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Assessing Occupants' Satisfaction with Housing Quality in Housing Estates in Abuja, Nigeria

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A B S T R A C T

Understanding occupants' satisfaction with housing quality is critical for improving urban living standards and guiding policy-making for housing development and investment in rapidly expanding cities such as Abuja, the capital city of Nigeria. Despite the extensive body of research on housing in Nigeria, there remains a significant gap in understanding how specific determinants of housing quality affect occupants' satisfaction within the context of housing estates in Abuja. Existing studies often overlook the relationship between these determinants and satisfaction levels, focusing instead on broader aspects of housing. This study seeks to address this gap by assessing how four identified key determinants (Standard Dwelling Units, Security, Accessibility, and Occupants' Autonomy) influence occupants' satisfaction with their housing quality. Inferential analysis, including correlation and multiple regression, was employed to examine the relationships between these variables and occupants' satisfaction. The findings indicate a positive correlation between the key determinants of housing quality and occupants' satisfaction. Multiple regression analysis further indicate a significant positive relationship, emphasizing the need to enhance housing quality for improved satisfaction among occupants. The study found that all the identified determinants: Standard Dwelling Units, Security, Accessibility, and Occupants' Autonomy play significant roles in influencing occupants' satisfaction with housing quality. These results underscored the importance of adopting integrated strategies that include the proper planning and design of dwelling units, the use of sustainable construction techniques and materials, and the enhancement of accessibility and supporting infrastructure. In addition, ensuring and protecting occupants' rights is crucial. By prioritizing occupants' autonomy, housing estates can foster a sense of ownership and belonging among residents, ultimately contributing to higher levels of housing satisfaction. Implementing such strategies are essential for boosting housing satisfaction and promoting sustainable urban development in Abuja and other cities across Nigeria.

Keywords: Abuja; Housing; Housing Quality; Housing Estate; Occupants' Satisfaction

1. INTRODUCTION

The magnitude of Nigeria's housing needs is evident in the significant number of households living in substandard housing units (Olotuah, 2005). This phenomenon is particularly visible in the Federal Capital Territory Abuja, as well as in other major urban areas across Nigeria, where acute housing shortages highlight the quantitative deficiency, and the poor quality of the existing housing stock indicates a qualitative deficiency. These challenges are also prevalent in rural areas. According to Makinde (2013), housing shortages have become a persistent feature of the urbanization process in developing countries. Contributing factors include the high cost of land, the insufficient and improper allocation of available funds, and poor management practices. Makinde (2013) also noted that in many developing countries, including Nigeria, the ability to afford housing varies significantly. This disparity results in lower-income households residing in cheaper, smaller, and lower-grade dwellings, typically located closer to city centers and major employment hubs. In contrast, higher-income households tend to occupy larger, higher-quality dwellings with better facilities and public services, although such dwellings are in limited supply.

Housing quality is often defined by the physical condition of a dwelling unit, the characteristics and quality of the surrounding environment, and the level of satisfaction experienced by its occupants (Mahachi, 2021). Osman and Lemmer (2002) further described housing quality as the standard of the residential environment that ensures accessible, safe, and aesthetically pleasing accommodation in a sustainable manner. This topic has garnered global attention, as it is recognized that housing quality has a significant impact on the welfare, health, and productivity of individuals and households (Coker et al., 2007; Krieger and Higgins, 2002). The quality of a residential area serves as a reflection of a city's planning, development, and the allocation of resources among different socio-economic classes, directly influencing the quality of life of its occupants (Coker et al., 2007). Consequently, improving housing quality is a significant challenge, particularly in developing countries like Nigeria (Olotuah, 2006).

In Nigeria, urban areas face a dual challenge: deficiencies in both the quantity and quality of housing. Given the capital-intensive nature of housing, it is essential that investments by the government and other stakeholders are strategically directed to create decent and high-quality residential environments. Properly allocated resources are crucial to ensuring value for money in these investments. To address these challenges, the National Housing Policy was formulated in 1991, leading to the establishment of the National Housing Fund Program and the enhancement of the Mortgage

Sector in Nigeria. This policy aimed to provide sustainable solutions to the housing issues faced by citizens, addressing both qualitative and quantitative deficiencies. The policy underwent revisions in 2004, 2006, and 2012 (FGN, 2002; Olofinji, 2015). Despite these efforts to develop an efficient policy framework for the housing sector, millions of Nigerians, including those in Abuja, continue to live in substandard housing. Ironically, many upscale houses remain unoccupied, often becoming shelters for unwanted occupants and pests, thereby posing a nuisance to surrounding communities.

The deficiencies in both the quantity and quality of housing in Nigeria is exacerbated by rapid population growth, the limited economic capacity of most households, and inadequate public resources due to the competing societal needs for the meager public funds. In addition, the general increase in building costs has contributed to poor housing and environmental conditions in urban centers like Abuja. The poor housing quality in Nigeria is evident in the widespread presence of structurally unsound and substandard houses in both urban and rural areas (Olotuah, 2003; Olotuah and Adesiji, 2005). This situation has not only led to frequent building collapses in Abuja and other cities but has also resulted in health challenges for occupants, ultimately leading to avoidable health conditions and, in some cases, the death of Nigerian citizens.

A review of the available literature revealed that concepts such as satisfaction, choice, preference, tenure, affordability, acquisition/ownership, and sustainability are closely related to housing quality. Studies have shown significant similarities among these concepts, highlighting their importance in the assessment of housing quality (Amole, 2009; George, 2006; Jiboye, 2009). In addition to these concepts, numerous studies have identified various factors that influence housing quality. These factors include economic, social, and environmental determinants, which play crucial roles in shaping the overall quality of housing (Amole, 2007; Mallo and Anigbogu, 2009; Amao, 2012). Understanding these factors is essential for developing effective strategies to improve housing conditions. Furthermore, the literature also points to specific challenges faced by urban areas, with particular attention to Abuja, Nigeria. Several studies have highlighted the critical housing issues in Nigeria, especially the prevalence of low-quality housing in estates and suburban areas (Mabogunje, 1975; Olotuah, 2003; Olotuah and Adesiji, 2005). These challenges underscore the need for targeted interventions to enhance the quality of housing in rapidly urbanizing areas.

Despite the extensive research on housing quality, there remains a scarcity of literature focusing on the assessment of occupants' satisfaction with housing quality in Abuja, particularly in understanding the relationship between occupants' satisfaction and the determinants of housing quality. This research aims to fill this gap by investigating the connection between these determinants and occupants' satisfaction, thereby contributing to a more comprehensive understanding of the housing sector in Nigeria. Drawing from insights gained through an extensive literature review and previous studies (Corporation for Supportive Housing [CSH], 2009; HUD, 2011; Brkanić, 2017; Ibrahim, 2019), this research identified four key determinants of housing quality that significantly influence occupants' satisfaction, they are: Standard Dwelling Units, Security, Accessibility, and Occupants' Autonomy. The primary objectives of this study are to: (i) determine the influence of Standard Dwelling Units on occupants' satisfaction in housing estates in Abuja; (ii) examine the influence of Security on occupants' satisfaction in housing estates in Abuja; (iii) investigate the influence of Accessibility on occupants' satisfaction in housing estates in Abuja; and (iv) determine the influence of Occupants Autonomy on occupants' satisfaction in housing estates in Abuja.

Basically, the study developed four research questions in relation to the study objectives, they include: (i) to what extent does Standard Dwelling Units affect occupants' satisfaction in housing estates in Abuja?; (ii) to what extent does Security affect occupants' satisfaction in housing estates in Abuja?; (iii) to what extent does Accessibility affect occupants' satisfaction in housing estates in Abuja?; and (iv) to what extent does Occupants Autonomy affect occupants' satisfaction in housing estates in Abuja?.

Also, in line with the specific objectives and research questions of this study, the following hypotheses were formulated in null form, subject to acceptance or rejection based on the result of the analysis:

H_1: Standard Dwelling Units does not have significant effect on occupants' satisfaction in housing estates in Abuja;

H_2: Security does not have significant effect on occupants' satisfaction in housing estates in Abuja;

H_3: Accessibility does not have significant effect on occupants' satisfaction in housing estates in Abuja; and

H_4: Occupants Autonomy does not have significant effect on occupants' satisfaction in housing estates in Abuja.

2. LITERATURE REVIEW

2.1 The Study Area

Nigeria's capital Abuja is centrally located in the country (Fig. 1). It lies between latitudes 6^o 45' and longitudes 7^o 39' north of the equator. Abuja was carved out of three neighboring states of Plateau, Niger and Kwara and has a land area of about 8,000 square kilometers. The master plan of Abuja was designed to accommodate about 3.2 million occupants, but currently, the population of Abuja has grown geometrically since creation to about 6 million with only about 48% of development of the city achieved. In Nigeria, all lands in the FCT are vested in the Federal Government which created the agency of the Federal Capital Development Authority (FCDA), to control the development of the FCT (Fig. 2) (Uchenna, 2013).

Figure 1: Map of Nigeria showing the 36 states and the Federal Capital Territory Abuja

Source:Adapted from Ministry of the Federal Capital Territory, 1998 by Katrina Strömdahl.

Abuja is home to numerous private and public housing estates which serve to accommodate the growing population of the city. For this research, three different housing estates were selected from across the city, they include the Federal Housing Authority (FHA) Gwarinpa Housing Estate, FHA/ENL/BAUHAUS Partnership Estate Apo/Guzape in Abuja Municipal Area Council (AMAC), and FHA Mass Housing Estate Zuba in Gwagwalada Area Council (GAC). The selected housing estates are spread across the city and comprise of different house types accommodating different family sizes.

2.2 Housing Satisfaction

Jolaoso (2001) and Abosede (2006) defined housing as not only the physical structures used for shelter but also the surrounding environment, including all necessary facilities and equipment essential for the physical health and social well-being of both individuals and families. Clark (2009) described housing as a form of shelter that reasonably maintains, protects, and supports human health, ensuring safety, sanitation, and an environment that upholds dignity. According to Abosede (2006), housing also meets social needs, such as privacy, social well-being, and protection from external threats and disturbances. Ajayi et al. (2015) suggested that housing is often perceived as a large entity comprising numerous units that exhibit characteristics like physical quality, location, and the standards of services provided by both government and private owners, as well as the attributes of the surrounding neighborhood. Occupants' satisfaction has long been a tool for evaluating the success of housing development projects. Since the early 1960s, occupants' satisfaction has served as a foundation for optimizing the architectural design of large housing developments by collecting feedback from occupants regarding the physical features of proposed housing projects and integrating their views into the design process.

Satisfaction studies span various disciplines within management, social sciences, and the built environment. Broadly, satisfaction refers to the subjective evaluation of how well products or services meet users' or customers' needs and expectations (Parker and Mathews, 2001; Ueltschy et al., 2007; Hanif et al., 2010; Ibem, et al., 2013). Streimikiene (2015) defined housing satisfaction as the perceived gap between a respondent's needs and aspirations and the reality of their current residential environment. Mridha (2015) further described housing satisfaction as the pleasure or gratification experienced from living in a particular place.

Amole (2009) posited that housing satisfaction is a valuable criterion for evaluating housing quality because it reflects the level of success, measures users' emotional and cognitive responses, identifies unattractive aspects of the housing environment, and anticipates user reactions to future conditions. It also aids in determining the contributions of different factors to satisfaction, distinguishing between various factors, and understanding the relationships between different dimensions of housing. According to Poljanec (2001), user satisfaction is the most critical indicator of housing quality; the higher the quality of the apartment, the higher the expected satisfaction of its occupants. Ebiaride and Ume (2015) concurred, noting that studies on residential satisfaction enhance understanding of the key sources of satisfaction and dissatisfaction among occupants, the factors influencing their satisfaction levels, and how occupants might respond if dissatisfied with their housing conditions. Ajayi et al. (2015) further explained that housing satisfaction refers to the feelings of contentment and happiness associated with one's living environment.

2.3 Housing Quality and Occupants' Satisfaction

Given that individual households vary in their perceptions and considerations of what constitutes satisfactory qualitative housing, it is crucial to establish certain criteria to determine the extent to which a household derives satisfaction from the quality of the end product. Olotuah and Taiwo (2015) highlighted that meeting the specific needs of families is a vital criterion in evaluating housing quality. Therefore, the value of a house is largely determined by how well it satisfies or frustrates the needs of its occupants. They further argued that housing quality is often assessed based on the

quality of design, building materials, construction standards, and the availability and performance of public amenities. Consequently, the satisfaction of the user population with their housing and its environment is a critical determinant of overall housing quality.

Housing quality can be understood as the standard of a residential environment that provides occupants with accessible, safe, and aesthetically pleasing accommodation in a sustainable manner (Osman and Lemmer, 2002). Lawrence (1995) noted that the perception of housing quality can vary across different dimensions, depending on the perspectives and intentions of researchers and policymakers. For instance, a study conducted in the USA (HUD, 2011) identified 13 variables that can describe or measure housing quality standards (HQS), including sanitary facilities, food preparation and refuse disposal, space and security, thermal environment, illumination and electricity, structure and materials, interior air quality, lead-based paint, access, site and neighborhood, sanitary condition, water supply, and smoke detectors. Meanwhile, the Corporation for Supportive Housing (CSH, 2009) in the U.S. proposed seven dimensions for evaluating housing quality: administration, management, and coordination; physical environment; access to housing and services; supportive services design and delivery; tenant rights; property management and asset management; input and leadership; and data, documentation, and evaluation.

In addition, Son et al. (2003) suggested that housing quality is influenced by improved housing conditions, such as an increased average size of residence, more area per household and per person, a decreased number of persons per room, and a higher ratio of households living in rooms equipped with modern facilities, including hot running water. This perspective aligns with the view of Biondic and Sepic (2002), who asserted that the quality of the dwelling environment should be viewed comprehensively. Housing quality should be considered across economic, political, ecological, architectural, technical, and qualitative dimensions, noting that the relative importance of these dimensions varies depending on the societal context. As a result, housing availability, affordability, and quality have emerged as more integrated concepts, replacing generalized criteria for defining housing quality (Biondic and Sepic, 2002).

Ultimately, housing quality is determined by the overall perception of occupants, which depends on the level of acceptability or non-acceptability. Bradley and Putnick (2012) emphasized that housing acceptability is influenced by factors such as construction materials, design and size of spaces, construction type, and housing services. Other indices include lifestyle, income levels, domestic habits, space arrangement, values and priorities, proximity to the workplace or town center, availability of adequate facilities within the dwelling, privacy, design, function and aesthetics, noise, pollution, the presence of unfriendly neighbors, and personal security.

2.4 Housing Quality in Nigeria

The housing situation in many Nigerian cities is marked by the presence of squatters, squalors, slums, and numerous inadequacies (Jiboye, 2004). Both qualitative and quantitative housing issues are prominent challenges in the country. The qualitative aspect concerns the maintenance of existing housing, which is crucial for preserving and upgrading lower-quality dwellings to meet acceptable national standards. Research has consistently shown that housing problems remain a significant subject in Nigeria (Makinde, 2013). The rapid population growth, low economic capacity of most urban households, inadequacy of public resources, and a general increase in building costs have exacerbated the acute housing and environmental challenges in Nigerian urban areas (Olotuah, 2006). Housing quality in Nigeria, including in its commercial capital Lagos, and the administrative capital Abuja, is generally poor, as established by Olotuah (2003), Olotuah and Adesiji (2005), and Olotuah (2006). This situation is particularly prevalent in estates and suburban areas, where there is a lack of basic infrastructure, and the room occupancy ratio is high, with four to five residents per habitable room. In some extreme cases, entire families of up to 10-12 persons live in a single room. The deficiency in good-quality housing is further compounded by the fact that Lagos and Abuja serve as major business and bureaucratic centers, attracting a large influx of people and leading to unprecedented population growth.

2.5 Conceptual Framework

The key determinants of housing quality selected for this research (Standard Dwelling Units, Security, Accessibility, and Occupants' Autonomy) serve as independent variables while Occupants' Satisfaction stand as the dependent variable as indicated in Fig. 2 below.

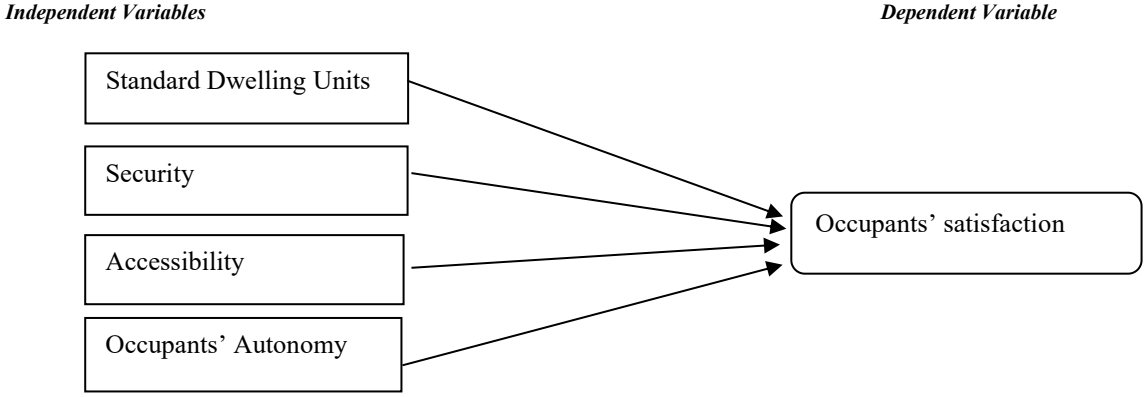

Figure 2: Conceptual Framework showing the independent and dependent variables for the study

Source: Developed by Authors (2024)

3. METHODOLOGY

3.1. Research Design

This research employed a survey-based cross-sectional design to gather data from three housing estates in Abuja, with each selected estate accommodating occupants of different ethnicity, age, gender, profession, vocation, religion, economic and social background. The data collection process involved both primary and secondary sources. Primary data was obtained through structured questionnaires administered to occupants of the apartments who can read and understand the questions. Secondary data was sourced from literature review of related studies. The research population was determined at 40,674 occupants which comprised the total number of occupants that reside in the selected estates: (Federal Housing Authority (FHA) Gwarinpa Housing Estate, FHA/ENL/BAUHAUS Partnership Estate Apo/Guzape in Abuja Municipal Area Council (AMAC), and FHA Mass Housing Estate Zuba in Gwagwalada Area Council (GAC)). However, the sample size for the research as determined using Taro Yamane's formula for sample size calculation was established at 396. This determination considered a 5% margin of error and a 95% confidence level. Furthermore, of the 396 administered questionnaires, 300 completed questionnaires were retrieved, resulting in a valid response rate of 75.8 %.

Purposive and random sampling techniques were used to select the respondents based on their willingness to participate in the exercise. The questionnaire used the Likert type scale of '1' for very insignificant '2' for significant, '3' for moderate, '4' for significant and '5' for very significant. The use of a close-ended questionnaire was vital to eliminate the subjective bias of interest in questions.

3.2. Method of Data Analysis

The analysis for the research was conducted using inferential analysis, where correlation analysis was employed to determine the existence, the direction and strength of the relationship between the variables while multiple regression analysis was used for hypotheses testing. The analysis was conducted using SPSS (version 23.0).

4. FINDINGS AND DISCUSSION

It was revealed from the methodology that a sample size of 396 was obtained from the population of 40,674 occupants in Federal Housing Authority (FHA) Gwarinpa Housing Estate, FHA/ENL/BAUHAUS Partnership Estate Apo/Guzape in Abuja Municipal Area Council (AMAC), and FHA Mass Housing Estate Zuba in Gwagwalada Area Council (GAC). Furthermore, 75.8% response rate was achieved with 300 respondents. This response rate is considered appropriate according to the assertion by Sekeran and Bougie (2013) that a 30% response rate is considered adequate for survey analysis.

4.1 Correlation Matrix and Multicollinearity Test

This section demonstrates the correlation matrix among the exogenous and endogenous latent construct and the result shows that no multicollinearity exist as all the independent variables scores are less than the cut-off value of 0.9 (Hair et al., 2016). In addition, the findings could be confirmed with the test of Tolerance Level and Variance Inflation Factor (VIF) conducted to check multicollinearity.

Table 1: Correlation Matrix

	OST	**SDU**	**SEC**	**ACC**	**AUT**
OST	1				
SDU	0.568	1			
SEC	0.654	0.329	1		
ACC	0.481	0.712	0.618	1	
AUT	0.415	0.274	0.831	0.445	1

Note: *OST= Occupants' Satisfaction, SDU= Standard Dwelling Units, SEC= Security, ACC= Accessibility, AUT= Occupants' Autonomy.*

In statistics, multicollinearity occurs when there is a high correlation between independent variables, which automatically results in an increase in standard errors of the variable coefficients and in turn makes them to be statistically insignificant (Kothari, 2014). Accordingly, the thresholds of VIF and tolerance level are above 10 and below 0.10 respectively. Precisely, when the VIF exceeds 10 or when the tolerance level falls below, it indicates the presence of multicollinearity. Based on this, the issue of multicollinearity does not exist among the independent variables of this study.

Table 2: Test of Multicollinearity

	Collinearity	
Independent Variables	**Tolerance**	**VIF**
Standard Dwelling Unit	.319	2.171
Security	.261	1.094
Accessibility	.146	2.487
Occupants Autonomy	.219	1.547

*Source: SPSS output 2*024

4.2 Coefficient of Determination (R^2)

R-Square analysis explains the level of variation caused by the independent variable(s) on the dependent variable of a study. For this study, the R-square result expressed that the independent variables explained 51.3% changes in occupants' satisfaction with R^2 of 0.513, Adj. R^2 of 0.486. This therefore implies that the independent variables (Standard Dwelling Units, Security, Accessibility and Occupants' Autonomy) account for 51.3% of variance in occupants' satisfaction of housing estates in Abuja.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.239[a]	.513	.486	.138647

a. Predictors: (Constant), OS

4.3 Regression Analysis and Hypothesis Testing

Regression analysis is a statistical technique that explains the direction and the significance of relationships between dependent and independent variables (Hair et al., 2016). Also, it is a method that measures the extent of the relationship between the variables of a study (Sekaran and Bougie, 2013). For the purpose of this study, multiple regression analysis was employed to test the research hypotheses that explain the extent of relationships that exist between the independent variables (Standard Dwelling Units, Security, Accessibility and Occupants' Autonomy). Consequently, regression analysis was conducted as presented in Table 4, and the outcome of the analysis was used for the study's hypotheses testing.

Table 4: Regression result on the influence of multi-tenancy challenges on occupants satisfaction

Model	Unstandardized Coefficients		Standardized Coefficient	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.637	.218		7.618	.000
SDU	.829	.104	.819	2.978	.012
SEC	1.396	.117	.904	6.456	.000
ACC	.701	.087	.611	2.484	.023
AUT	.297	.099	.264	.939	.047

a. Dependent Variable: OST

The results of multiple regression analysis revealed that Standard Dwelling Units, Security, Accessibility and Occupants' Autonomy have significant positive effect on occupants' satisfaction of housing estates in Abuja with P-values of 0.012, 0.000, 0.023 and 0.049 respectively. In view of that, the null hypotheses one, two, three and four (H_1, H_2, H_3 and H_4) are rejected and the alternate hypotheses are accepted. The following section presents the discussion and justification of the research findings in comparison with previous studies.

4.4 Discussion of Results

This section discusses the implications of the study's results and justifies the findings by comparing them with previous research for validation. Firstly, 'Standard Dwelling Units' refers to residential structures that meet specific predefined criteria concerning size, design, amenities, and construction standards, as set by government or building/housing regulating agencies. These criteria are intended to ensure that the housing provided is safe, sustainable, and conducive to healthy living. Based on this understanding, the first hypothesis of the study (H_1) proposed that 'standard dwelling units'

has a significant positive influence on occupants' satisfaction with housing quality in housing estates in Abuja. As anticipated, the results show a significant positive relationship between standard dwelling units and occupants' satisfaction with housing quality, with a Beta value of 0.829 and a P-value value of 0.012. This finding is supported by the study conducted by Maina et al. (2021), which assessed satisfaction with dwelling unit attributes and infrastructure within selected housing estates in northern Nigeria. The study found that occupants were generally satisfied with dwelling unit factors in the housing estates, a result that mirrors the findings of the current study. Similarly, the results align with those of Sivanathan et al. (2019), who investigated the critical factors of building maintenance affecting occupants' satisfaction levels in public low-cost housing in Indonesia. The study found that occupants' satisfaction increased when building maintenance, physical, and environmental services were improved. This implies that improvements in the quality of dwelling units directly enhance occupants' satisfaction, further validating the positive relationship observed in the current research.

Secondly, 'Security' in this study refers to the protection of the surrounding environment, ensuring the well-being, stability, and safety of residential areas. Given this concept, security was hypothesized to have a significant positive effect on occupants' satisfaction with housing quality in Abuja estates, leading to the formulation of the second null hypothesis (H_2). Consistent with the predicted relationship, the results revealed a significant influence of security on occupants' satisfaction with housing quality, as indicated by a Beta value of 1.396 and a P-value of 0.000. Consequently, the second null hypothesis, which predicted a lack of relationship, was rejected in favor of the alternate hypothesis. This finding is supported by the study conducted by Idakwoji and Emusa (2024), which investigated the influence of multi-tenancy housing challenges on occupants' satisfaction in Abuja. The study found a significant positive effect of safety on occupants' satisfaction in the study area, corroborating the results of the current study. In addition, the results align with the study by Hapsari et al. (2024), which conceptually assessed comfort and security from the occupants' perspective. The study concluded that there is a need for improved security in Indonesian estates to enhance occupants' satisfaction, a conclusion that mirrors the findings of the current research.

Thirdly, 'Accessibility' refers to the ease with which residents and visitors can access and move within a housing estate, as well as the estate's connection to essential public services and broader infrastructure. The third hypothesis (H_3) proposed that accessibility has a significant positive effect on occupants' satisfaction with housing quality in Abuja. The result of regression analysis supported this hypothesis, revealing a significant positive relationship between accessibility and occupants' satisfaction, as shown by a Beta value of 0.701 and a P-value of 0.023. Consequently, the null hypothesis was rejected, and the alternate hypothesis was accepted. This finding is consistent with the results of a study by Onifade (2021), which investigated the effect of environmental factors on occupants' housing satisfaction in Ogun State, Nigeria. The study found that accessibility, particularly the proximity to social amenities such as schools, workplaces, police stations, and marketplaces, had a significant positive effect on residents' housing satisfaction. This supports the conclusion that improved accessibility enhances the overall satisfaction of occupants with their housing quality.

Lastly, "Occupants' Autonomy" in this study refers to the degree of independence and control that occupants/tenants have over their living conditions and decisions within their rented apartments. The study hypothesized that occupants' autonomy significantly enhances occupants' satisfaction with housing quality, leading to the formulation of the fourth hypothesis (H_4). As predicted, the hypothesis was supported, with a coefficient of 0.297 and a P-value of 0.047. This indicates that an increase in privacy and autonomy contributes to greater occupants' satisfaction. The result aligns with the findings of Loengbudnark et al. (2023), who investigated the impact of occupants' autonomy on satisfaction and building energy efficiency in Canada. Their analysis revealed that perceived control positively influences perceived productivity through satisfaction. Similarly, the study's results agree with Delic et al. (2021), which investigated the effect of autonomy on job satisfaction and performance, indicating that autonomy has a significant and positive relationship with job satisfaction and performance. This suggests that the principle of autonomy is a critical factor in enhancing satisfaction, both in housing quality and other domains like job performance.

5. CONCLUSION AND RECOMMENDATIONS

In conclusion, this study assessed occupants' satisfaction with housing quality in residential estates in Abuja, Nigeria. The findings highlight the pivotal role of thoughtful design and meticulous attention to the qualitative attributes of the built environment, coupled with efficient managerial services, in enhancing the quality of life and occupants' experience within residential spaces. A secure and safe environment is identified as a fundamental driver of sustainable community development, crucial for achieving occupants' satisfaction. The research also highlights the significance of accessibility to essential social amenities, such as marketplaces, schools, public health facilities, public transportation facilities such as bus and rail terminals/stops, event lounges, parks/gardens and police stations, which are integral to the convenience and well-being of occupants. The proximity of these amenities plays a crucial role in determining overall satisfaction. Furthermore, the study reveals that occupants' autonomy within residential spaces is a critical factor in enhancing occupants' well-being and satisfaction. By allowing individuals to personalize their living environment according to their preferences, even in rental properties, autonomy significantly contributes to the overall quality of life. These findings provide valuable implications for housing policy and estate management practices aimed at improving housing quality and occupants' satisfaction in Abuja.

Based on the conclusion drawn from this study, it is evident that the selected determinants significantly enhance occupants' satisfaction with housing quality in housing estates in Abuja. To sustain and further improve these outcomes, the following recommendations are proposed:

1. Enhancement of Housing Standards: This study recommends that regulatory bodies overseeing estate communities in Abuja should institute comprehensive maintenance and modernization programs. Regular inspections should be mandated to ensure that housing units consistently meet or

exceed established quality standards. Furthermore, initiatives should be developed to upgrade older housing units with energy-efficient systems and sustainable materials, thereby improving living standards and occupants' satisfaction.

2. Strengthening Security Measures: This study recommends that estate investors, developers and managers incorporate community policing initiatives in their planning/occupation and foster active engagement between residents and local law enforcement. Establishing neighborhood watch programs, safety committees, and increasing investment in technological security solutions. Surveillance systems and gated entry controls are recommended to enhance the overall sense of safety among occupants.

3. Improvement of Accessibility and Infrastructure: Estate managers should work closely with local authorities to improve public transport connectivity and road infrastructure within estates. Ensuring well-maintained and accessible road networks is essential for facilitating occupants' ease of movement and access to essential services. Additionally, public engagement programs should be initiated to encourage social interaction and allow residents to express their concerns regarding community infrastructure and services.

4. Promotion of Occupants' Autonomy: To enhance occupants' satisfaction, this study recommends that estate managers offer flexible lease and rent agreements that permit occupants to make minor modifications or personalize their living spaces, subject to reasonable limits. This could involve allowing occupants to redesign certain areas with prior approval. In addition, fostering occupants' participation in estate management through regular meetings, surveys, and representation on management committees is advised to ensure that tenant perspectives are adequately considered in decision-making processes.

These recommendations aim to guide estate investors, developers and managers, policy-makers and regulators in improving housing quality and occupants' satisfaction in housing estates in Abuja and other Nigerian cities.

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