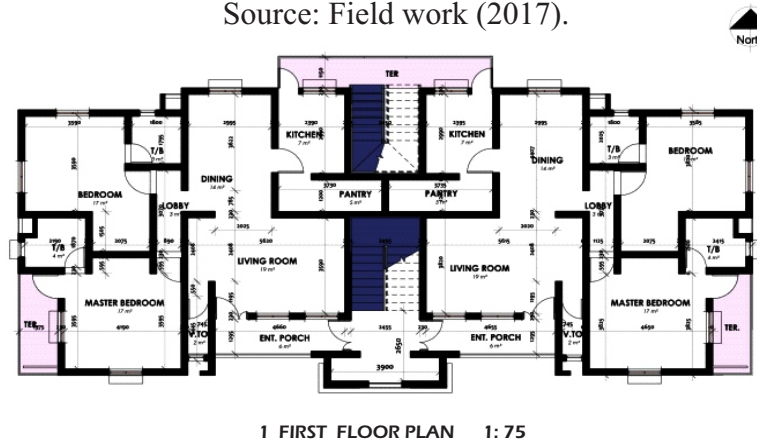
Source: Field work (2017).

*Class B. Part family occupation/part rented.*



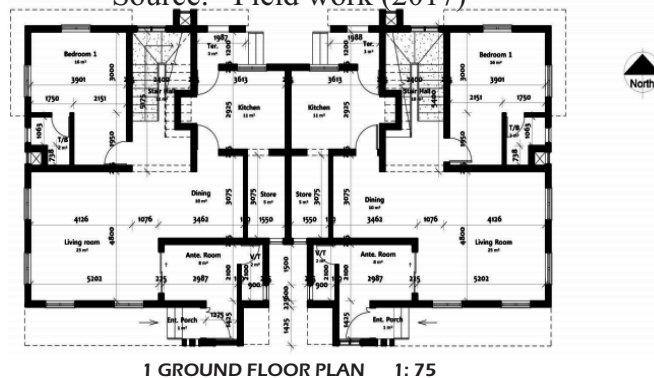
**Figure 6 (Type 3):** Typical ground floor plan of a two families' semidetached storey housing unit in the study area.

Source: Field work (2017).



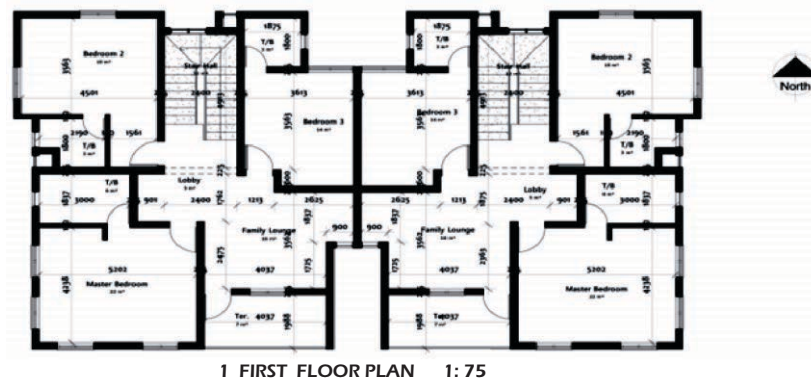
**Figure 7 (Type 3):** Typical first floor plan of two families' semidetached storey housing unit in the study area.

Source: Field work (2017)

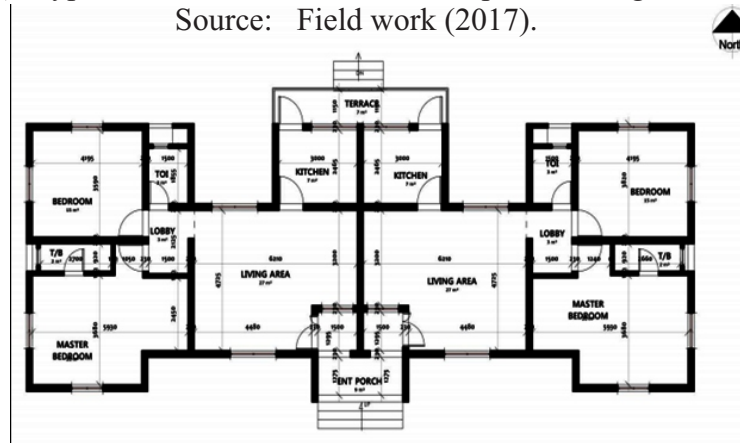


**Figure 8 (Type 4):** Typical ground floor semidetached duplex housing unit in the study area.

Source: Field work (2017)..

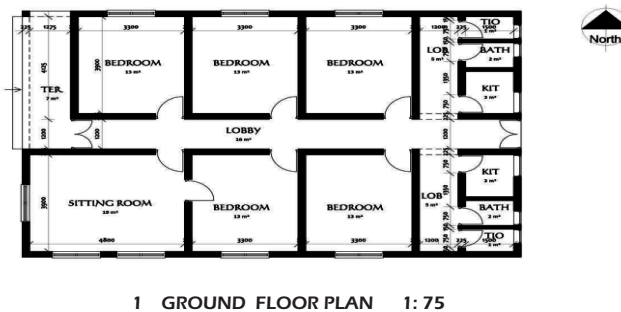


**Figure 9 (Type 4):** Typical first floor semidetached duplex housing unit in the study area.  
Source: Field work (2017).



**Figure 10 (Type 5):** Typical ground floor plan of two families' semidetached bungalow housing unit in the study area.  
Source: Field work (2017).

### 5.3.3 Type C. Rental housing development



**Figure 11 (Type 6):** Typical ground floor plan of a tenement bungalow housing unit in the study area.  
Source: Field work (2017).



1 GROUND FLOOR PLAN 1: 75

Figure 12 (Type 7): Typical ground floor plan of a single storey tenement housing in the study area. Source: Field work (2017).



1 FIRST FLOOR PLAN 1: 75

Figure 13 (Type 7): Typical first floor plan of a single storey tenement housing in the study area. Source: Field work (2017).



**Figure 14 (Type 8):** A typical floor plan of a Block of flats storey housing unit in the study area.

Source: Field work (2017).

### Socio-Spatial Analysis of Housing Typologies in the Study Area

There are three types of occupancy in the study area, full family occupation, part rented house occupation and full rental occupation (Table 2). The full family occupation is more prevalent in Ibeju-Lekki peri-urban settlements having 56% while part rented housing units are 44%. Housing initiatives were mainly of three types in peri-urban settlements of Ibeju-Lekki. Self-help housing is the commonest constituting about 84.4% of the housing development. Private developers' initiatives are about 14.5% of the housing development in the peri-urban while government housing initiative was 1.1%.

The commonest household units per building in Ibeju-Lekki are 7-8 units having 28.1% of the total households. Other types are 3-4 units (22.1%), 8-above units (20.7%), 5-6 units (18%) and less than 2 units (10.9%). The prominence of multiple units of household per building could be attributed to the preference for storey building and investment-driven growth in Ibeju-Lekki peri-urban settlements. Shown further is the analysis of room per household. The commonest is 6-9 rooms' household having 25.7%. Others are 0-2 rooms (11.2%), 3-5rooms (24.9%), 10-12 rooms (19.9%) and more than 13 rooms (15%).

**Table 2: Analysis of Characteristics of housing units in the study area**

| Variable                     |                                    | N=366 | %    |
|------------------------------|------------------------------------|-------|------|
| Occupancy                    | Full family occupation             | 205   | 56   |
|                              | Part family occupation/part rented | 161   | 44   |
| Housing Initiative           | Self-help housing                  | 309   | 84.4 |
|                              | Private developer/Cooperative      | 53    | 14.5 |
|                              | Government housing                 | 4     | 1.1  |
| Household units per building | 0-2 units                          | 40    | 10.9 |
|                              | 3-4 units                          | 81    | 22.1 |
|                              | 5-6 units                          | 66    | 18   |
|                              | 7-8 units                          | 103   | 28.1 |
|                              | 8-Above                            | 76    | 20.7 |
| Rooms per household          | 0-2                                | 41    | 11.2 |
|                              | 3-5 room                           | 91    | 24.9 |
|                              | 6-9 room                           | 94    | 25.7 |
|                              | 10-12 room                         | 73    | 19.9 |
|                              | 13 and above                       | 55    | 15   |
|                              | Others                             | 12    | 3.3  |

Source: Field survey (2017).

### Residents' Socio-Demographic Characteristics

Through the field survey presented in Table 3, there are five recognised household sizes in the study area. Household size of 1-2 persons constitutes 13.1% of the households, more than 13 persons (3.3%) and 10-12 persons (2.2%). Household sizes of 3-5 persons are the commonest, having 55.2% of the respondents' population. People with secondary school education are 30.1% and constitute the highest. Highest level of literacy is the first degree, diploma

and secondary school certificate having 32.7%, 20.8% and 34.3% respectively. 44.6% of household heads earn above N150, 000 monthly. This is the predominant income group which is the high income group. The low income group earning between N25, 000.00 to N50, 000.00 is 36.3% while the middle income earning N50, 000.00- N150, 000.00 constitute 19.1%. The Yoruba ethnic group constitutes the largest portion of the population in the study area, it is 71.9% while the Hausa tribe is the least represented.

**Table 3: Socio-economic characteristics of the household heads.**

| Variable                                |   | N=366 | %    |
|---|---|-------|------|
| Household size                          | 1-2 persons                             | 48    | 13.1 |
|   | 3-5persons                              | 202   | 55.2 |
|   | 6-9persons                              | 96    | 26.2 |
|   | 10-12persons                            | 8     | 2.2  |
|   | More than 13 persons                    | 12    | 3.3  |
| Literacy level of the household head    | Postgraduate                            | 56    | 15.3 |
|   | BSc/Higher diploma                      | 105   | 28.7 |
|   | Diploma                                 | 62    | 16.9 |
|   | Secondary                               | 110   | 30.1 |
|   | Primary                                 | 25    | 6.8  |
|   | None                                    | 8     | 2.2  |
| Monthly Income of household head(Naira) | Low income N25,000.00-<br>N50,000.00    | 133   | 36.3 |
|   | Middle income N50,00.00-<br>N150,000.00 | 70    | 19.1 |
|   | High income N150,001.00-Above           | 163   | 44.6 |
|   | Total                                   | 366   | 100  |
| Respondents' Ethnic group               | Yoruba                                  | 263   | 71.9 |
|   | Hausa                                   | 6     | 1.6  |
|   | Ibo                                     | 70    | 19.1 |
|   | Others                                  | 27    | 7.4  |
|   | Total                                   | 366   | 100  |

Source: Field survey (2017).

### **Factors Influencing Housing Typologies in the Study Area**

#### ***Impact of Housing Initiative on Housing Typology***

The correlation analysis presented in Table 4 shows there is a significant relationship between housing initiatives and housing typology in the study area (0.200\*\* P<0.01 in Ibeju-Lekki). This signifies that there is a relationship between housing initiatives and typologies in the study area.

#### ***Impact of residents' socio-demography on housing typology***

The test of correlation between housing typologies and respondents' socio-demographic attributes economic (Table 5) shows that income is the only attribute having significant relationship with housing typologies in the study area (-0.205\*\* P<0.000 ). Therefore, housing typologies is influenced by respondents' socio-demography in the study area.

**Table 4: Test of correlation between housing typologies and housing initiatives.**

| <b>Variables</b>                            | <b>Pearson Correlation</b> | <b>P-Value</b> | <b>Inference</b>  |
|---|----------------------------|----------------|---|
| Housing typologies and housing initiatives. | 0.200**                    | 0.000          | There is a significant correlation between the two variables. |

\*\* Correlation is significant at the 0.01 level (2-tailed).  
List wise N=366.

**Table 5: Correlation between housing typologies and respondents' socio- demography**

| Test Variables  | Sub Variables  | Pearson Correlation | P Value | Inference                                |
|---|----------------|---------------------|---------|--|
| Housing typologies and respondents' socio-economic attributes | Income         | -0.205**            | 0.000   | Significant negative linear relationship |
|   | Literacy group | 0.043               | 0.410   | No significant correlation               |
|   | Ethnic group   | 0.061               | 0.242   | No significant correlation               |

\*\* Correlation is significant at the 0.01 level (2-tailed).  
List wise N=366.

**Conclusion**

There were ten different housing typologies identified in the study area each having distinguishing socio-spatial attributes. Generic classes of housing typologies observed in the study area were full family occupation, part family/rental and full rental housing. Housing occupancy in Ibeju-Lekki shows that full family occupation was 56% while part family and part rented occupancy were 44%. Each type is a function of the use of the building. The commonest housing type in Ibeju-Lekki were the single family bungalow housing and single family storey building constituting 76.2% and 11.5% respectively. The commonest type of households units per building was the 7-8

units, 0-2 grouping was the least. The commonest rooms per household in Ibeju-Lekki housing were 3-5 rooms. Furthermore, the factors influencing housing typologies in the study area, a test of correlation was conducted which shows that housing typology is affected by socio-demography of the residents. Major socio-economic attribute that affects housing typology in the study area is income with a p-value of 0.000 and Pearson correlation of -0.205, it shows a significant negative linear relationship with housing typology. The implication of this is that the less the income, the less the quality and standard of housing typology that can be assessed. A test of correlation also shows that housing



typology in the study area is affected by the housing initiatives under which the building construction is executed. It can be concluded that the different housing typology in the study area is a response to the existing housing policy and residents' socio-demography.

### Recommendation

There should be an inclusion of the end users in the design stage, especially projects targeting low income group and middle income group, to help in achieving appropriate housing delivery strategy by housing providers in terms of the provision of an efficient and user responsive housing units. Post occupancy evaluation should regularly be carried out in any housing initiative, outside self-help, to determine their efficiency and suitability for the peri-urban settlements. This will enhance performance standard in other housing projects to be carried out.

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