

An Evaluation of Private Housing Estate Adequacy in Alimosho Local Government Area of Lagos State, Nigeria

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Abstract

This study evaluates the adequacy of private housing estates in Alimosho Local Government Area of Lagos State with specific focus on housing attributes and the key factors influencing residents' perception of adequacy. Three private housing estates were selected, and data were obtained through a questionnaire survey administered to household heads across block of flats, semi-detached and detached duplex typologies. Out of 373 questionnaires distributed, 212 were retrieved, representing a 56.84 percent response rate. The analysis employed descriptive statistical tools, Relative Adequacy Index and factor analysis to examine residents' satisfaction with housing attributes and to identify underlying dimensions influencing perceived adequacy. Findings revealed that although most housing attributes recorded high relative adequacy values, notable variations existed across the estates. Potable water supply, burglary proof on windows and number of bedrooms ranked highest in adequacy with RAI values of 3.76, 3.75 and 3.73 respectively. Conversely, natural lighting in kitchens, fire safety measures and thermal comfort were rated least adequate, indicating design related gaps in these units. Factor analysis reduced forty-one assessed variables into eight significant components that explain users' perception of estate adequacy. These components include managerial factor, utility adequacy factor, infrastructural factor, facilities maintenance factor, accessibility to facilities factor and basic facilities availability factor among others. The study concludes that while private housing estates in Alimosho demonstrate acceptable adequacy levels in many physical and infrastructural attributes, deficiencies remain in thermal comfort, lighting and safety related features. Also, management efficiency, the quality of infrastructure and access to essential services largely shaped residents' perception of adequacy. The study recommends improved estate design standards, strengthened facility management systems and tailored policy interventions to enhance housing adequacy in private estates within rapidly urbanising areas such as Alimosho.

Keywords:

Housing, Housing Adequacy, Private Housing Estates, Alimosho, Lagos

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1. INTRODUCTION

Nigeria's urban centres have been growing at a dizzying pace over the last two decades. In the case of Lagos State, population increase, rural-urban migration, and economic opportunities have generated enormous pressure on existing housing stock. Despite efforts by government and private developers combined, the supply of housing remains well below demand and a substantial portion of existing dwellings do not meet acceptable standards of adequacy. A recent media reports reveals that Lagos delivered nearly 10,000 new housing units over a six-year period (2020–2025), however, experts estimate that the total housing deficit still runs into the millions of units. (Ogundeji, 2025; Akoni, 2025)

In response to the deficit, houses developed by private developers have become a central pillar of housing supply in metropolitan Lagos. These estates are often promoted as secure, planned, and serviced alternatives to informal settlements. Nevertheless, a growing body of scholarly work suggests that the label “estate” does not always guarantee adequacy in terms of dwelling quality, infrastructure, services, or long-term durability. For instance, a comparative study of public versus private estates in Lagos found that private estates did not uniformly outperform public ones; as the study found significant disparities in housing quality and environment quality persisted across different estates (Olasokan, Agboga & Shittu 2023). In parallel, work on land administration highlights systemic challenges; bureaucracy, delays, inadequate documentation, that undermine the delivery of private housing estates in Lagos. (Oyedeji, 2021)

These insights are pointers to the fact that in Lagos's complex urban context, private estates cannot be assumed outrightly adequate. The risk is that such developments become enclaves of privilege or undelivered promises rather than inclusive, viable housing solutions. Yet despite this, much of the empirical literature still emphasizes public housing estates or treats “estate” generically. Fewer studies provide detailed assessment of private housing estate adequacy. It is in this research gap that the present study locates itself. This paper therefore, attempts to understand the level of adequacy of private housing estates in Alimosho Local Government Area of Lagos State, Nigeria. More specifically, the research intends to examine the perceptions of residents as to how adequate different housing attributes are in the case of selected private estates and finding out the main factors that influence those who live in these housing environments in terms of their satisfaction.

2. LITERATURE REVIEW

Housing adequacy is widely recognised in contemporary housing research as a multidimensional concept that extends beyond the mere physical provision of shelter to encompass the quality, safety, functionality, and livability of residential environments. Recent studies emphasise that adequate housing should ensure structural stability, sufficient space, environmental comfort, and access to essential services such as water, electricity, sanitation, and transport infrastructure, all of which collectively contribute to household wellbeing and social inclusion (Fakere et al., 2023; Ubarevičienė & Aidukaitė, 2026). Scholars also note that housing adequacy incorporates broader neighbourhood and institutional dimensions, including effective management systems, accessibility to social amenities, and safe living environments, since these elements strongly shape residents' perceptions of housing quality and overall residential satisfaction.

Furthermore, global housing frameworks increasingly conceptualise adequacy through a set of measurable indicators covering habitability, affordability, infrastructure provision, and proximity to employment and social services, recognising that housing must support security, dignity, and sustainable living conditions (Behr et al., 2021). Consequently, contemporary housing research often operationalises adequacy through residents' evaluations of these attributes, acknowledging that user perceptions provide important insights into the functional performance of housing environments and the extent to which residential developments meet the needs of occupants. Housing adequacy therefore, is a multifarious notion that goes beyond the ordinary provision of shelter alone. It has so much to do with personal security, safety, and the broader socio economic wellbeing of individuals and communities.

Based on the foregoing, housing adequacy is assessed in this study through residents' satisfaction with adequacy-related housing attributes. Ibem (2011) opined that the aspiration for adequate housing reflects deeper needs related to social status and quality of life. Consequently, a dwelling that appears visually appealing may still fail to meet adequacy standards when assessed in terms of functionality and performance. This distinction underpins the argument by Lee, Parrott, and Ahn (2014) that housing adequacy should be assessed using objective indicators rather than relying solely on subjective perceptions. Most scholarly definitions of housing adequacy therefore converge around a set of measurable physical, social, and environmental dimensions.

Earlier contributions to the literature, including those by Thiele (2002) and Zubairu (2002), conceptualize adequate housing as one that ensures legal security of tenure, accessibility, appropriate location, and availability of essential services. Such housing is expected to be decent, safe, and capable of guaranteeing privacy, sufficient space, and healthy living conditions. Similarly, Krieger and Higgins (2002), in their study on housing and health, argue that a dwelling is suitable for human habitation only when it satisfies key requirements such as structural stability, absence of defects and dampness that may endanger occupants' health, and adequate provision for lighting, heating, and ventilation. These criteria were further supported by Reilly (2008), who highlighted the importance of functional building conditions. Additional attributes commonly identified in the literature include adequate facilities for food preparation and storage, reliable access to safe water, and effective drainage systems for waste and surface water.

2.1 Assessing Housing Adequacy from the Users' Perspective

Evaluating housing schemes is essential for assessing project effectiveness and for generating feedback to inform future housing delivery in both public and private sectors (Djebarni and Al Abed, 1998). However, housing evaluations have often prioritised professional and institutional viewpoints, with limited attention to residents' perspectives. This imbalance has frequently produced housing outcomes that do not fully reflect occupants' needs and expectations. Early work by Zey Ferrell, Kelley, and Bertrand (1977) demonstrated the importance of incorporating residents into housing adequacy assessments, showing that perceptions of housing environments are strongly influenced by users' preferences and socio-economic characteristics.

Residents typically assess their dwellings through everyday interaction with spaces and services, whereas professionals such as architects and planners may not experience these environments in actual use. This difference in experience helps explain the persistent gap between design intentions and user satisfaction outcomes (Vischer, 2008; Chohen et al., 2010), underscoring the importance of user-centred approaches in housing evaluation. Housing adequacy assessment therefore needs to adopt a multidimensional perspective. Ibem, Aduwo, and Uwakonye (2012) argue that such evaluation should extend beyond physical building quality to include housing services, social infrastructure, management practices, and spatial characteristics of dwelling units. Practically, this involves examining room sizes, internal layouts, lighting, ventilation, security, privacy, and the condition of building elements, alongside access to basic amenities such as water supply, electricity, and sanitation.

Empirical studies from different contexts support the relevance of these dimensions. Rahman et al. (2015), in a study of private apartment developments in Dhaka, found that residents attached high importance to hygienic conditions, physical quality, service standards, location, and neighbourhood attributes. However, differences in socio-economic conditions and institutional settings limit the direct transferability of these findings to the Nigerian context. In Nigeria, Ibem and Alagbe (2015) reported that residents of public housing estates in Ogun State perceived their housing as largely inadequate, particularly in relation to interior environmental conditions, security and utility services, neighbourhood facilities, privacy, and space adequacy. Similarly, Eyiah-Botwe (2015) found that end users of housing projects in Ghana were satisfied with some design features but dissatisfied with deficiencies in outdoor spaces, location attributes, social infrastructure, and estate management, highlighting the role of contextual and cultural factors in shaping housing adequacy outcomes.

2.2 Factors Influencing Users' Perception of Housing Adequacy

Users' assessments of housing adequacy are influenced by a combination of socio-economic and household characteristics. Statistics New Zealand (2013) highlights factors such as income level, age, stage in the life cycle, tenure status, and household composition as important determinants of housing perceptions. The study shows that individuals with lower socio-economic status, renters, people aged 25–45 years, and single-parent households are more likely to rate their housing conditions unfavourably. Similarly, the Heritage and Local Government (2007) report emphasises that adequate housing should satisfy social, architectural, and environmental requirements, while remaining accessible, adaptable, safe, affordable, and resource-efficient.

Age has been shown to play a significant role in housing satisfaction. Van, Frijters, and Carbonell (2003) observe that younger adults, particularly those below 35 years, tend to express lower satisfaction with their dwellings than older residents. In contrast, individuals aged 65 years and above often report higher satisfaction levels, a pattern linked to greater housing stability, smaller household sizes, and higher rates of home ownership. Comparable trends have been reported by Vera-Toscano and Ateca-Amestoy (2008) and Andrews and Caldera Sánchez (2011), reinforcing the central role of socio-economic characteristics in shaping housing adequacy perceptions.

Evidence from developing contexts further demonstrates the importance of locational and facility-related attributes. In Nigeria, Ojo and Oloruntoba (2012) found that residents of public housing estates in Ondo State were generally satisfied with proximity to places of worship and living room sizes but expressed dissatisfaction with limited recreational facilities, poor access to healthcare services, and the absence of children's play areas. Balestra and Sultan (2013) similarly argue that residential satisfaction and location choices reflect both dwelling attributes and neighbourhood conditions, including access to employment, public transport, recreational spaces, and social networks.

Studies from other contexts support this multidimensional view. Piyush, Bhatt, and Pitroda (2016), examining residential flats in Surat and Ahmedabad, identified a broad range of factors influencing user satisfaction, including developer reputation, construction quality, building location, security and fire safety measures, spatial layouts, ventilation, water supply, parking provision, recreational amenities, and interior finishes. Despite contextual differences, these findings collectively underscore the complex and multidimensional nature of housing adequacy and residential satisfaction.

3. RESEARCH METHODOLOGY

The study was carried out in Alimosho Local Government Area of Lagos State, with empirical evidence drawn from three selected private housing estates within the area. Three distinct housing typologies were examined, namely blocks of flats, semi-detached duplexes, and detached duplexes. Alimosho Local Government Area was purposively selected because of its relatively high concentration of private housing estates, making it suitable for investigating housing adequacy within such developments. More so, and as earlier stated, housing adequacy is assessed in this study through residents' satisfaction with adequacy-related housing attributes. Primary data for the study were obtained through a structured questionnaire survey administered across the three selected estates. The target respondents were household heads residing in the estates, which were selected through random sampling to ensure broad representation. A total of 373 questionnaires were distributed, out of which 212 were correctly completed and retrieved, representing a response rate of 56.84 percent. Data collected from the survey were analysed using both descriptive and inferential statistical techniques. Residents' perceptions of the adequacy of residential facilities within the private housing estates were measured using a five point Likert scale, ranging from Very Dissatisfied (1) to Very Satisfied (5). The RAI is calculated as:

$$RAI = \frac{\sum(w_i x_i)}{N}$$

Where:

- W_i = weight assigned to each Likert response (1–5)
- x_i = frequency of responses
- N = total number of respondents
- SWV = Sum of Weighted Values

The index therefore represents the mean adequacy score derived from the Likert responses. In addition, factor analysis was employed to reduce the data set by grouping related variables and to identify the factors that most strongly influence residents' perceptions of housing adequacy.

4. DATA PRESENTATION AND DISCUSSION

4.1 Demographic Presentation of Respondents

Table 1 presents the demographic distribution of respondents across the three surveyed housing estates. The data shows that males (66.5%) outnumber females (30.2%), and the dominant age group is 31–45 years (60.85%), followed by 18–30 years (20.28%). Most respondents are married (78.3%) and possess at least a higher national diploma (HND), indicating a high level of educational attainment and the capacity to provide reliable responses. These distributions suggest a diverse and informed respondent pool for assessing housing adequacy.

Table 1: Socio-economic Characteristics of Respondents

Variables	Total
Gender	
Male	141(66.5%)
Female	64(30.2%)
No response	7(3.3%)
Total	212(100%)
Age (Years)	
18-30	43(20.28%)
31-45	129(60.85%)
46-59	33(15.57%)
60 and above	3(1.41%)
No response	4(1.89%)
Total	212(100%)
Marital Status	
Single	28(13.21%)
Divorced	13(6.13%)
Married	166(78.30%)
Widowed	1(0.47%)
No response	4(1.89%)
Total	212(100%)
Academic status	
Primary Sch. Cert.	0(0.0%)
WASC O'Level	0(0.0%)
OND	0(0.0%)
NCE	0(0.0%)
HND	24(11.32%)
B.Sc.	97(45.75%)
M.Sc./MBA	72(33.97%)
PhD	19(8.96%)
Total	212(100%)
Employment Sector	
Private	120(56.60%)
Public	92(43.40%)
Total	212(100%)

(OND – Ordinary National Diploma, NCE – Nigeria Certificate in Education, HND – Higher National Diploma)

Source: Author's Field Survey, 2025

4.2 Residents' Perceived Adequacy/Satisfaction with Housing Attributes

Table 2 presents the assessment of housing attribute adequacy for the selected private housing estates in the study area. The relative adequacy indices reported in the table were used to group the housing attributes into two broad categories based on their deviation from the overall mean index for the estates. Attributes with values above the mean index were interpreted as exhibiting higher levels of adequacy according to residents' perceptions, whereas those falling below the mean were regarded as reflecting lower perceived adequacy. The computed mean relative adequacy index for the housing attributes was 3.52.

Table 2: Adequacy of Housing Attributes of Selected Private Estates in the Study Area

Housing Attributes	VI (1)	I (2)	J (3)	A (4)	VA (5)	SWV	RAI	Mean Dev	RANK
Potable water supply in your house	4	26	198	300	270	798	3.76	0.24	1 st
Burglary Proof on Windows	5	38	156	340	255	794	3.75	0.23	2 nd
Number of bedrooms	9	30	141	376	235	791	3.73	0.21	3 rd
Residence type	9	24	195	292	265	785	3.70	0.18	4 th
Wall Finishes	8	46	138	352	235	779	3.67	0.15	5 th
Presence of Nets on Windows and Openings	10	22	186	340	220	778	3.67	0.15	5 th
Window Types	8	50	138	364	210	770	3.63	0.11	7 th
Ceiling Materials	13	36	144	356	220	769	3.63	0.11	7 th
Door Types	5	48	150	400	165	768	3.62	0.10	9 th
Sizes of bedrooms	11	36	159	360	200	766	3.61	0.09	10 th
Electricity supply in your house	5	50	162	368	180	765	3.61	0.09	10 th
Floor Finish	11	36	171	344	200	762	3.59	0.07	12 th
Effectiveness of measures preventing dampness	6	36	222	296	200	760	3.58	0.06	13 th
Adequacy of protection against insects and harmful animals	10	40	168	352	190	760	3.58	0.06	13 th
Type and quality of wall construction materials	6	52	171	356	170	755	3.56	0.04	15 th
Type and condition of roofing materials used	7	36	219	320	170	752	3.55	0.03	16 th
Adequacy of kitchen and storage space dimensions	11	62	132	336	210	751	3.54	0.02	17 th
Suitability of living and dining room sizes within the dwelling	7	48	186	352	155	748	3.53	0.01	18 th
Availability of natural daylight in living and dining areas	14	56	159	348	150	747	3.52	0.00	19 th
Sufficiency of natural lighting in bedroom spaces	13	58	147	348	170	736	3.47	-0.05	20 th
Provision of perimeter fencing around the housing unit	7	66	198	260	205	736	3.47	-0.05	20 th
Adequacy of security features within the dwelling	12	52	189	292	190	735	3.47	-0.05	20 th
Effectiveness of noise control within the housing environment	5	54	237	308	120	724	3.42	-0.10	23 rd
Degree of privacy experienced within the dwelling	8	26	300	264	125	723	3.41	-0.11	24 th
Affordability of the housing unit	5	62	240	264	150	721	3.40	-0.12	25 th
Effectiveness of natural ventilation in living and dining areas	11	74	144	352	140	721	3.40	-0.12	25 th
Adequacy of air circulation in bedroom spaces	10	72	207	276	140	705	3.33	-0.19	27 th
Overall level of thermal comfort within the apartment	16	54	243	236	145	694	3.27	-0.25	28 th
Availability and adequacy of fire safety provisions	12	116	147	292	100	667	3.15	-0.37	29 th
Adequacy of natural lighting in kitchen areas	25	48	267	224	90	654	3.08	-0.44	30 th

Source: Author's Field Survey, 2025

A preliminary inspection of the relative adequacy indices suggests that most of the housing attributes could be regarded as adequate, given that the RAI values for all variables were relatively close to the upper limit of the scale. However, closer examination of the mean deviations provides clearer insight into variations in perceived adequacy across the different attributes. As summarized in Table 2, the highest rated housing attributes within the surveyed private estates were potable water supply, burglary proof installations on windows, and number of bedrooms, with RAI values of 3.76, 3.75, and 3.73 respectively.

The prominence of potable water supply as the most adequate attribute can be linked to its fundamental role as an essential utility for human survival and daily living activities. Reliable access to water is widely recognized as a basic necessity for both domestic use and general wellbeing, which likely explains its high rating among residents. This finding contrasts with the outcome of a study by Olawore et al. (2011) on public housing estates in Abeokuta, where water supply was ranked among the most inadequate attributes, recording one of the lowest mean satisfaction scores. Such divergence in findings reinforces common criticisms of public housing provision, particularly with respect to the consistency and reliability of essential services.

Similarly, the high adequacy ratings recorded for burglary proof window installations and number of bedrooms reflect residents' prioritization of security and the ability of housing units to accommodate household size and composition. In contrast, attributes related to environmental comfort and safety recorded lower adequacy levels. Natural lighting in kitchens, fire safety measures, and thermal comfort emerged as the least adequate attributes, with RAI values of 3.08, 3.15, and 3.27 respectively. Other attributes with relatively low adequacy ratings included perimeter fencing and the level of privacy within housing units. The observed inadequacies in these areas may be attributed to limitations at the planning and design stages, where insufficient attention may have been given to these attributes. Earlier studies by Ozo (1990) and Muoghalu (1991) similarly identify such attributes as critical components of neighborhood development, with strong influence on users' perceptions of housing adequacy.

Furthermore, studies in Nigeria and comparable Sub-Saharan contexts show consistently that neighbourhood environment, infrastructure and service provision, ambient conditions, and access to socioeconomic amenities strongly predict residents' housing satisfaction and perceived adequacy (Adediran and Ali 2020; Okoye, 2021; Wakuma 2019; Fakere & Duke-Henshaw, 2023; Aluko, 2011). A more recent study (Mbazor, 2024) further confirms that neighbourhood environment, the housing unit itself and affordability are the dominant domains shaping overall perceptions of adequacy.

4.3 Factors that Influence Users' Satisfaction with the Housing Attributes and Management of the Estates

Principal Component Analysis combined with Factor Analysis (PCA/FA) was employed to reduce the original set of forty-one observed housing features and fitting variables into a smaller number of underlying components. Table 3 presents the initial communalities for the forty-one variables included in the analysis. Following factor extraction, the resulting communalities indicate the proportion of variance in each variable that is shared with the extracted components, thereby reflecting the strength of the underlying data structure. For the extracted factors to provide an adequate representation of the original variables, it is generally expected that post extraction communalities should record relatively high values.

Table 3: Communalities of Respondents

	Initials	Extraction
Availability of shopping and retail services within the estate	1.000	.804
Primary source of water supply serving the housing unit	1.000	.790
Access to educational institutions within or around the estate	1.000	.768
Adequacy of daylight penetration in bedroom spaces	1.000	.746

Timeliness of management response to maintenance complaints	1.000	.738
Ease of access to public transportation services	1.000	.735
Standard and effectiveness of management operations	1.000	.728
Process adopted for selecting and screening tenants	1.000	.724
Provision and functionality of external lighting within the estate	1.000	.722
Location and accessibility of the estate management office	1.000	.715
Ease of access to recognised places of worship	1.000	.711
Sufficiency of natural lighting in kitchen areas	1.000	.710
Effectiveness of natural ventilation in living and dining spaces	1.000	.708
Access to medical and healthcare facilities from the estate	1.000	.707
Extent of commercial activities operating within the estate	1.000	.707
Suitability of bedroom sizes for household needs	1.000	.699
Overall management and upkeep of estate facilities	1.000	.695
Condition and quality of internal road networks within the estate	1.000	.692
Availability of organised refuse disposal facilities	1.000	.691
Adequacy of daylight in living and dining areas	1.000	.687
Level of disturbance or nuisance caused by management staff	1.000	.680
Provision and functionality of sanitary and drainage systems	1.000	.675
Physical condition and characteristics of estate road surfaces	1.000	.667
Availability of designated play areas for children	1.000	.664
Professional conduct and courtesy of estate management staff	1.000	.660
Main source of electricity supply to residential units	1.000	.657
Availability of recreational and sports facilities within the estate	1.000	.645
Efficiency and transparency of rent collection procedures	1.000	.643
Presence of a security post at the estate entrance	1.000	.641
Provision of pedestrian walkways within the estate	1.000	.638
Availability of open spaces and landscaped green areas	1.000	.636
Adequacy of kitchen and storage space dimensions	1.000	.629
Method of refuse collection and waste disposal	1.000	.628
Overall effectiveness of facility management practices	1.000	.621
Quality and condition of access roads leading to the estate	1.000	.617
Adequacy of the number of bedrooms provided	1.000	.605
Level of fresh air circulation within bedroom spaces	1.000	.597
Availability of designated parking spaces within the estate	1.000	.591
Degree of privacy experienced by residents within the estate	1.000	.572
Functionality of street lighting within the estate	1.000	.533
Availability of green and landscaped areas within the housing estate	1.000	.518

(Extraction Method: Principal Component Analysis.)

Source: Author's Field Survey, 2025

4.4 Variance Explained by Residents' Quality of Life Determinants

Table 4 presents the eigenvalues associated with each linear component before extraction, after extraction, and following rotation. Prior to extraction, the analysis comprised forty-one observed variables. The eigenvalue corresponding to each component indicates the amount and proportion of total variance accounted for by that component. In line with conventional factor extraction criteria, only components with eigenvalues greater than one were retained, and these are reported under the extraction sums of squared loadings in Table 4. The cumulative variance explained by the eight retained components, which were considered relevant for grouping the variables, is also shown in the table.

Table 4: Total Variance Explained of Respondents' Factors That Influence Users' Satisfaction with The Housing Attributes and Management

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cum. %	Total	% of Variance	Cum. %	Total	% of Variance	Cum. %
1	16.226	39.577	39.577	16.226	39.577	39.577	5.757	14.042	14.042
2	2.938	7.166	46.742	2.938	7.166	46.742	4.670	11.390	25.432
3	2.019	4.925	51.667	2.019	4.925	51.667	3.939	9.607	35.039
4	1.621	3.953	55.620	1.621	3.953	55.620	3.304	8.060	43.098
5	1.356	3.307	58.927	1.356	3.307	58.927	3.124	7.619	50.717
6	1.296	3.161	62.088	1.296	3.161	62.088	2.739	6.680	57.398
7	1.117	2.724	64.813	1.117	2.724	64.813	2.125	5.182	62.580
8	1.021	2.490	67.302	1.021	2.490	67.302	1.936	4.722	67.302

(Extraction Method: Principal Component Analysis.)

Source: Author's Field Survey, 2025

In factor analytic procedures, it is common for initial solutions to produce components that explain a substantial share of the variance, with individual variables loading strongly on one component and weakly on others. To achieve a clearer and more interpretable factor structure, rotation of the component matrix was therefore undertaken. The rotated component matrix depicting residents' satisfaction with housing attributes and estate management is presented in Table 5. This matrix illustrates the underlying structure of the analyzed variables and forms the basis for reducing the original variables into eight distinct factors. For interpretative clarity, only variables with factor loadings of 0.50 or higher are emphasized. Furthermore, factors were assigned labels and discussed only where at least three variables exhibited loadings above this threshold. Based on this criterion, factors one through seven were identified, named, and subsequently examined.

4.5 Extracted Factors of users' satisfaction with housing attributes and management in the Study Area

Rotation of the factor solution converged after eight iterations, indicating a stable and interpretable structure. Table 5 presents the variables associated with each extracted factor and their respective factor loadings, and only variables with factor loadings ≥ 0.50 are displayed in the rotated component matrix.

Table 5: Rotated component matrix of respondents

	Component							
	1	2	3	4	5	6	7	8
Availability and adequacy of refuse disposal facilities within the estate	.580							
Availability of retail and shopping services within the estate							.883	
Access to educational institutions within the estate							.865	
Availability of recreational and sports amenities within the estate							.539	
Provision of designated play areas for children								
Availability of designated parking facilities within the estate								
Presence of open spaces and landscaped green areas	.620							
Timeliness of management response to maintenance complaints	.806							
Process used for tenant screening and selection	.780							
Location and ease of access to the estate	.748							

management office	
Procedure adopted for rent collection	.671
Overall effectiveness of facility management operations	.711
Professional conduct and courtesy of management staff	.589
Extent of disturbance or nuisance caused by management personnel	.567
Standard and effectiveness of managerial practices	.690
Maintenance and management of shared facilities within the housing estate	.647
Primary source of water supply to the dwelling units	.789
Presence of a security post at the main entrance of the estate	.588
Degree of privacy enjoyed by residents within the estate	
Availability of green and landscaped areas within the housing estate	
Ease of access to medical and healthcare services	.501
Accessibility to public transportation services	.684
Ease of access to places of worship	.657
Provision and functionality of external lighting within the estate	.536
Quality and condition of the internal road network	.604
Extent of commercial activities operating within the estate	.719
Suitability of bedroom sizes for household needs	.599
Adequacy of the number of bedrooms provided	
Sufficiency of kitchen and storage space dimensions	.691
Adequacy of natural daylight in living and dining areas	.730
Sufficiency of daylight penetration in bedroom spaces	.790
Adequacy of natural lighting in kitchen areas	.768
Effectiveness of natural ventilation in living and dining spaces	.701
Level of fresh air circulation within bedroom spaces	.532
Main source of electricity supply to residential units	.581
Method of refuse collection and waste disposal	.628
Quality and condition of access roads leading to the estate	.687
Physical characteristics and condition of roads within the estate	.666
Presence and adequacy of pedestrian walkways within the estate	.550
Functionality of street lighting within the estate	.583

(Extraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization.)

Source: Author's Field Survey, 2025

Factor one recorded strong and positive loadings for eight variables related primarily to estate management and administrative practices. These include provision of refuse disposal facilities (.580), availability of open spaces and green areas (.620), responsiveness to maintenance requests (.806), tenant selection procedures (.780), location of the estate management office (.748), rent collection procedures (.671), general facility management (.711), and courtesy of management staff (.589). Given the nature of these variables, this component was interpreted as a managerial factor. The second factor comprised six variables reflecting the adequacy of internal environmental conditions within housing units. These variables include adequacy of cooking and storage space sizes (.691), adequacy of natural lighting in living and dining areas (.730), bedrooms (.790), and kitchens (.768), as well as adequacy of fresh air circulation in living and dining spaces (.701) and bedrooms (.701). Collectively, these attributes describe residents' assessment of basic internal utilities and environmental comfort and were therefore classified as the utility adequacy factor.

Variables loading highly on the third factor relate mainly to estate level infrastructure. These include the main source of power supply to housing units (.581), mode of refuse collection and disposal (.628), access roads to the estate (.687), quality of internal road networks (.666), presence of walkways (.550), and street lighting within the estate (.583). Based on this loading pattern, the factor was designated as the infrastructural factor. The fourth factor is defined by variables associated with facility upkeep and managerial conduct. These include the level of nuisance caused by management staff (.567), quality of managerial display (.690), and management and maintenance of estate facilities (.647). This component was accordingly interpreted as the facilities maintenance factor. The fifth factor consists of three variables that loaded strongly together, namely internal road network adequacy (.604), presence of commercial activities within the estate (.719), and adequacy of bedroom sizes (.599). These variables reflect a mix of spatial provision and functional convenience within the estate environment.

Factor six is characterized by variables relating to residents' access to external services and facilities. These include accessibility to medical and healthcare services (.501), accessibility to public transport facilities (.684), accessibility to places of worship (.657), and adequacy of external lighting within the estate (.536). This group of variables was therefore interpreted as the accessibility to facilities factor. The final factor influencing residents' satisfaction comprises three variables relating to the availability of neighborhood level services. These include provision of shopping facilities within the estate (.883), availability of educational facilities (.865), and provision of recreational or sporting facilities (.539). This factor was designated as facilities availability. The eighth component did not satisfy the minimum interpretability requirements, as it contained fewer than three variables with significant factor loadings. In factor analytic studies, it is generally recommended that a retained factor should have at least three substantial loadings to ensure stability and meaningful interpretation of the factor structure.

In all, the factor analysis results indicate that residents' perceptions of housing adequacy within the surveyed private estates are primarily influenced by managerial effectiveness, utility adequacy, infrastructure provision, facility maintenance, accessibility to essential services, and availability of basic neighborhood facilities.

4.6 Discussion of Findings

The socio-demographic profile of respondents indicates a predominantly male, well-educated, and economically active population, with the 31–45 years age group forming the majority (60.85%) and over 80 percent holding HND, B.Sc., M.Sc. or PhD qualifications. This profile matters for interpretation because literate and economically active households tend to have higher expectations of service delivery and greater ability to articulate deficiencies in infrastructure and management, which can raise reported standards for what constitutes adequate housing (Adegbile, 2019; Musa et al., 2021).

Potable water emerged as the highest ranked attribute of adequacy in the estates surveyed (RAI = 3.76), followed closely by burglary proofing and number of bedrooms (RAI 3.75 and 3.73 respectively). The prominence of water supply is consistent with extant studies showing that reliable access to potable water is a key determinant of residential satisfaction and perceived housing adequacy (Babalola et.al., 2020; Ozabor, 2024). Where water is secure, residents often rate overall housing adequacy higher because water underpins hygiene, cooking and other household functions; conversely, water insecurity erodes perceived adequacy even when structural finishes are good (Adegbile, 2019). The finding that security features are highly rated aligns with evidence that perceived safety materially influences satisfaction and market value of housing in Lagos.

Despite generally positive RAI scores, the study found notable weaknesses in attributes related to thermal comfort, fire safety, kitchen lighting, and privacy, which ranked among the lowest (RAI 3.27, 3.15, 3.08, 3.41 respectively). These deficits point to design and delivery gaps that are commonly reported in studies of estate and apartment quality in Nigeria. For example, inadequate consideration for

passive cooling, ventilation and day-lighting is a recurring problem in both private and public residential projects, and it is linked to building design choices, materials and cost-cutting during delivery (Mobolaji, 2025; Fakere et al., 2023). Similarly, the low score for fire safety echoes concerns raised in maintenance and facilities reviews, which identify lax enforcement of safety standards and poor routine maintenance as systemic weaknesses. Therefore, the findings mirror broader structural issues in that estates may meet minimum spatial and security expectations, yet fall short on environmental comfort and life-safety measures that materially affect liveability.

The factor analysis results mirror drivers of perceived adequacy. Seven interpretable factors were extracted and labelled Managerial, Utility Adequacy, Infrastructural, Facilities Maintenance, Accessibility, and Facilities Availability, among others. The prominence of a Managerial factor (rent procedures, response to maintenance requests, tenant selection, general facility management, courtesy of staff) highlights that estate governance strongly conditions residents' lived experience. Also, the PCA result also reinforces calls to treat management as a core dimension of housing adequacy, not an afterthought. Also, the grouped Utility Adequacy and Infrastructural factors (lighting, natural ventilation, kitchen lighting, power source, access roads, refuse collection, walkways, street lighting) indicate that physical utilities and estate infrastructure jointly shape perceptions. This complements studies that find infrastructure delivery and utility reliability are decisive both for satisfaction and for housing demand choices in Lagos, including proximity to transport and dependable power and waste services (Ozabor, 2024; Mobolaji, 2025). Practically, this suggests that upgrading utilities and road/walkway networks inside estates will have outsized effects on perceived adequacy.

5. CONCLUSION

This study set out to evaluate the adequacy of private housing estates in Alimosho Local Government Area of Lagos State by examining key housing attributes and identifying the factors that shape how residents perceive adequacy. The results show that although the selected private estates generally perform well in several areas, particularly in the provision of potable water, security features such as burglary proofing and the number of bedrooms available to households, there are still important gaps that undermine overall residential satisfaction. Attributes relating to indoor comfort, such as thermal regulation, natural lighting and ventilation, emerged as some of the least adequate features within the estates. Fire safety provisions were also found to be insufficient, highlighting the need for improvement in safety related design elements.

The factor analysis reinforced the complexity of housing adequacy by revealing that residents' perceptions are influenced by a wide range of interrelated conditions. Managerial efficiency, utility provision, infrastructural quality, facility maintenance, accessibility to essential services and the availability of community facilities all play decisive roles in shaping user satisfaction. These findings demonstrate that housing adequacy extends far beyond the physical structure of the dwelling. It is equally rooted in management practices, infrastructural support and the broader environmental and social context in which residents live.

The study concludes that while private estates in Alimosho show considerable potential for providing adequate housing, the level of performance is uneven across specific attributes. Addressing the identified shortcomings will be essential for enhancing long term liveability, strengthening user satisfaction and ensuring that private estate development continues to serve as a meaningful contributor to Lagos State's housing landscape.

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