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Assessment of the influence of managerial service quality on occupants' satisfaction in Housing Estates in Abuja, Nigeria.

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Abstract

In the rapidly developing Federal Capital of Nigeria, Abuja, understanding the relationship between managerial service quality and occupants' satisfaction is crucial for sustainable housing development. This study addresses this by assessing the influence of managerial service quality on occupants' satisfaction in housing estates in Abuja, Nigeria. Notably, there is a dearth of information on occupants' satisfaction of housing estates within the Nigerian context, existing studies mainly focus on the physical environment. Using a survey-based cross-sectional design, data was collected through structured questionnaires from two housing estates in Abuja, focusing on occupants' perceptions of managerial service quality components. The study evaluated four key aspects of managerial service quality as independent variables: Facility Management, Management's Responsiveness to Complaints, Waste Management, and Environmental Hygiene. The data underwent inferential analysis, with correlation analysis gauging the strength and direction of the relationship between the dependent and independent variables, and multiple regression analysis used for hypothesis testing. Preliminary findings revealed a positive correlation between managerial service quality and occupants' satisfaction. From the results of multiple regression analysis, three hypotheses revealed a significant positive relationship with occupants' satisfaction, while one hypothesis showed an insignificant but positive relationship with occupants' satisfaction. This study underscores the critical role of effective estate management in improving occupants' quality of life and fostering sustainable urban development. Findings from the study can inform policymaking, shape property management practices, and empower housing estate administrators to meet the evolving needs and expectations of housing estate occupants.

Keywords: Abuja; Service Quality; Managerial Service; Housing Estate; Satisfaction; Occupants

1. Introduction

According to a study conducted by Jiboye [1], a prevalent reason for the failure of numerous housing projects, particularly in Africa, is the oversight of crucial inputs derived from the residents of residential developments. Often, residential development designs are formulated based on the perspectives of designers, neglecting the valuable insights of the potential occupants. Moreover, professionals involved in such projects tend to invest significant efforts into predicting the preferences of future occupants, rather than prioritizing the creation of a development that guarantees a satisfactory living experience. Notably, the lack of user participation in design formulation and its attendant consequence to occupants and the external environment in housing estates is evident in the Federal Housing Authority Phase I Estate in Lugbe, a suburb of Abuja. Prevalently, majority of the occupants have taken to post occupation improvements in the form of refurbishment, remodeling and in some cases, outright demolition and redevelopment. By

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this experience, the occupants are overburdened by significantly deploying extra budgetary part of their earnings to achieve satisfactory indoor and outdoor living experiences.

The primary purpose of designing and constructing buildings revolves around the creation of a comfortable, clean, healthy, and secure interior and exterior environment for residents to engage in various activities and social interactions. This achievement necessitates adherence to governmental and stakeholder regulations, as these entities possess a wealth of knowledge concerning users' needs and expectations. Several preceding investigations [2, 3, 4] have illuminated a prevalent issue: the incongruence between established building regulations and the evolving needs and preferences of occupants. Consequently, the resultant level of satisfaction that occupants derive from their buildings and the provided services often falls short of their aspirations. This discord is visibly manifested in occurrences such as 'sick building syndrome' and related health discomforts [5]. It also prompts an ongoing pursuit of building refurbishment or, at times, the necessity for relocation from completed structures [6]. These outcomes consequently lead to unwarranted energy consumption and potential harm to both the structural components of the building and its external amenities [7].

Amidst the backdrop of Nigeria's escalating national housing deficit, which has surged from thousands in the 1980s to approximately 17 million, individuals are finding themselves constrained by a dual dilemma characterized by both qualitative and quantitative deficiency, ultimately giving rise to both supply and demand end markets. Consequently, this scenario has left individuals with limited alternatives, often thrusting them into a "take it or leave it" predicament. In response, producers have adeptly capitalized on this circumstance, employing lowered standards as a pragmatic cost-cutting strategy. Furthermore, the mounting pressure on developers to rapidly deliver a substantial volume of housing units has been acknowledged to yield compromising repercussions on both service quality and sustainability [8]. On the front of public housing, Ibem and Amole [9] have observed that standards have, over time, become ensnared by the social dynamics of provision, either succumbing to populist agendas or being narrowly centered on social welfare imperatives. Additionally, in instances where housing creation is driven by entrepreneurial incentives, an insatiable pursuit of excessive profits frequently engenders various forms of marginal adjustments.

It is noteworthy that the majority of mass housing initiatives predominantly adhere to developers' benchmarks rather than those shaped by the actual users [10]. Kaitilla [11] contended that this approach invariably leads to the compromise of crucial features and services that underpin users' contentment and fulfillment. The quest to delineate the parameters governing user satisfaction within the realm of housing remains an ongoing and evolving endeavor. Jiboye [12] notably highlighted a pivotal challenge facing housing delivery authorities in Nigeria – that of discerning the pertinent factors influencing users' satisfaction with their dwellings and surroundings, and devising strategies to integrate this discernment into housing planning and development. It has been established that the nature of users' satisfaction with housing is dynamic, inherently relative, and not fixed [12, 2].

Elucidations provided by Ibem and Amole [13] concerning the perception of housing satisfaction lend credence to the concepts of measurement as being contingent upon a blend of both objective and subjective variables [14]. The conceptualization of satisfaction, as expounded by Potter and Cantarero [15], aligns with the consensus of numerous preceding scholars who regard it as a multifaceted and intricate construct. This comprehensive evaluation encompasses three interwoven dimensions: cognitive, affective, and conative. The affective facet encapsulates emotional and evaluative elements, including a sense of place attachment. Meanwhile, the cognitive dimension encompasses aspects of perception and belief related to the physical environment and cohabitants. Lastly, the conative component gauges behavioral intentions, entailing considerations of relocation or continued residence.

In the contemporary landscape, tenants are displaying an escalating awareness and heightened concern regarding the quality of service they receive [16]. [16] asserted that pivotal factors for enhancing tenant retention encompass improvements in services and the cultivation of robust service relationships. This underscores the imperative for housing estate managers to establish enduring occupants' connections, attain the utmost levels of occupants' satisfaction and retention, and adeptly merge their industry expertise with astute business acumen. Furthermore, the realm of estate management has evolved into a more intricate domain, characterized by the integration of advanced technology. As a result, competent managers with a profound understanding of this technology are required to oversee operations effectively and efficiently. This transformation has led to a rapid expansion of the estate management profession, drawing a significant influx of newcomers to the market [18]. Hence, in order to retain their competitive edge, estate managers must actively listen to tenants' requisites, apprehensions, expectations, and viewpoints. This invaluable information should then be harnessed to gauge their own performance, comparing it against industry best practices [19]. Chin and Poh [18] contended that due to the heightened expectations of tenants and the burgeoning economy, a growing awareness is emerging among building owners, professionals, and regulatory authorities. This

collective awareness underscores the pressing need to elevate the standards of estate management practice, fostering a climate of continual improvement.

A noticeable deficiency of comprehensive data pertaining to residential satisfaction exists within the Nigerian context. The limited studies available have predominantly focused on the physical environment, with notable contributions from studies such as Muogalu [19] Ogu [20]; Ukoha and Beamish [2]; Gbakeji and Magnus [21]; Amole [22]; Jiboye [12]; Fatoye and Odusami [23]; and Ilesanmi [24]. These studies primarily explored the degree of satisfaction among users of public housing, with emphasis on the influence of physical attributes of residential structures on the overall satisfaction with the surrounding milieu. These works underscore the pivotal role of the residential dwelling unit in shaping the quality of the living environment and subsequently influencing the success of housing initiatives. Despite these contributions, there remains a distinct lack of research explicitly investigating the impact of managerial service quality provided by the central managers of housing estates in catering to the needs of the occupants. Consequently, a significant gap exists in the understanding of the influence of managerial service quality on occupants' satisfaction in housing estates in Abuja, Nigeria. The present research aims to bridge this knowledge gap by enhancing insights into the relationship between occupants' satisfaction and managerial service quality, thereby contributing to a more comprehensive understanding of the housing sector in Nigeria.

Therefore, the aim of this study was to assess the influence of managerial service quality on the satisfaction of occupants of public and private housing estates in Abuja with the view to establishing occupants satisfaction levels with major components of managerial service, that could be employed to improve residents' satisfaction with, and the performance of housing in public and private estates in Nigeria, especially to assist estate developers, housing managers and other stake holders in the construction industry and real estate in decision making process such as proper prediction of design preferences of prospective clients.

Informed by insights derived from extensive literature review and prior studies such as Muhammed et al. [25]; Salleh et al. [26]; Varady and Carrozza [27]; and Ukoha and Beamish [2], four distinct components of managerial service were meticulously chosen as pivotal components influencing the satisfaction of occupants within housing estates. These identified components include Facility Management, Management's Responsiveness to Complaints, Waste Management and Environmental Hygiene. The primary objectives of this study were to: (i) determine the influence of Facility Management on occupants' satisfaction in housing estates in Abuja; (ii) examine the influence of Management's Responsiveness to Complaints on occupants' satisfaction in housing estates in Abuja; (iii) investigate the influence of Waste Management on occupants' satisfaction in housing estates in Abuja; and (iv) determine the influence of Environmental Hygiene on occupants' satisfaction in housing estates in Abuja.

Basically, the study adopted four research questions in relation to the study objectives; (i) to what extent does Facility Management affect occupants' satisfaction in housing estates in Abuja?; (ii) to what extent does Management's Responsiveness to Complaints affect occupants' satisfaction in housing estates in Abuja?; (iii) to what extent does Waste Management affect occupants' satisfaction in housing estates in Abuja?; and (iv) to what extent does Environmental Hygiene 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: Ho1: Facility Management does not have significant effect on occupants' satisfaction in housing estates in Abuja; Ho2: Management's Responsiveness to Complaints does not have significant effect on occupants' satisfaction in housing estates in Abuja; Ho3: Waste Management does not have significant effect on occupants' satisfaction in housing estates in Abuja; and Ho4: Environmental Hygiene does not have significant effect on occupants' satisfaction in housing estates in Abuja.

2. Literature Review

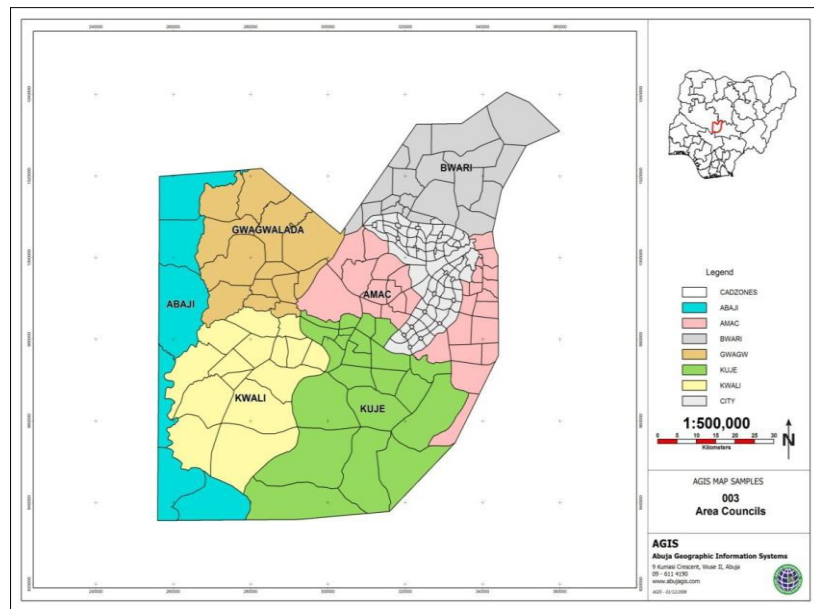
2.1. The Study Area

Nigeria's capital Abuja is centrally located in the country (Fig. 1). It lies between latitudes 6° 45' and longitudes 7° 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 is 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) [28].



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

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



Source: Abuja Geographic Information Systems (AGIS)

Figure 2 Map of Abuja

The Federal Capital Territory Abuja is home to numerous private and public housing estates which serve to accommodate the growing population of the city. Two residential housing estates were therefore selected for this study. They include Federal Housing Authority (FHA) Gwarinpa II Housing Estate and Prince and Princess Housing Estate. The Federal Housing Authority (FHA) Gwarinpa II Housing Estate is a public housing estate located along the Kubwa Outer Northern Express Way (ONEX) in Abuja Municipal Area Council (AMAC). According to the Federal Housing Authority (FHA), it is the largest single public housing estate in the country with about 6,500 housing units comprising about 4,500 direct scheme units, about 650 partnership scheme units and about 1,350 individual scheme units. Prince and Princess Housing Estate is a private estate also located in Abuja Municipal Area Council (AMAC). It is one of the largest private housing estate in Abuja with about 1,120 housing units. Both housing estates accommodate different house plans namely detached houses, semi-detached houses, block of flats, and terrace duplexes frequently in prototypes. The

predominant kind of houses include one bedroom, two bedroom and three bedroom flats in a block; three and four bedroom detached, semi-detached and terrace duplexes and a few five and six bedroom detached duplexes in the public and private housing estates of note.

2.2. Overview of Service Quality

Service refers to any non-tangible action or effort that one party provides to another, resulting in no ownership and potentially associated with a physical product [29]. The concept can encompass various aspects of a product or service's ability to satisfy distinct consumer needs, constituting its quality. This quality entails all attributes and traits that contribute to this capacity [30]. Contextually, service quality will refer to the extent to which occupants' perceptions of service meet or exceed their expectations. In accordance with Gronroos [31], this quality represents an evaluative process where consumers gauge their anticipations against the actual service received. According to Bitner et al. [32], it encapsulates the consumer's comprehensive perception of an organization's service. In this context, it captures the occupants' perception of managerial service offered by housing estates, gauging its quality. Alternatively, Cronin and Taylor [33] viewed service quality as an enduring evaluative stance or attitude. Parasuraman et al. [34] characterized service quality as the distinction between anticipated service performance and perceived service delivery.

To assess the quality of service offered by managements of housing estates, several scholars have proposed major service quality dimensions which include Facility Management, Management's Responsiveness to Complaints, Waste Management and Environmental Hygiene. Researchers have acknowledged that these four-dimensional constructs from Muhammed et al. [25]; Salleh et al. [26]; Varady and Carrozza [27]; and Ukoha and Beamish [2] are the most widely used and applied parameters to assess the influence of managerial service quality on occupants' satisfaction in housing estates.

2.3. Concept of Satisfaction

Numerous scholars have delineated the concept of "satisfaction" in diverse ways. Some characterized it as the fulfillment of individual needs, while others interpret it as a complex interplay of emotional states, behavioral norms, or cognitive endeavors directed towards goals and beliefs. The assessment of satisfaction typically involves quantification on arbitrary scales, facilitating comparisons across different segments of a sample and exploration of variables linked to heightened satisfaction levels [35, 36, 37, 38]. Satisfaction is essentially a process of evaluating the disjunction between what has been attained and the anticipated outcome [39].

Furthermore, satisfaction can be defined as the perceived variance between one's aspirations and actual achievements, involving perceptions of fulfillment or shortfall [35]. Satisfaction is influenced not only by physical factors but also by the capacity to establish social networks. Ultimately, satisfaction represents a personal response to an objective environment [15].

2.4. Residential Satisfaction

Francescato et al. [40] provided an encompassing interpretation of residential satisfaction, asserting it to be the emotional sentiment directed toward one's place of residence. It encapsulates the feelings individuals experience as a result of their living environment, encompassing both positive and negative dimensions. This perspective was further reinforced by Francescato [41], who emphasized that occupants' contentment with their dwellings can manifest in either positive or negative forms. Presently, the evaluation of satisfaction relies on structured surveys and the statistical analysis of interconnected variables [42]. Findings from Elsinga and Hoekstra [43]; and Hassanain [44] reinforce comparable viewpoints regarding housing satisfaction as evidenced by previous research. They posited that the notion of housing satisfaction serves three fundamental objectives. First, it serves as a pivotal factor in gauging an individual's perception of overall quality of life. Second, it serves as an indicator of one's propensity for mobility, subsequently influencing housing demand and impacting the surrounding environment. Third, it functions as an impromptu gauge of the success of private sector development, offering an evaluative mechanism to gauge residents' tolerance for deficiencies in the existing environmental context.

Residential satisfaction serves as a variable that influences the connection between an individual's background and their behavioral inclinations towards mobility. Research outcomes have also brought to light that residing in inadequately conditioned dwellings carries adverse social and psychological repercussions. Scholars such as Eni [45]; Fanning and Gaba [46]; Macpherson et al. [47]; Mitchell and Weale [48]; and Riaz et al. [49] have all contributed to this understanding. Additionally, Macpherson et al. [48] underscored that substandard housing conditions are a primary catalyst for various societal challenges, which include psychological and physical ailments among residents, an array of

maladjustments, diminished self-esteem, intra-family and inter-family congestion, hindrances to economic progress, and the pervasive issue of inadequate education.

Affirming the assertions presented in the preceding paragraph, Nubi [50] articulated the viewpoint that a considerable portion of delinquents within society is a product of impoverished living conditions, and at times, complete homelessness. Consequently, it remains paramount to acknowledge that investigations into residential satisfaction yield insights into both positive and negative impacts, aiming to comprehend occupants' aspirations for enhanced residential contentment while contributing to the formulation of effective housing policies. It is worth noting that the exploration of housing satisfaction in various studies is inherently intertwined with the broader concept of quality of life [51, 52, 53, 54]. These investigations delve into understanding the multifaceted nature of residents' desires and experiences, adding depth to the overarching understanding of housing satisfaction.

Residential satisfaction constitutes a construct susceptible to influences from both objective and subjective evaluations of housing attributes, comprising physical, social/psychological, and managerial facets, in conjunction with the demographic characteristics of residents [23]. Onibokun [55] contended that elements of social, cultural, and behavioral nature within the broader societal environment collectively shape the habitability of a dwelling. Additional determinants comprise age [56], marital status [57], number of children and family size [58], income, education, employment, and well-being [56], social engagement and interaction [59], prior living conditions, as well as residential mobility and intentions for future relocation [57, 60, 61]. The income level of housing consumers holds a pronounced association with their contentment regarding the housing environment. Adriaanes [62] and Lu [63] explored this relationship, revealing that households with higher incomes tend to exhibit greater satisfaction with their housing situations. This financial advantage enables households to potentially relocate to more desirable locations or neighborhoods, resulting in heightened satisfaction [64]. This dynamic emphasizes the significant role that income plays in shaping housing satisfaction and the potential for improved living circumstances.

2.5. Measuring Housing Satisfaction

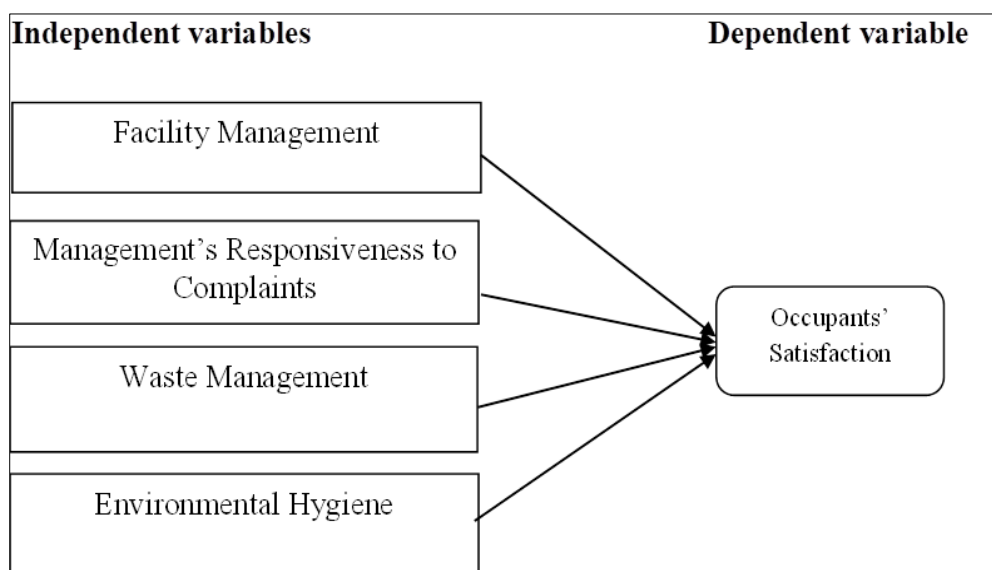
Bromley [65] delineated two levels at which satisfaction can be gauged: first, the overarching degree of housing satisfaction, and second, the contentment concerning distinct aspects of the dwelling environment. Notably, satisfaction indices can be self-referential, reflecting occupants' evaluation of housing attributes they consider pivotal for their desired housing type. This involves a mental comparison between their envisioned housing and the actual dwelling, culminating in an assessment that establishes overall satisfaction grounded in the degree to which housing needs and aspirations are effectively met. This conceptual framework identifies four primary factors that impact housing satisfaction, encompassing household size, residents' age, educational attainment, and housing quality. It is vital to acknowledge the myriad indicators employed in assessing housing satisfaction. Ajayi, Nwosu and Ajani [66] underscored that housing satisfaction is influenced by the inherent personality traits of the occupants. Correspondingly, Norquist [67] emphasized that both physical comfort and quality are pivotal contributors to residential contentment. Khozaei et al. [68] affirmed that residents' interactions with managerial services substantially shape their satisfaction levels. Furthermore, James [69] highlighted the role of home-ownership, while Francescato et al. [41] concluded that residents' income status significantly contributes to their overall residential satisfaction. These insights underscore the multidimensional nature of housing satisfaction and the diverse factors interplaying to shape occupants' contentment.

Ishiyaku [70] conducted a comprehensive exploration into the determinants of residential satisfaction revealing an array of factors that exert influence. These factors include building structural elements, well-maintained landscapes, cleanliness, accessibility to surrounding facilities, adequacy of dwelling spaces, functional kitchen and bathroom areas, privacy provisions, staircase design, aesthetic appeal, the resilience of building components, availability of building services, efficacy of waste management systems, reliable power supply, connectivity to other areas, territorial dominance, and security measures. In cases of shared occupation (tenancy) like in block of flats, terraces and condominium house types, shared facilities like conveyor and circulation systems are included in this easily noticeable factors of dissatisfaction. His research underscored that the overall housing condition, comprising both the physical attributes of the house and the surrounding environment, significantly contributes to residential satisfaction. The findings indicated a clear correlation between superior physical features, well-designed components, pleasing surroundings, efficient services, and ample living spaces, with heightened levels of residential satisfaction. Conversely, housing units characterized by substandard physical attributes, inadequate components, unfavorable surroundings, and insufficient dwelling spaces were associated with diminished levels of residential contentment. These outcomes highlight the pivotal role played by the quality and suitability of the housing environment in shaping residents' overall satisfaction.

Liu [71] uncovered notable levels of dissatisfaction among public housing occupants, particularly concerning maintenance and cleanliness of the building premises, structural integrity, and accessibility via public transport. Conversely, private housing occupants expressed concerns primarily about the absence of facilities catering to the disabled, recreational amenities, and provisions for the elderly and childcare. Earlier research posits that effective housing management has the potential to enhance the relative satisfaction of public housing tenants [56]. The overall satisfaction with management activities hinges significantly on the comprehensive planning and harmonization of undertakings within the residential estate. This encompasses managerial expertise, experience, adherence to established policies in the best interests of residents, and the enhancement of comfort and habitability within the residential environment. In the realm of public housing, a prevalent sense of discontent often exists with regard to managerial practices [2]. Additionally, fostering positive relationships between neighborhood residents and the management team contributes to a robust sense of residential satisfaction [26]. Varady and Carrozza [27]; Ukoha and Beamish [2]; and Salleh et al. [26] also found that factors influencing satisfaction include the caliber of services rendered and the responsiveness to occupants' grievances. These dynamics underscore the multifaceted nature of housing satisfaction and the intricate interplay of factors that contribute to occupants' contentment within diverse housing settings.

2.6. Research Framework

The conceptual framework shows the interplay of the primary variables of the study. The conceptual framework exemplifies the association of independent and dependent variables (Fig. 3). The four identified elements of managerial service quality are grouped as independent variables while occupants' satisfaction being the dependent variable.



Source: Authors' sketch

Figure 3 Framework

3. Methodology

3.1. Research Design

This research employed a survey-based cross-sectional design to gather data from two distinct residential housing estates situated in Abuja, accommodating a diverse range of building types and designs. The data collection process involved both primary and secondary sources. Primary data was obtained through structured questionnaires administered to household heads of houses within the selected estates. Secondary data was sourced from literature review of pertinent studies.

The study's research population comprised the aggregate number of household heads within the two selected public and private residential housing estates located within the study area. The selected public housing estate (Federal Housing Authority (FHA) Gwarinpa II Housing Estate) has about 6,500 housing units according to the Federal Housing Authority data, while the selected private housing estate (Prince and Princess Housing Estate) accommodates about 1,120 housing units based on available data from the management of the estate. The total research population was

therefore an aggregate population of 7,620 households. However, the sample size for both estates, determined utilizing Taro Yamane's formula for sample size calculation was established at 376 households for Federal Housing Authority (FHA) Gwarinpa II Housing Estate, and 294 households for Prince and Princess Housing Estate, forming the basis for questionnaire distribution. This determination considered a 5% margin of error and a 95% confidence level. However, of the 376 administered questionnaires to Federal Housing Authority (FHA) Gwarinpa II Housing Estate, 305 completed questionnaires were retrieved, resulting in a valid response rate of 81.1%. Also, of the 294 administered questionnaires to Prince and Princess Housing Estate, 210 completed questionnaires were retrieved, resulting in a valid response of 71.4%. Therefore a total of 515 retrieved questionnaires were analyzed.

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 Strongly Disagree '2' for Disagree, '3' for Not Sure, '4' for Agree and '5' for Strongly Agree. 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 study was conducted using inferential analysis, where correlation analysis was employed to determine the strength and the direction of the relationship between the variables while multiple regression analysis was used for hypotheses testing. The analyses was conducted using SPSS (version 23.0).

4. Results

This section provides an overview of the results and discussions conducted to assess the influence of managerial service quality on occupants' satisfaction within housing estates in Abuja. The results are aligned with the research questions and hypotheses, also attempts were made to link the study findings with similar studies in the field. This section commences with a summary of the response rate, followed by a normality test that includes a check for multicollinearity using Tolerance Value and Variance Inflation Factor (VIF). Subsequently, the study presents the correlation analysis, which elucidates the relationships between the dependent and independent variables. Finally, the multiple regression results are presented, serving as the means by which the four hypotheses posited in this study are tested.

4.1. Correlation Analysis

Table 1 Correlation matrix

	OCCS	FM	MRC	WM	EHYG
OCCS	1				
FM	0.401	1			
MRC	0.387	0.100	1		
WM	0.295	0.142	0.241	1	
EHYG	0.128	0.049	0.300	0.266	1

Source: Author's Computation (2023), SPSS 23 Output

Correlation Analysis is a statistical technique used to determine the strength of a relationship between two numerically measured variables [72]. However, correlation matrix shows the relationship between all pairs of variables in the regression model; the relationship between all explanatory variables individually with explained variable; and the relationship between all the independent variables themselves [73]. The strength of the relationship between variables is interpreted based on criteria popularized by [74]. According to Cohen [75], correlation value between 0.1 and 0.29 is considered as small correlation, correlation value between 0.3 and 0.49 is considered as medium correlation, while correlation value between 0.5 and 1.0 is considered as large correlation. Accordingly, the strength of the relationship between the variables in this study could be said to be between the region of small and medium correlations because all the correlation indices range from 0.049 to 0.401. This suggests that there is a relationship between all the independent and the dependent variables as well as among themselves because there is no correlation value of 0.0000 and none of the correlation index has +/-1. Hence, there is no existence of a perfect relationship among the variables.

On this account, multicollinearity among variables does not pose a problem in this study. To this end, the results of the correlation analysis support the need to undertake a more powerful statistical analysis that will test the evidence of

multicollinearity among the predictors of management service quality. In order to prove the findings of the correlation matrix, Variance Inflation Factor (VIF) test was conducted further to investigate the presence of multicollinearity in this study. This is shown in table 1 above.

4.2. Coefficient of Determination (R-Square)

Coefficient of determination is a statistical technique used to show the extent to which independent variables influence the dependent variable of the study. This section discusses the coefficient of determination of the study where it shows the level and the extent of variation that the independent variables (Facility Management, Management's Responsiveness to Complaints, Waste Management and Environmental Hygiene) have on occupants' satisfaction in housing estates in Abuja by using R-square (R^2) analysis. The extent to which the independent variables influence the dependent variable (occupants' satisfaction) is presented in table 2 below.

Table 2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.535 ^a	0.437	0.396	0.56035

a. Predictors: (Constant), FM, MRC, WM, EHYG

The model summary shows an R-value of 0.437 which indicates a positive correlation between the components of managerial service quality and occupants' satisfaction. Accordingly, the R-square showed a value of 0.437 which indicates that occupants' satisfaction is determined by Facility Management, Management's Responsiveness to Complaints, Waste Management and Environmental Hygiene to the tune of 43.7%, and is further reduced to 39.6% when the adjusted R-square value of 0.396 is considered, leaving the rest to other factors not covered in the model.

4.3. Regression Result of Management Service Quality and Occupants' Satisfaction

This section presents the result of the direct relationship between the components of managerial service quality and occupants' satisfaction in the selected residential housing estates in Abuja. Table 3 below explained the direct effect and relationship between the variables. Accordingly, the four components of managerial service quality were hypothesized against occupants' satisfaction. All the components of managerial service quality (Facility Management, Management's Responsiveness to Complaints, Waste Management and Environmental Hygiene) were proposed to have significant positive relationship with occupants' satisfaction. Evidently, from the result of multiple regression analysis of the relationships, three hypotheses (H_1, H_2 , and H_3) affirmed the assumption of the study and revealed a significant positive relationship with occupants' satisfaction. On the other hand, the hypothesis on Environmental Hygiene (H_4) showed an insignificant positive relationship with occupants' satisfaction in the study area against the expectation. Furthermore, the result showed that no multicollinearity exist as the test of VIF and tolerance were conducted also to check multicollinearity in the data set when the value of VIF is less than 10 and tolerance value is more than 0.10.

Table 3 Effect of Managerial Service Quality on Occupants' Satisfaction

Model	Unstandardized Coefficients		Standardized Coefficient	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.838	0.136		13.529	0.000		
FM	0.465	0.038	0.093	5.737	0.000	0.427	2.142
MRC	0.304	0.041	0.192	2.093	0.011	0.848	2.011
WM	0.139	0.049	0.295	1.791	0.034	0.642	1.714
HYG	0.069	0.048	0.180	1.007	0.074	0.571	1.132

a. Dependent Variable: OCCS

5. Discussion of Findings

Preliminary findings from the study revealed a significant correlation between the selected components of managerial service quality (Facility Management, Management's Responsiveness to Complaints, Waste Management and Environmental Hygiene) and occupants' satisfaction in housing estates. This suggests that the various components are potential determinants of occupants' satisfaction in housing estates. Although all the components showed significant correlation with occupants' satisfaction, satisfaction with Facility Management, Management's Responsiveness to Complaints and Waste Management revealed significantly positive correlation, indicating that these three components play a key role in the overall satisfaction level of occupants in residential housing estates in Abuja.

In the context of managerial service in housing estates, Facility Management represents a comprehensive approach to overseeing the management of building properties and infrastructure. The evaluation of this component served as a crucial factor in determining the level of satisfaction among occupants. The underlying hypothesis posited a positive and statistically significant relationship between facility management and occupants' satisfaction. This hypothesis was substantiated by the observed positive correlation ($\beta = 0.465$, $t = 5.737$, $p = 0.000$). Consequently, the null hypothesis, which asserted the absence of a significant link between facility management and occupants' satisfaction is rejected, and the alternative hypothesis is accepted. The finding is consistent with Jiboye [76], which established that management attributes like enforcement of rules and regulations, response rate to repairs and general facility maintenance, response to waste disposal, as well as the rate of waste disposal, are positively and significantly related with the occupants' satisfaction. This finding also aligns with the conclusion drawn from the study by Were and Miranga [77], which identified a positive and substantial impact of facility management on employee performance in accommodation facilities, ultimately enhancing users' satisfaction. However, the compelling reason behind this strong positive assertion may stem from the realization that inadequate management of housing estate facilities leads to the deterioration of the estate's physical areas and subsequently results in dissatisfaction among occupants. Therefore, it is imperative to prioritize effective facility management to ensure the contentment of housing estate occupants in Abuja.

Management's Responsiveness to Complaints pertains to efforts undertaken by estate administrators to address concerns raised by occupants of estates. Therefore, this component was assessed as a determinant of occupants' satisfaction. This study posited that there exists a positive and significant correlation between management's responsiveness to complaints and occupants' satisfaction. As anticipated, the analysis yielded a positive and statistically significant outcome in terms of the Beta value, T-value, and P-value, which stood at 0.304, 2.093, and 0.011, respectively. Consequently, the null hypothesis, which suggested the absence of a relationship between management's responsiveness to complaints and occupants' satisfaction is rejected, in favour of the alternative hypothesis. The finding agrees with the studies by Varady and Carrozza [27]; Ukoha and Beamish [2]; and Salleh et al. [26], which affirmed that among the factors influencing satisfaction include responsiveness to occupants' grievances. The finding further aligns with Nneoma and Uwabor [78], which identified the responsiveness dimension of service quality as a significant determinant of customer satisfaction. The plausible explanation for this outcome may be attributed to the occupants' satisfaction with the proactive measures taken by the housing estate's management whenever they raise concerns, thereby enhancing their overall satisfaction with the managerial services provided.

In addition, Waste Management involves all the activities required for the proper handling of waste, starting from its collection and extending to its recycling, all while ensuring the continuous monitoring necessary to maintain environmental cleanliness and suitability. In light of this, the research formulated a hypothesis to investigate the proposed relationship between waste management and occupants' satisfaction within the selected housing estates in Abuja. The study posited that this relationship would demonstrate both a positive and statistically significant association. However, the analysis found empirical evidence that indeed supported the hypothesis. Waste management exhibited a statistically significant positive effect on occupants' satisfaction within the selected housing estates with Beta coefficient ($\beta = 0.139$), T-value ($t = 1.791$), and the associated p-value ($p = 0.034$). Consequently, the null hypothesis, which posited that there was no significant relationship between waste management and occupants' satisfaction is rejected, in favour of the alternative hypothesis. The finding agrees with the study by Jiboye [76], which concluded that management attributes like response rate to repairs and general maintenance, response to waste disposal, as well as the rate of waste disposal, are positively and significantly related to the occupants' satisfaction. The finding agrees with Ishiyaku [70], which confirmed that waste management is a determinant of occupants' satisfaction. However, the positive relationship established between waste management and occupants' satisfaction can be attributed to the understanding that inadequate waste management practices can detrimentally affect the sustainability of the estate environment. This, in turn, impacts the quality of the experiences offered by estate management and the overall quality of life within the community. Thus, this study underscores the pivotal role of effective waste management in enhancing occupants' satisfaction and the overall well-being of housing estate communities.

Finally, Environmental Hygiene assumes a critical role in mitigating health risks associated with disease transmission in housing estates. Consequently, the study posited that there would be a positive and significant relationship between environmental hygiene and occupants' satisfaction. However, contrary to our initial expectations, the empirical results yielded a positive but statistically insignificant outcome, with a Beta coefficient (β) of 0.069, a T-value (t) of 1.007, and a p-value (p) of 0.074. As a result, the null hypothesis, indicating that there is no significant relationship between environmental hygiene and occupants' satisfaction is accepted, while the alternative hypothesis cannot be adopted in the case of this particular variable. This finding aligns with the study conducted by Alananzeh [79], which investigated the influence of safety issues and hygiene perception on customer satisfaction in four and five-star hotels in Jordan. The study similarly found that hygiene perception exhibited an insignificant positive relationship with customer satisfaction within the hotel context. Conversely, the result is not consistent with Sun et al. [80], which found that hygiene factors have significant positive relationship with hotel consumption during Covid-19 pandemic, which was as a result of consumers' satisfaction. However, it is crucial to acknowledge that the context of that study differs significantly from the present study because the former pertains to a period marked by a pandemic outbreak when individuals were inherently more cautious and vigilant regarding hygiene practices. This study posits that the outcome of this hypothesis may be attributed to the fact that individuals tend to prioritize their immediate and personal household hygiene over the broader environmental hygiene of the housing estate especially in a situation of existing and effective general waste management system within the estate. It can be inferred from the findings that hygiene-related responsibilities are largely considered individual obligations within housing estates in Abuja.

6. Conclusion and Recommendations

This study assessed the influence of managerial service quality on the satisfaction of occupants of public and private housing estates in Abuja. The study analyzed key components of managerial service quality, specifically Facility Management, Management's Responsiveness to Complaints, Waste Management, and Environmental Hygiene. The findings derived from this study underscore the paramount importance of assessing these components as drivers of occupants' satisfaction within Abuja's housing estates. Based on the study findings, this study concludes that occupants' satisfaction is significantly influenced by certain components of managerial service quality. Specifically, components such as Facility Management, Responsiveness to Complaints, and Waste Management exhibited a significant and positive correlation with occupants' satisfaction levels. These components are integral in shaping the overall contentment of occupants within housing estates. However, it is noteworthy that the study revealed a different pattern in the case of Environmental Hygiene. While there was a positive association, it turned out statistically insignificant in influencing occupants' satisfaction levels. This suggests that Environmental Hygiene, while still relevant, may not have as pronounced an influence on occupants' overall satisfaction when compared to Facility Management, Management's Responsiveness to Complaints and Waste Management components.

The implications of the study findings are of paramount significance for housing estate administrators. It is imperative for administrators to allocate critical attention and resources to aspects such as Facility Management, Responsiveness to Complaints, and Waste Management. These components play pivotal roles in effective estate management, contributing to improved overall service quality and thereby enhancing residents' experiences within the housing estates.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare that they have no conflict of interest.

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