



# Assessing the Effects of Sociodemographic Characteristics on Housing Adequacy in the Residential Core of Akure, Ondo State, Nigeria

A. A. Fakere, H. A. Ayoola and G. M. Borokini

## Abstract

*Adequate housing is essential to the general wellbeing of households. Thus, it is imperative for households to function properly within their residential spaces. However, housing is largely inadequate in the residential core of traditional towns in Nigeria and this is influenced by socioeconomic factors. A cross-sectional survey of 150 housing units was conducted in the residential core of Akure, Ondo State. It examined the impact of sociodemographic factors on housing adequacy in the study area using structured questionnaire. The data obtained were subjected to single-factor descriptive statistics, mean adequacy scoring and categorical regression analysis. The findings revealed that socio-demographic characteristics significantly impact housing adequacy in the study area. Education, income level, length of residence, numbers of bedrooms, household size and tenure status were significant predictors of housing adequacy in this context while tenure status contributed the most in predicting housing adequacy. The study concluded that socio-demographic characteristics of residents are important determinants of housing adequacy in the residential core area of Akure, Nigeria and should therefore, be of utmost considerations in the management and planning of such housing environments.*

## Keywords

Community, Housing, Housing adequacy, Residential core, Sociodemographic characteristics

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## 1. Introduction

In recent time, there has been an increase in the need for building developers to better understand the performance of constructed facilities such as housing and infrastructural facilities (Ibem and Alagbe, 2015). Housing consists of the psychological and physical attributes that enhance human wellbeing and also gives comfort (Odufuwa, Ogunseye, Oke, Salisu & Fasina, 2018). An important aspect of the performance evaluation of housing is its adequacy for the occupants. Thus, housing adequacy has become a topical issue due to its importance to the general wellbeing of residents. Adequate housing is fundamental to living in dignity and in good health (Yetunderonke, 2015). UN-Habitat (2014) averred that housing adequacy is a vital right of citizens and is enshrined in the International Human Right Law and Habitat

Agenda. Right to adequate housing is of central importance to enjoyment of all social, economic and cultural rights (Yetunderonke, 2015). Indeed, adequate housing is a prerequisite for quality of life (Ibem & Alagbe, 2015).

According to Eggers and Moumen (2013), housing is adequate when defects in any form of spatial, physical and services are absent within the residential environment. Thus, it is a measure of quality of houses as physical structure and the associated services and infrastructure. Furthermore, Ibem, Adeboye & Alagbe (2015) described it as housing that is fundamental in meeting the psychological, health, physiological and security needs of its users. According to Ibem and Alagbe (2015), housing adequacy refers to the residential environment that is both qualitatively and

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quantitatively sufficient in meeting the needs, aspirations and expectations of its users. Lee, Parrott and Ahn (2014) averred that housing adequacy is an objective measurement of residential conditions. In this study, housing adequacy is defined as a measure of qualitative and quantitative sufficiency of any given residential environment.

Over the years, due to poor management and neglect of older housing and provision of substandard new housing, Nigeria has been struggling to meet the qualitative housing needs of the urban population (Ibem and Amole, 2011). Hence, due to rapidly increasing poor housing situation in Nigerian urban centres, the citizens live largely in substandard and unhygienic residential environment, especially in the traditional core of cities (Olotuah and Taiwo, 2013). Thus, due to the nature of their development, the traditional core areas in Nigeria are usually characterised as poor neighbourhoods (Ayoola, Fakere and Olusoga, 2019).

The sustained security challenges in the northern part of Nigeria have precipitated the numbers of citizens drifting southwards for safety (Saidu and Yeom, 2020). The cumulative result has increased the demand for housing with its concomitant depleting impact on the quality of existing housing stock in urban centres in southern Nigeria (Okoye and Ngwu, 2021), coupled with neglect. According to Okoko (2004), housing is usually comparatively cheaper in the core area neighbourhoods; and this seems to be the reason that people more likely settle there when they newly move to the city before planning to move to other zones with time. Thus, the result is progressive depletion in the quality of the housing stock in the residential core of urban centres like Akure. Amidst this rapid population experience is a growing problem of housing inadequacy in the urban core of the city.

Yetunderonke (2015) observed that in poor neighbourhoods, there is typically lack of adequate spaces to perform certain functions like sleeping, cooking, storage, entertaining guests, and so on, which impacts negatively on the basic lifestyle needs of housing occupants. According to Odufuwa *et al.* (2018), such areas are characterised by largely dilapidated buildings crowded together with no distinct boundaries between plots, lack of ancillary facilities like kitchen or toilets that are situated within the housing blocks rooming houses with

shared ancillary facilities that are usually congested, and so on.

Housing adequacy, though of utmost importance, has remained an overlooked aspect of research, unlike other aspects of housing (Ibem and Alagbe, 2015). Of equal importance is the need to determine the factors that influence housing adequacy especially in the residential core of traditional cities in developing countries like Nigeria. Gan, Zuo, Wen and She (2019) examined housing adequacy and the effects that socioeconomic variables have on it. The study explored the adequacy of massive constructed housing in Chongqing, China. It found that, socioeconomic variables, especially of age, monthly income, household size and length of residence have significant effects on the overall housing adequacy and its components. Ibem, Adeboye and Alagbe (2015) examined the differences and similarities between housing adequacy and residential satisfaction. The study was conducted on public housing estates in Ogun State, Nigeria. The findings revealed that age, marital status, tenure status and monthly income were significant predictors of housing adequacy in the study area. It also revealed that gender, level of education, length of residence and household size were not significant predictors of housing adequacy in that context.

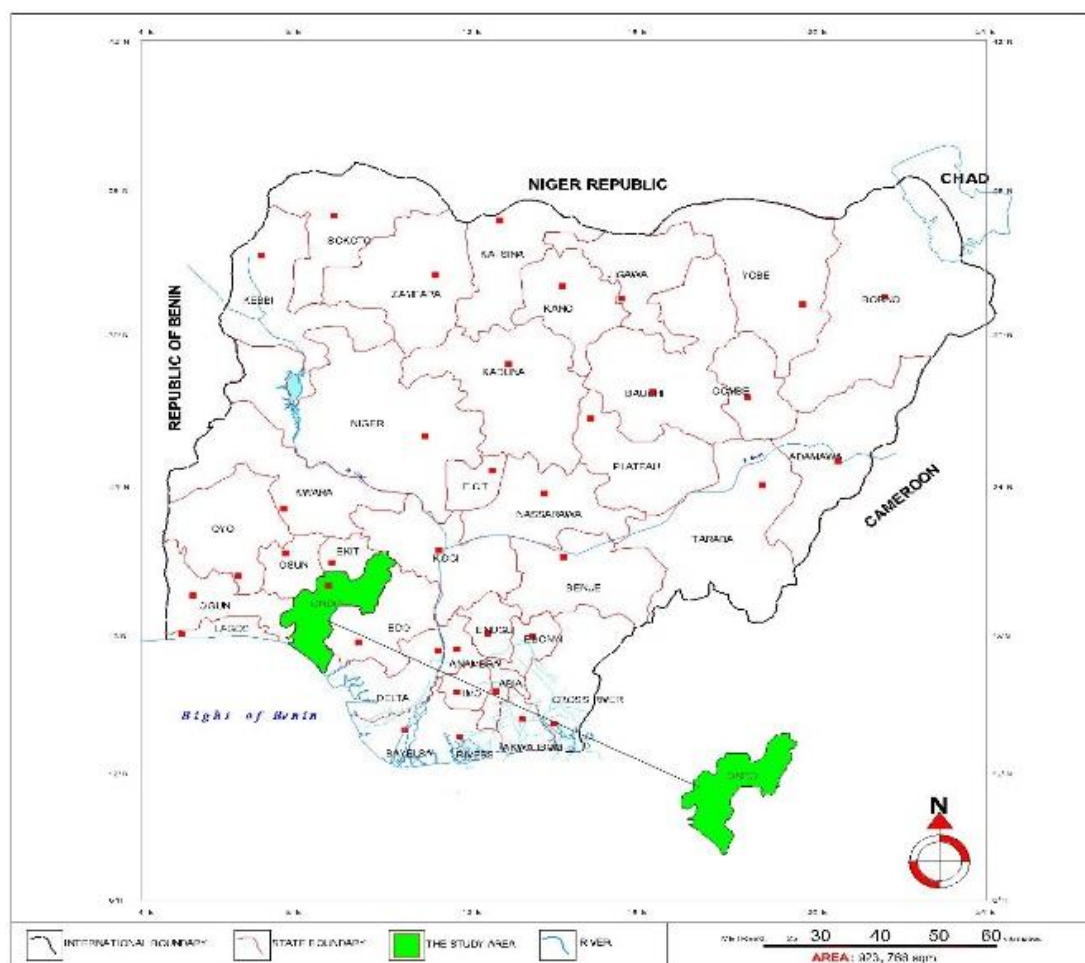
In addition, Yetunderonke (2015) examined housing adequacy of multi-habited houses in terms of spaces and privacy of residents, using Ogbomosho in Southwest Nigeria as a case study. The study utilised questionnaire instrument and analysed the data using descriptive statistics and Mean scoring. The findings showed that housing in the study area was inadequate in terms of bathrooms, toilets, kitchen facilities and spaces generally expected of households. Privacy was compromised because the rooms were overcrowded and there were conflicts over shared spaces. These studies provided some information on the determinants of housing adequacy; however, they did not provide information pertaining to residential core of traditional cities in Nigeria. This study, therefore, intends to fill the gap in knowledge. It deals with housing adequacy and the sociodemographic factors that could influence it in the residential core of Akure, Southwest, Nigeria. Due to the fact that most of the new housing developments are carried out in the other zones Nigerian cities, the core areas seem to be neglected (Fakere and Ayoola, 2022).

Against this background, this study seeks to assess the effects of sociodemographic characteristics of residents on housing adequacy in the residential core of Akure. Other sociodemographic factors not used in previous studies but have the potential to impact housing adequacy such as numbers of bedrooms in the residence, use of the kitchen, required spaces that were not provided in the house, were included in this study. This study is important because continuous assessment of housing adequacy is essential in judging the performance of existing housing and guide future private housing policies and programmes.

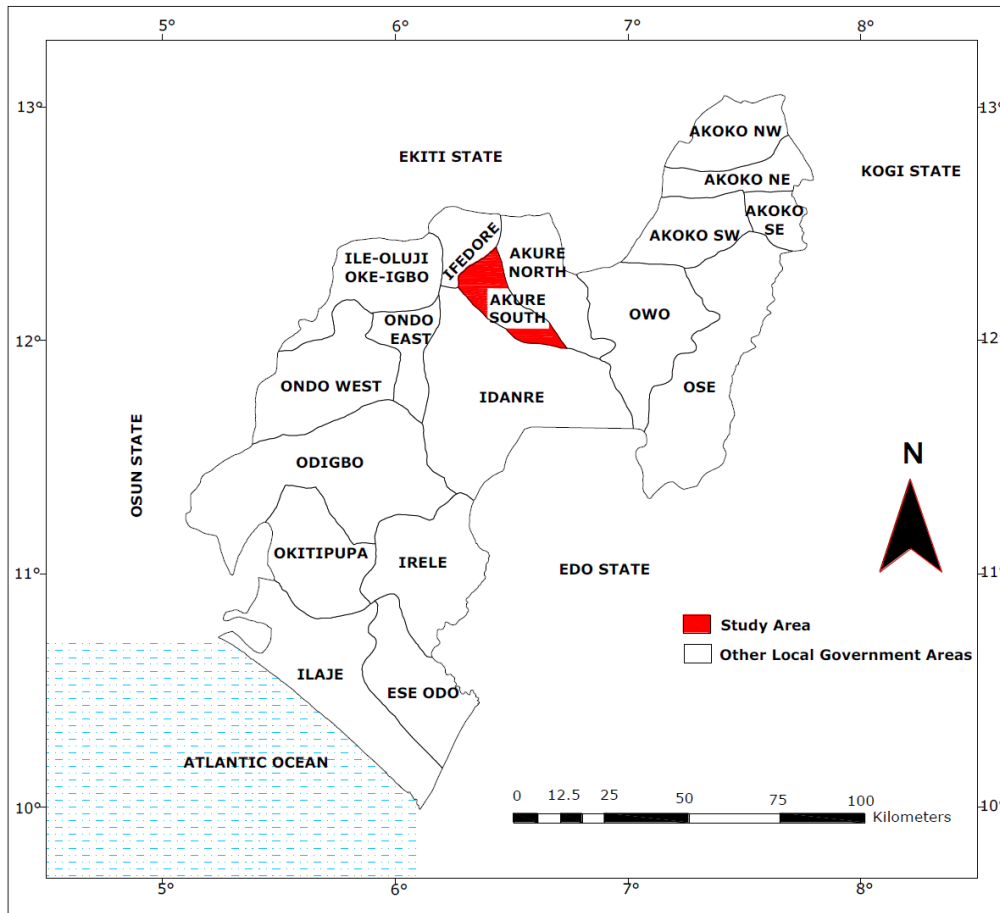
## 2. Methodology

Akure, being a traditional city in Nigeria is similar to Nigeria's numerous other Yoruba cities. The town is located in Nigeria's Southwestern geopolitical zone of Nigeria and is around 370m above the sea level. It is located between Latitude

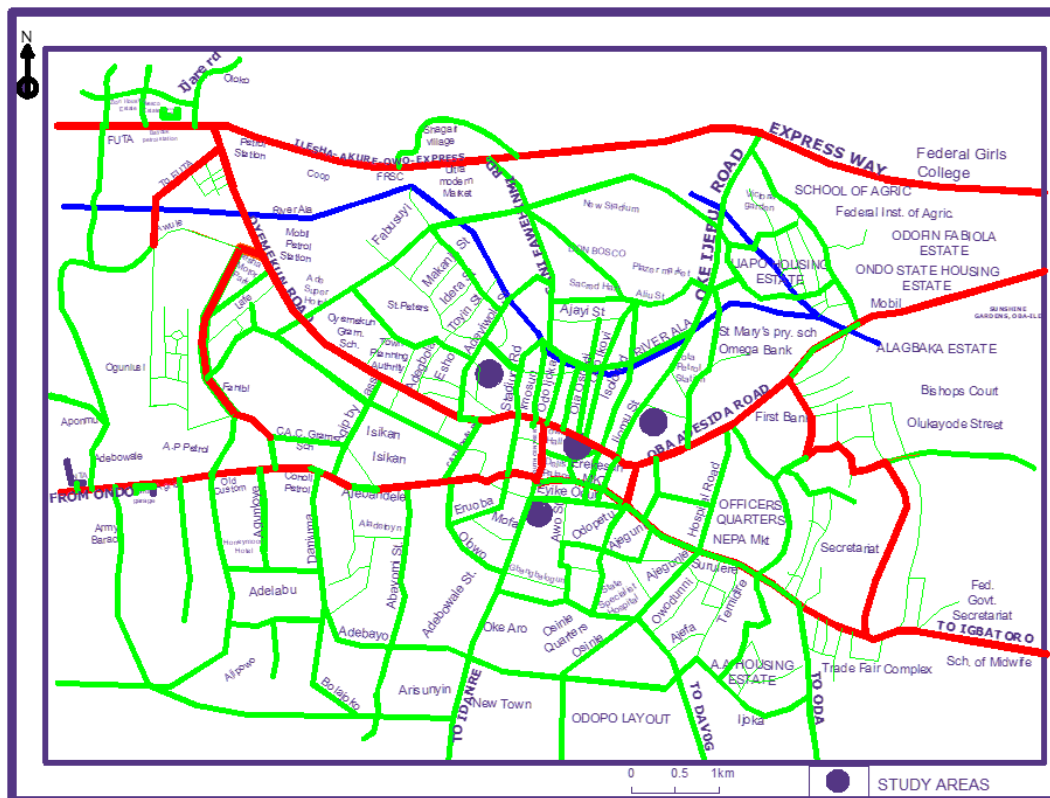
7°15' and 7°17'' North of the Equator and Longitude 5°14' and 5°15'' East of the Greenwich Meridian (MacMillan Nigeria, 2006). The location of the city is shown in Figures 1 to 3. The core area of Akure is the centre of the city from where the city grew and expanded outwards. Owoeye and Omole (2012) asserted that the core area of Akure is made up of four neighbourhoods (Figure 4): Erekesan/ Erekefa market and environs (Zone 1); Idiagba/ Ijemikin area (Zone 2); Araromi/Odo-Ikoyi/Isolo, Ijomu via Oke Ijebu Streets (Zone 3) and Odo-Ijoka/Old Stadium/Oke-Igan Area (Zone 4). Ayoola, Fakere and Olusoga (2019) averred that the core area of Akure is characterised by non-functional infrastructure due to rapid urbanisation, poor quality and inadequate housing and improper and uncontrolled physical development due to poor planning. This is expected to have negative consequences for housing adequacy in the area (Fakere and Ayoola, 2022). Hence, the need for this study.



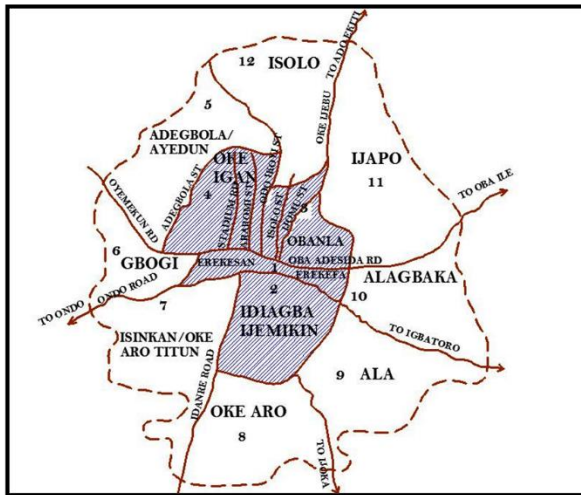
**Figure 1: Map of Ondo State in National Context**  
Source: Owoeye and Omole (2012)



**Figure 2: Map of Akure South Local Government in Ondo State Context**  
 Source: Ondo State Ministry of Physical Planning and Urban Development (2021)



**Figure 3: The study area in the context of Akure**  
 Source: Ondo State Ministry of Physical Planning and Urban Development (2015)



**Figure 4: Akure division into 12 residential zones**  
**Source: Ayoola, Fakere and Olusoga (2019)**

This study relies on primary data collected through structured questionnaire survey. The structure of the questionnaire is according to the themes of the study given as “sociodemographic characteristics of the respondents and levels of housing adequacy within the house and with housing facilities”. The adequacy variables were as determined by Ibem and Alagbe (2015). The socioeconomic variables were defined as shown in Table 1, where the respondents were asked to select the correct options from the ones provided in the structured questionnaire. These levels were converted to options in the structured questionnaire for the variables of housing adequacy. The question asked was: “How would you rate the adequacy levels of your housing environment in terms of the following?”

The sample size was determined by a percentage of 10 based on the numbers of existing housing units in the study area. Copies of the questionnaire were administered based on one person per household and one household per housing unit. The focus was only on household heads or an adult member in each housing unit present at the time of the survey. Ten per cent sample size was deemed adequate for social science studies (Bullen, 2022). Therefore, the sample size for this study was 223 of a population of 2,228 housing units in the study area, which was developed using 95% confidence level. Sampling was carried out using systematic random sampling

techniques. The validly retrieved copies were 150), which is a return of 67.2% for the structured questionnaire and was deemed as sufficient for the study.

The data were analysed using SPSS Version 23 software. Single-Factor Descriptive Analysis, Mean Adequacy Scoring (MAS) and Categorical Regression Analysis were conducted for this research. To ensure the validity and reliability of the findings of the study, Cronbach’s Alpha coefficient test was conducted using the housing adequacy attributes and the sociodemographic variables. The Cronbach’s Alpha value was 0.865, which is more than 0.7 recommended by Pallant (2011). This implies that the questionnaire was practically reliable in measuring housing adequacy in the study area.

### 3. Results and Discussions

#### 3.1 Sociodemographic Characteristics of respondents in the study area

Table 1 shows that majority of the respondents (86.7%) were between the ages 18 years and 45 years, and almost three-fifth of them (59.3%) were males. Over three-fifth (61.3%) were married and majority of them were well educated with over 64% having Diploma/National Certificate of Education or University Degree. This implies that the level of education in the study area is reasonably high. More than half of them (57.3%) were renters and almost half (45.3%) of them earn below N38,000 monthly income; which implies that majority of them are low-income earners. More than half of the respondents (52.7%) live alone or with one other person, while majority (57.4%) of them have lived in the neighbourhood for between one and five years. Almost one-third of them (30.7%) live in 1-bedroom and preliminary investigations suggest that most of the houses in this area are rooming houses. About one-fourth of them (26.0%) required space for outdoor cooking, which was not provided for in the design of the houses of their abode, while over half (55.3%) of them described the cost of their housing as affordable. Under two-third (64.7%) of them had their kitchen located within the building, and over two-third (68.7%) had the exclusive use of their kitchen spaces.



**Table 1: Sociodemographic characteristics of respondents**

Factors	Frequency	Percentages
<b>Age</b>		
18-30 years	87	58.0
31-45 years	43	28.7
46-59 years	20	13.3
60 years and above	0	0.0
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Gender</b>		
Male	89	59.3
Female	61	40.7
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Marital Status</b>		
Single	92	61.3
Married	40	26.7
Widowed	1	0.7
Divorced/ Separated	17	11.3
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Education</b>		
No formal education	0	0.0
Primary	11	7.3
Secondary	43	28.7
OND/NCE/ A' Level	43	28.7
HND/ B.Sc.	40	26.6
Masters	9	6.0
Doctorate	4	2.7
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Monthly Income (₦)</b>		
Below ₦13,999	21	14.0
₦14,000-₦37,999	47	31.3
₦38,000- ₦44,999	17	11.3
₦45,000-₦71,999	43	28.7
₦72,000-₦145.999	13	8.7
₦146,000 and above	9	6.0
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Tenure</b>		
Privately-rented	86	57.3
Owner-occupied	32	21.3
Family house	20	13.3
Employer's Quarters	11	7.3
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Household Size</b>		
1	37	24.7
2	42	28.0
3	19	12.7
4	29	19.3
Above 4	23	15.3
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Length of Occupation</b>		
Less than 1 year	27	18.0
1 - 3 years	52	34.7
4 - 5 years	34	22.7
Above 5 years	37	24.6
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Spaces required that were not provided in the house</b>		
Space for shop	31	20.7
Storage Space	29	19.3
Visitor's Toilet	16	10.7
Guest bedroom	19	12.7
Laundry	13	8.7
Outdoor cooking space	39	26.0
No response	3	2.0
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Level of Affordability</b>		
Highly Unaffordable	19	12.7
Unaffordable	23	15.3
Affordable	83	55.3
Highly Affordable	25	16.0
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Location of the kitchen</b>		
Within the building	97	64.7
Detached from the building	53	35.3
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Use of kitchen</b>		
Exclusive use	104	68.7
Shared	46	30.7
<b>Total</b>	<b>150</b>	<b>100</b>
<b>Number of bedrooms</b>		
1	46	30.7
2	38	25.3
3	32	21.3
4	22	14.7
More than 4 bedrooms	12	8.0
<b>Total</b>	<b>150</b>	<b>100</b>

Source: Researcher's Field Survey (2022)

### 3.2 Residents Perception of Housing Adequacy in the Study Area

Table 2 shows that the overall MAS score of housing adequacy in the study area is 3.14. This suggests that the respondents rated their housing environment in the core area as fairly adequate in meeting their needs, thus, marginally meeting their expectations, aspirations and needs. The Table also presents the adequacy levels of the 16 housing units, 6 housing services and infrastructure, 9 neighbourhood facilities and 2 management facilities attributes investigated in the study. From

the Table, it can be observed that the highest ranked housing unit attribute was the size of the bedrooms with MAS of 3.53, while the lowest ranked was protection against noise pollution with MAS of 2.86. Electricity supply in the house was the highest ranked housing and infrastructure services variable with MAS of 3.31 and the lowest ranked was provision of refuse disposal facilities with MAS of 2.94. Management and maintenance of facilities in the street has an MAS of 3.03, while communal activities in the street is ranked lower with MAS of 2.77. Of all the attributes, only housing unit

attributes were scored above the overall average with MAS of 3.27, while the other attributes (housing services and infrastructure: 3.13; neighbourhood facilities: 2.97; and management of facilities: 2.90) scored lower. This suggests that housing unit attributes in the study area would

contribute more in determining housing adequacy in the study area than the other attributes do. It also suggests that in terms of housing adequacy, less attention is paid to the provision, accessibility and management of neighbourhood facilities.

**Table 2: Mean Ranking of Level of Housing Adequacy Attributes**

Housing Adequacy variables	Mean Adequacy Score (MAS)	Ranking
<b>Housing unit attributes</b>		
Sizes of bedrooms	3.53	1
Number of bedrooms	3.47	2
Natural lighting in bedrooms	3.46	3
Circulation of fresh air in bedrooms	3.45	4
Natural lighting in Kitchen	3.43	5
Level of privacy in your house	3.37	6
Natural lighting in Living/ Dining rooms	3.29	7
Circulation of fresh air in Living/dining rooms	3.29	7
Level of thermal comfort in your apartment	3.26	9
Sizes of Living & Dining Space in your house	3.20	10
Size of cooking and storage space	3.17	11
Protection against insects and dangerous animals	3.17	11
Protection against dampness in your house	3.14	13
Fire safety measures in your house	3.14	13
Security measures in your house	3.11	15
Protection against noise pollution	2.86	16
<b>Total</b>	<b>3.27</b>	
<b>Housing services and infrastructure</b>		
Electricity supply in your house	3.31	1
Provision of Sanitary/ drainage facilities	3.31	1
Portable water supply in your house	3.23	3
Road network within the area	3.03	4
External lighting in the street	2.97	5
Provision of refuse disposal facilities	2.94	6
<b>Total</b>	<b>3.13</b>	
<b>Neighbourhood facilities</b>		
Accessibility to place of worship	3.46	1
Provision of shopping facilities in the street	3.32	2
Accessibility to Public transport service	3.30	3
Provision of educational Facilities in the street	3.14	4
Accessibility to medical and health care services	3.01	5
Provision of Playground for children	2.69	6
Availability of open spaces/green Areas	2.63	7
Provision of recreational/sport facilities	2.60	8
Provision of parking spaces in the street	2.57	9
<b>Total</b>	<b>2.97</b>	
<b>Management of facilities</b>		
Management and maintenance of facilities in the street	3.03	1
Communal activities in the street	2.77	2
<b>Total</b>	<b>2.90</b>	
<b>Overall Total</b>	<b>3.14</b>	

Source: Researcher's Field Survey (2022)

### 3.3 Predictors of Housing Adequacy

The research further investigated predictors of housing adequacy in the study area. Categorical Regression Analysis was carried out using optimal scaling method with the criteria for convergence set at 0.00001. In carrying out this analysis, housing adequacy was the dependent variable and respondents' marital status, highest level of education, tenure status, monthly income, gender, age, household size, length of occupation, numbers of bedrooms, use of kitchen and spaces needed but not provided in the house were the independent (predictor) variables. Table 3 shows the result of the Multiple Categorical Regression Analysis carried out to identify the predictors of housing adequacy. The result shows that not much of the variance in the dependent variable is explained by the regression model with Multiple R = 0.695, and  $R^2 = 0.483$ . This indicates that the regression model explains 48.3% of the residual variation in housing adequacy in the study area. However, other variables beyond the scope of this study could explain the remaining percentage. The result also shows that ( $F = 2.511$ ,  $df = 144$ ,  $P = 0.000$ ), which also indicates that the result and regression model are statistically significant at  $p = 0.000$  and therefore there is significant relationship between sociodemographic variables and housing adequacy. This is consistent with Ibem *et al.* (2015) and Gan *et al.* (2019), who found a relationship between sociodemographic variables and housing adequacy.

From Table 3, it is evident that all the six variables were significant predictors of housing adequacy in the study. The variables in order of importance include tenure status (Beta = 0.436), number of bedrooms in the house (Beta = 0.411), level of education (Beta = 0.352), length of stay (Beta = 0.318), household size (Beta = 0.314), and level of income (Beta = 0.312). The strongest significant predictor is tenure status, while the weakest significant predictor is level of income. Tenure status was a significant predictor in this model because owner-occupiers usually have an influence over the design of their residences and this usually impacts positively on housing adequacy.

Huang, Du and Yu (2015) found that owner-occupiers are likely to be more satisfied with their residential environments than tenants because they are more likely to be involved in the development of the house. Ibem *et al.* (2015) found that people are more likely to be satisfied with their housing if they find the housing to be adequate. Numbers of bedrooms in the house is another significant predictor in this context and this was expected. This is so perhaps because the bedroom is one of the most important spaces in the house since that is where people retire to sleep after a long day's work.

The respondents seem not to have very large households possibly because most of them are single (61.3%). Poorer and less-educated people in Nigeria tend to have larger families than richer and more educated ones (Anyanwu, 2013). However, most of them seem to be educated up to secondary school level, which means that they are not illiterates. These are the likely reasons that household size and level of education were significant predictors in this study. Most of the respondents were low-income earners who earn less than N45,000 monthly and most of them have lived for average of three years in their residences. When people live in a housing environment for a while, they tend to adjust to that environment. Hence, the reason that length of residence is a significant predictor of housing adequacy in this study. Findings of this study partially agrees with that of Ibem *et al.* (2015), which showed that tenure status, marital status, age and income level have significant influence on housing adequacy; while gender, level of education, length of residence and household size do not. On the other hand, Gan *et al.* (2019) agrees that age, income level, household size and length of residence influence housing adequacy. Other variables that did not show significant impact on housing adequacy include gender, age, marital status, use of kitchen and required spaces that were provided in the house. This is partially at variance with Ibem *et al.* (2015) and Gan *et al.* (2019), which showed that age and marital status have significant influence on housing adequacy.



**Table 3: Coefficients of socio-demographic predictors of Residential Satisfaction**

	Standardised Coefficients		<i>df</i>	<i>F</i>	<i>Sig.</i>
	Beta	Std. Error			
Gender	.059	.082	2	.518	.597
Age	.097	.091	3	1.120	.344
Marital Status	.165	.143	4	1.330	.264
Education	.352	.134	4	6.881	.000**
Monthly Income	.312	.144	4	4.684	.002**
Length of Stay	.318	.106	4	8.981	.000**
Number of bedrooms	.411	.201	4	4.174	.004**
Household Size	.314	.129	4	5.970	.000**
Use of the kitchen	.015	.143	2	.011	.989
Needed spaces not provided	.172	.126	4	1.860	.123
Tenure Status	.436	.234	4	3.458	.011*
<b>Multiple R</b>	<b>R<sup>2</sup></b>		<b><i>df</i></b>	<b><i>F</i></b>	<b><i>Sig.</i></b>
0.695	0.483		144	2.511	0.000

Dependent variable: Housing adequacy; \*\*Significant predictors (P<0.01); \* Significant predictors (P<0.05)

#### 4. Conclusion and Policy Implications

This paper examined the sociodemographic variables that predict the level of housing adequacy. This was done by using these variables: marital status, highest level of education, tenure status, monthly income, gender, age, household size, length of occupation, numbers of bedrooms, use of kitchen and spaces needed but not provided in the house as factors, which could predict adequate housing in the study area. The study showed that housing was largely adequate for most of the respondents. The study also showed that sociodemographic variables are indeed significant predictors of housing adequacy, confirming the findings from previous studies. This study has been able to contribute to existing body of literature by showing how socioeconomic variables influence level of housing adequacy.

The predictive power of the regression model in housing adequacy was found to be below average with adjusted R Square of 0.483. This means that not only do these variables predict the level of housing adequacy, the predictive power is also below average. This relationship is also absolute since p-value = 0.000. This means that these variables jointly and individually predict housing adequacy with the exception of gender, age, marital status, use of kitchen and needed space that were not provided in the house.

Since not much of the variation in housing adequacy was explained by the sociodemographic characteristics, further studies will be required in order to better understand this relationship in order to discover what the result would be in other contexts. What other variables can significantly predict housing adequacy? Are these findings

peculiar to this context or will it be different in other similar contexts? Governments and policy makers that are in charge of development control in the residential core of the city will require such research in future for individuals and the public. It is through such knowledge that the process of infrastructure provision could be refined as necessary. This is in order to improve adequate housing in traditional core of the city.

Thus, government authorities should focus more on improving the adequacy of neighbourhood facilities, while also improving the management of the facilities in the study area. Particularly, attention should be focused on enhancing the adequacy of parking spaces, provision of playground for children, availability of open/green spaces, provision of recreational facilities and enhancing communal activities in the street. There is a need to consider the sociodemographic characteristics of residents of the core area in planning and management of the area especially in terms of their tenure status, household size, numbers of bedrooms, educational qualification, monthly income and length of residence. The findings of this study support the development of strategies for adequate housing environments, which would be more easily achieved since the factors that influence housing adequacy are known. This is fundamental in realising the goals of qualitative housing environment and contributing immensely to achieving residential satisfaction. Therefore, housing and urban developmental measures and policies in Nigeria should be directed towards enhancing housing adequacy by considering the unique profiles of residents.

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