

**Comparative Analysis of Post-Occupancy Satisfaction of Selected Residential Properties
In Onitsha, Onitsha North L.G.A, Anambra State**

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CERTIFICATION

This is to certify that the project titled: “Comparative Analysis of Post-Occupancy Satisfaction In Selected Residential Properties In Onitsha, Onitsha North L.G.A, Anambra State” was carried out by RAJI T. ADEWALE with the Registration Number: LCU/PG/005015 of the department of Estate Management and meets the regulations governing the award of the degree of Master in Property Development of Lead City University, Ibadan and it is approved for its presentation.

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DEDICATION

This is dedicated to God Almighty for the Grace to finish this very major task of academics. I praise His name forever and ever, Amen!

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I must first and foremost give all praises and adoration to Almighty Allah for everything for the grace, ability, knowledge and good health to start and finish my program successfully. I am also sincerely grateful to my supervisor who also doubled as the Head of Department, Dr. (Esv.) Igho Fayomi for her guidance and unreserved encouragement to me throughout my research period. My appreciation equally goes to the entire lecturers and non-teaching staff of the department whose relevant inputs have in one way or the other assisted in giving this research work the quality it has attained. My warm regard to all my colleagues who have immensely in one way or the other supported me in the course of my academic pursuit, more success I pray in all your endeavours in life. My gratitude also goes to all the authors whose works have provided the needed ideas that have positively shaped this research work. My profound appreciation also goes to my family for their unending love, support, faith, prayers and care throughout this phase of my life. What I have achieved today would not have been possible without your support, I pray that the Almighty God will protect, guide and keep you.

ABSTRACT

This study conducts a comparative analysis of post-occupancy satisfaction across selected residential properties in Onitsha North Local Government Area, Anambra State. The aim is to generate insights that can inform better property development practices. The research utilizes primary data collected through two sets of questionnaires: one targeting household heads in private housing estates, and the other directed at the estates' management departments. The study focuses on three purposively selected private housing estates: Onitsha GRA, Akpaka Housing Estate, and American Quarters Estate. A total of 280 questionnaires were distributed among the household heads, with 175 in Onitsha GRA, 53 in Akpaka Housing Estate, and 52 in American Quarters Estate, using a simple random sampling technique. Data analysis was conducted using frequency distribution, mean rating, Relative Adequacy Index (RAI), Relative Satisfaction Index (RSI), and Factor Analysis. The findings reveal that the majority of respondents were male (66.5%), aged between 31-45 years (60.85%), married (78.3%), and well-educated, with most households consisting of three persons (66.5%). Satisfaction with bathroom/toilet facilities showed a positive correlation with age, educational attainment, and income. Respondents rated potable water supply, burglary proofs on windows, number of bedrooms, and residence type as highly adequate, while privacy, housing costs, and fire safety measures were deemed inadequate. Management strategies were consistent across the estates, handled internally. Despite overall satisfaction with housing attributes, dissatisfaction was noted regarding noise levels, proximity to work, parking space, social activities, and access to shopping facilities. Key factors influencing satisfaction included managerial practices, utility adequacy, infrastructure, facility maintenance, and accessibility. Together, these accounted for 64.82% of the variance in satisfaction. The study concludes by recommending that future developments focus on addressing these deficiencies to enhance resident satisfaction and promote sustainable living in Onitsha North's private housing estates.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The primary idea of any residential development is to provide adequate shelter for those who will be occupying them. In the context of this study, residential development basically refers to housing and all its appurtenances. Regardless of socioeconomic position, housing is a fundamental human need that serves as the foundation for the organization of family life ¹. A fundamental component of Maslow's hierarchy of requirements, housing is necessary to shelter humans from the elements and from predators, among other things ². A home should ideally give its occupants a secure, safe, pleasant, and healthy interior environment in which to engage in a variety of activities, including social interactions, work, study, leisure, and family life. Buildings are designed, planned, built, and managed in accordance with standards and specifications set by authorities, professionals, and experts who are expected to have sufficient understanding of the requirements and expectations of users in order to accomplish this goal ³.

Building appropriateness is taken into account by most developers at the beginning of the building plan in order to ensure that the property commands the full rental value, according to ⁴. According to ⁵, a building's usefulness following completion and occupancy is determined by the level of satisfaction its occupants experience, and this is where post-occupancy studies of this nature comes into play. An occupier typically finds satisfaction in both the area or surroundings and the housing unit ⁴. Residential building construction is increasing in Nigeria because most investors believe that residential structures are more profitable than other types of buildings. In order to improve the quality of facilities and services, resident opinions are becoming more and more crucial ^{6, 7, 8}.

Utilizing resident feedback is essential since only direct feedback enables the necessary modifications to satisfy residents' needs⁹. It is now commonly accepted that a post-occupancy survey is an essential instrument for guaranteeing that residents receive the care they want and that the building they live in was constructed and operated according to their^{10, 11, 12}. In a post-occupancy evaluation survey, residents' satisfaction is interpreted as evidence of the availability of first-rate amenities and services. Thus, a thorough understanding of resident satisfaction can yield important insights into how to raise the calibre of services and facilities^{10, 7, 8}.

This study therefore intends to carry out a post-occupancy satisfaction in some selected private residential developments in Onitsha North, Anambra State. This is with a view to assessing the satisfaction level of the occupants of these residential developments with reference to the services being provided in these housing estates. Also, there are quite a few literatures that have investigated post-occupancy satisfaction in the study area. This study will add to existing literatures on the subject matter.

1.2 Statement of Research Problem

Post-occupancy review has been the subject of numerous studies in the past, most of which focused on government-owned or produced housing estates. Most of these studies have as their ultimate objective the happiness of the residents of such government-developed housing estates. The majority of public housing developments are the result of government initiatives aimed at addressing people's housing needs with a focus on social welfare. Public housing, which resulted from government involvement in the housing market, has drawn criticism from all around the world. Public housing projects seem to be stigmatized in some way, and people's opinions about how good these kinds of housing are generally not very fascinating¹³.

^{14, 15}. Conversely, private housing initiatives are designed to accomplish two primary objectives. On the one hand, they are consumer happiness and profit maximization. The bulk of private housing operators have focused primarily on how they might increase their profits; however, they have paid little attention to whether or not their end customers are happy. Research on consumers' satisfaction with publicly created housing estates is abundant; however, studies on privately developed housing estates are scarce, particularly in the study area where there are a significant number of these private housing estates.

1.3 Aim and Objectives

This study therefore aims to carry out a comparative analysis of post-occupancy satisfaction in selected residential properties in Onitsha with a view to assessing the satisfaction level of the occupants of these residential developments with reference to the services being provided in these housing estates. The specific objectives are to

- a. examine the socio-economic characteristics of the users in the selected private residential estates in Onitsha North, Anambra State
- b. examine the Housing attributes and management strategies of the selected private residential estates in the study area;
- c. examine the level of residents satisfaction with the Housing attributes and management of the selected private residential estates in the study area; and
- d. examine factors that influences residents satisfaction with the housing attributes and management of the selected private residential estates in the study area.

1.4 Research Questions

It is based on the foregoing that this study attempt to provide answers to the following questions:

- What are the socio-economic characteristics of residents in the selected private residential estates in Onitsha North?
- What are the housing attributes and management strategies of the selected private residential estates in the study area?
- What is the post-occupancy evaluation of the Housing attributes and management of the selected private residential estates in the study area?
- What factors influence residents' post-occupancy satisfaction with the housing attributes and management of the selected private residential estates in the study area?

1.5 Scope of the Study

The study will focus specifically on residential properties located within Onitsha, Onitsha North L.G.A, Anambra State, Nigeria. The selection of residential properties will be limited to a defined geographic area within Onitsha, ensuring a consistent spatial scope for the comparative analysis. The spatial scope will encompass a variety of residential property types, which would be selected from the high, medium, and low density areas of Onitsha North.

1.6 Significance of the Study

There is a notable gap in the literature regarding post-occupancy satisfaction in privately-developed residential properties, specifically, within the context of Onitsha, Onitsha North

L.G.A, Anambra State, Nigeria. This study aims to fill this gap by providing valuable insights into the factors influencing occupants' satisfaction in this particular geographic area.

Furthermore, understanding the factors that contribute to post-occupancy satisfaction is crucial for informing urban development policies and initiatives in Onitsha. The findings of this study can guide policymakers, urban planners, and local authorities in making informed decisions regarding residential property development, infrastructure planning, and community enhancement projects. By identifying the factors that impact occupants' satisfaction in residential properties, this study can contribute to enhancing the quality of life for residents in Onitsha. Insights gained from the research can inform strategies for improving the design, maintenance, and management of residential properties, ultimately leading to higher levels of satisfaction and well-being among residents.

Again, the findings of this study will provide empirical evidence regarding the factors influencing post-occupancy satisfaction in residential properties in Onitsha. This evidence-based approach can help property developers, managers, and investors make informed decisions regarding property design, investment strategies, and tenant satisfaction initiatives.

Lastly, this study will contribute to the academic literature on post-occupancy satisfaction by providing a comparative analysis of residential properties in a specific geographic context. The research findings can serve as a basis for further scholarly inquiry and theoretical development in the fields of architecture, urban planning, environmental psychology, and housing studies.

1.7 Limitation of the Study

The major limitation of this study was in the area of questionnaire distribution and retrieval. It took a lot of time and effort to be able to get the respondents attends to the questionnaires. Thanks to the management organisations of these housing estates for giving the right and needed access during the course of the questionnaire distribution.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter is devoted to literature review. Literatures that were reviewed covers the following areas: residential housing attributes, socio-economic characteristics of housing users, housing/building features and fittings, neighbourhood qualities, management of housing estate, users' perception of housing adequacy and factors responsible for housing satisfaction or dissatisfaction.

2.2 The Concept of Post-occupancy Satisfaction

Post-occupancy evaluation (POE) is a method for measuring building performance in terms of meeting design intent, and identifying any gaps between actual and modelled performances in the of aspects indoor environmental quality (IEQ), occupant satisfaction, energy consumption, etc ¹⁰². Post-occupancy evaluation (POE) is a systematic method to evaluate buildings' performance after buildings have been occupied for some time; it originated in the United States and has been widely used worldwide since the 1960s. The POE activities promote the participation of building occupants, the end-users, and focus on their requirements of buildings in the aspects of health, safety, convenience, amenity, psychological comfort, living quality, and satisfaction ¹⁰³. POE is about procedures for determining whether or not design decisions made by the architect are delivering the performance needed by those who use the building. By using occupants as a benchmark in evaluation, POE provides enormous potential for improving the performance of a building. POE evolved to fill the gap in the conventional building process, which consists of planning, programming, design, construction and

occupancy of a building. It represents the vital diagnostic step needed to feed the prescriptive tools of planning and programming ¹⁰⁴.

2.3 Theoretical Review

The premise that satisfaction measures the discrepancies between a household's actual and desired (or aspirational) housing and neighborhood conditions is the foundation of all theories of housing satisfaction ¹⁰⁵. The majority of empirical investigations are based on one of three main ideas. These are the theories of psychological constructs theory, housing needs theory, and housing deficits theory.

2.3.1 Psychological Constructs Theory

¹⁰⁶ introduced the notion of psychological construct of residential satisfaction and theorized that individuals may be seen as cognitively constructing a reference condition for each particular facet of their residential situation. The quantity or quality of the given facet implied by the reference point will depend on the individual's self-assessed needs and aspirations. If the current situation is perceived to be in proximate congruence with (or superior to) the reference situation, a psychological state of satisfaction should be manifested. If, on the other hand, the current situation falls short of the reference situation by more than a threshold deficiency, two alternatives are possible. One may attempt to reconcile the incongruence by 'adaptation', through redefining needs, reducing aspirations and/or altering the evaluation of the current situation, thereby producing a modicum of satisfaction. The other alternative is that one cannot somehow adapt to the current residential context, in which case dissatisfaction should be manifested. Such individuals, over time, would likely attempt to reduce their dissatisfaction by altering conditions of the present dwelling unit or by moving to another more congruent residential situation. Of course, these options may be relatively limited, e.g.,

by lack of purchasing power for lower income households and discrimination against minority households.

2.3.2 Housing Needs Theory

Rossi introduced the notion of housing needs theory to conceptualize residential satisfaction/dissatisfaction. In his theory, Rossi posited that changing housing needs and aspirations as household's progress through different life cycle stages often place households out of conformity with their housing and neighbourhood situations. The lack of fit between their current and desired housing needs creates stress or dissatisfaction with their current residence. Households respond to such stress or dissatisfaction through migration, which brings a family's housing into adjustment with its housing needs. Life cycle changes may generate different space requirements, which are considered the most important aspect of the needs. Thus, households are likely to feel dissatisfied if their housing and neighbourhood do not meet their residential needs and aspirations.

2.3.3 Housing Deficit Theory

Morris and Winter introduced the notion of housing deficit theory to conceptualize residential satisfaction/dissatisfaction. In their housing adjustment model of residential mobility, they theorize that individuals judge their housing conditions according to normatively defined norms, including both cultural norms, which are dictated by societal standards or rules for life conditions, and family/personal norms, which amount to household's own standards for housing. Thus, an incongruity between the actual housing situation and the cultural and/or familial housing norms results in a housing deficit, which in turn gives rise to residential dissatisfaction. Households with a housing deficit who are hence dissatisfied are likely to

consider some form of housing adjustment. They may attempt to make in situ adjustments to reduce dissatisfaction by revising their needs and aspirations to reconcile the

2.4 General Review of Relevant Studies

Satisfaction in housing is a comparative concept which can vary in line with contextual situations of housing, technological improvement, economy, previous residential experience and movement in the socio-economic ladder¹. This relative nature of housing derives from the term, habitability, which means reasonably fit for occupation by residents. Being reasonably fit however conveys picture of relativity as what is reasonable for one may vary with another². The quality of housing is not static, but varies with circumstances. Since the residents' satisfaction is not absolute, the satisfaction level at a certain point in time can be described only in comparative terms.

It has been established³ that the failure of many public and private housing projects in most developing countries is the non-inclusion or lack of consideration for relevant inputs emanating from the end-users or occupants of residential developments. Often, the design of a new residential development has been patterned along designers' idea and perception³. Also, the designers and all those responsible for such development devote considerable effort to anticipating how future residents will look like rather than considering its suitability towards ensuring a level of satisfaction to its occupants.

Universally, there are increasing efforts to carry out performance studies of occupied buildings in response to the need for more efficient buildings that meet occupant's satisfaction and sustainability challenges. In the late 1970s and some early part of the 1980s, some housing researches witnessed a growing interest in understanding what constitutes consumer

satisfaction or dissatisfaction ^{4; 5; 6; 7}. The reason behind this is simply that buildings must not only appear beautiful aesthetically, but must also satisfy the end-users expectations. As a result of this, both public and private sectors have given much attention to the concept of customer satisfaction. The main conceptual view reflected in these efforts is essentially a cognitive consistency model in which consumers compare pre-purchase beliefs about a product to post-purchase beliefs formed during consumption of the product ⁸.

In a broader context, studies have established that housing has been generally accepted as a main constituent towards having a quality life⁹. Housing satisfaction has been accepted as a complex cognitive construct and product of a number of variables ¹⁰. Based on this knowledge, residential satisfaction within the present study is regarded as a multivariate theory. Quite a number of definitions and theoretical models of user or customer satisfaction exist in literature. By and large, there seems to be a concrete agreement, based on different research work among authors, that satisfaction is the result of an appraisal process in which consumers compare the performance of a product or service with their expectations ¹¹. It is based on this that local governments authorities in both United Kingdom and United States of America carry out regular tenant satisfaction surveys to ensure that households are satisfied with the provided housing and its services ¹².

Similar to the above assertion is the notion of habitability postulated by 4 that refers to a synergy between tenant dwelling and environmental management system. What the habitability system does is to produce a sort of residence, which is regarded by the tenant or dweller component of the system as reasonably, acceptable or adequate and therefore habitable in the light of what tenant or dwellers consider to be their housing need expectation ¹³. Habitability helps to determine the level of satisfaction occupants derive and how

harmonious a particular housing is to the occupier/user. It portrays a human concept. This comprises four interactive subsystems which are: the tenant subsystem, dwelling subsystem, the environment subsystem and the management subsystem. ¹³ further explained that the level of satisfaction derived by an occupant or tenant is a function of the successful interaction of all the subsystems.

The main idea behind habitability simply explains the interaction between man, his dwelling, the environment and the institutional frameworks i.e. the administrative rules and regulation that governs its habitable nature. This concept is widely used on research works in relation with maintenance, management, and satisfaction in residential estates. Earlier studies by ⁴ put forward that housing comprehensive planning text comprises of four main components which are: The shelter i.e. the dwelling itself; the environment in which the dwelling is situated, the people (i.e. occupants/users of dwelling); and the institutional framework (the umbrella management that ensures the efficient functioning of the other components). This concept has been used in a number of studies.

For example, ^{14, 15} used it in his research work: evaluation of maintenance, management of staff housing estates and in a study of tenant's maintenance awareness, responsibility and satisfaction in institutional housing in Nigeria. This concept is good as its performance indicators ensure the habitable nature of apartments and its environment and it is also appropriate for this research work. Habitability concept shows that housing is more than shelter. The components of housing are the people, the shelter, the institutional arrangement and the environment ¹⁶.

2.5 Residential Housing Attributes and Users' Satisfaction

Ideally speaking, housing is often viewed as an entity involving a large number of units showing aspects such as physical quality, location, standard of services offered by the managing agents (either government agencies or private owners), as well as neighbourhood characteristics ¹⁷. Several studies in the housing field indicate that houses are built to accommodate different levels of expectations. ¹⁸ and ¹⁹ suggest that residential spaces can be classified into three levels namely shelter, house, and home. Unlike a house, a home is much more than a physical structure ¹⁸. Shelters are provided to protect people, whereas the creation of a home represents deep social structures. It is important to note that the distinctions are not trivial, sentimental or romantic, but fundamental. According to ¹⁸, 'house' is a denotative concept, which is a 'small dwelling' describing the physical structure of the building, whereas 'home' is a connotative concept. Home is a symbol of the lives spent within it, which means it is connotative of the deep structures of a social system and how these are reflected in the family's relationships to the domestic space it occupies.

Satisfaction with the residential environment is an important aspect of one's quality of life. Housing being provided both privately and publicly should not only satisfy government imposed standards of quality and safety but also fulfil user requirements giving maximum satisfaction under the given resource constraints. The concept of housing satisfaction is multi layered. Studies by ¹⁷ and earlier studies like ²⁰ shows analogous views on the concept of housing satisfaction based on their observation on previous studies. In their opinion, the idea of housing satisfaction has been used for four major objectives relayed as follows: first) it is the key to predict an individual's perception on the overall quality of life. Second) it is also an indicator of individual mobility which later changes the demand on housing and influences

surrounding area change. third) it is used as an adhoc measurement of private sector development success and, fourth) it is an evaluation tool to measure residents' acceptance of prevailing shortcomings for existing surrounding area development; and finally to act as a variable in determining the relationship between the resident's background and his attitude towards mobility.

This study will make use of four basic attributes to evaluate users' satisfaction in some selected private housing estates in Onitsha North. These four attributes are listed below:

- ❖ Socio-economic characteristics of Users
- ❖ Building features and conditions
- ❖ Neighbourhood qualities
- ❖ The Management

2.6 Socio-economic Characteristics of Users

Housing has been defined as a process and a product of providing safe, comfortable, attractive, functional, affordable and identifiable shelter in a proper setting within a neighbourhood, supported by continuous maintenance of the built environment for the daily living activities of individuals/families within the community ^{21, 22}. It further has been posited that housing should reflect the socio-economic, cultural aspirations and preferences of its users with adequate physical infrastructure and social services to meet the basic and special needs of the population ²³. To this end, it has been realized that a successful housing design is one that meets the needs and aspirations of the end user ^{24, 25}.

The study on the level of satisfaction towards housing must take into considerations the socio-economic profile of residents. ²⁶ opined that investigation on the profile of residents must be put into consideration because families with different socio-economic backgrounds usually have different levels of aspiration, tolerance and psychology on housing satisfaction. This opinion also agrees with the findings of a research by ²⁷ on matriarchal low income single families which show that “personality traits are good antecedents to housing satisfaction” ²⁷.

Earlier studies have shown that one single factor that cannot be ignored, which influences housing satisfaction is the household socio-economic status. They comprise; income, occupation, type of dwelling unit, length of stay and head of household education background. ²⁸ investigated housing satisfaction in public core housing in Abeokuta, Ogun state, Nigeria. The result exposes that respondent Socio-economic status such as occupation, education background among others are strong predictors of housing satisfaction. Similar studies that have also worked on either or any of the socio-economic status are: ²⁹, income ²⁶, marital status, income, education background ^{11; 30}, and length of stay in the residence as well as tenure ³¹.

Ethnic background also has a pivotal role to play in influencing the level of satisfaction to housing. Those belonging to the lesser ethnic groups are often linked with low incomes ³². However, an important question does come to mind and it is simply if ethnicities do have an independent effect on housing and neighbourhood satisfaction. ³³ was of the opinion that in some situations whereby concentrations of persons from the same ethnic background emerges, individual belonging to that ethnic group might find some sort of help and support from the same group living in the same estate or have more access to contacts, which in the long run making life in the estate more pleasant. A case for the above argument was also built by ³⁴

that settlers who cannot speak the language of the guest country and settlers with a low education have the tendency to focus themselves on neighbourhoods where majority of their fellow natives are already settled and live.

But this earlier research investigated by ³⁵ on low-income dwellers at Dewan Bandaraya, Kuala Lumpur public housing revealed a contrast in satisfaction towards housing among diverse ethnic backgrounds. They established that the Malays (of the Malaysian origin) recorded the lowest level of satisfaction towards housing as likened to their counterparts who were of the Chinese and Indian origins. The major variable that the study considered was income and the level of educational attainment of the occupants. The study was silent on the age; sex and family size of the respondent in the study. The study further reported that residents with low level of education showed a high level of satisfaction towards their dwellings (except the neighbourhood aspects) as compared to those with higher educational level. Their studies also found that there is no correlation between the respondent's income and the level of satisfaction for all aspects of housing.

A study by ²⁶ revealed that residents who are aging have lower level of ambition as regards their dwellings but a higher level of tolerance towards any inadequacies as compared to the younger residents. ³² also posited that older people, for example, might have a positive attitude of the estate. The reason for this assertion is for the reason that they have in general lived there for long, and are thus very much familiar with the area, its people within the neighbourhood and, for instance, the shops. But these older people might also show some negativity too. The reason for this maybe because they might have witnessed all kinds of adverse changes in the estate: the population may have drastically changed and many friends or neighbours that they may have been used to might have moved or died; the residences and

buildings may have started to show signs of obsolescence and deterioration might have set in
32.

³⁶ examined satisfaction with public housing among urban women in Ogun state, Nigeria. A cross-sectional survey of residents in nine housing estates constructed by the Government of Ogun State between 2003 and 2010 was conducted using structured questionnaire as data collection instrument. The study revealed that the respondents were most satisfied with housing unit features; the main source of dissatisfaction was poor access to basic services and social infrastructure in the housing estates. The management aspects of the housing schemes, size and security of the dwelling units were the main factors that determined respondents' satisfaction with their housing environment. These findings suggest that the design and construction of housing units to specified standards does not ensure housing satisfaction, rather the management aspect of public housing which includes the location of the estates and provision of basic services and infrastructure are also important in enhancing housing satisfaction among low and middle-income urban women.

³⁷ also investigated how socio-economic characteristics predict housing satisfaction in Nigeria using Prince and Princess housing estate in Abuja. The study argued that housing satisfaction studies provide basis to ascertain the performance of housing development programme/project while taking into consideration peculiar characteristics of the housing occupants. This should however, be seen as a continuous process to integrate some of the changing situations associated with human and physical development unveiling more intricate parameters of residential satisfaction. The study revealed that among the socio-economic factors, occupation/employment have showed greater effect on housing satisfaction, making statistically unique significant contribution. The finding also corroborated ³⁸ that occupation

was discovered to predict housing satisfaction. The major criticism of the study is that it only considers one housing estate of all the housing estates in Abuja, and only considered just one factor which could lead to tenants' satisfaction or dissatisfaction in any dwelling.

2.7 Building Features and Conditions

There are a whole lot of parameters in determining what makes a proper living environment. ¹⁷ opined that in order to distinguish whether a house is in good quality or not, the dwelling units; both internally and externally must be put into consideration alongside the nearby area. Internal dwelling unit features are mainly the dwelling size ³⁹, Size of living room, bedroom, kitchen, toilets and washing area ¹⁷, number of bedroom ^{40; 28}, location of bedroom and size of dining room ⁴¹ laundry and washing area ⁴².

The combination of size of dwelling unit, living room, bedroom, dining room, toilets and bathroom, kitchens are the main issues studied by various scholars since 1980s ⁴³. Housing satisfaction towards dwelling units most times are influenced by the building conditions and the features that are evidenced in the building ⁴¹. Onibokun, cited in ¹⁷ has categorized the condition of the building and its features as dwelling subsystems to the human environment that has impact on the level of satisfaction derived from housing. ⁴⁴ also corroborate this view by saying that housing construction hardly speak of the needs and types of families who are going to dwell in those houses, and these conditions are important in the creation of human environment.

General and common sense knowledge tells us that different building types like detached house, terrace house or block of flats; would give different satisfaction level to their occupants. To succinctly put it, the level of satisfaction towards housing varies according to the type of

apartment occupied by the family. For example, a research conducted in three local authorities areas in London housing study in 2001 revealed that residents living in multi-tenanted high-rise flats most often face the problem of rental arrears as compared to those in low-rise flats. This statement is confirmed through results of previous work done by ⁴¹ and ⁴⁵.

Studies by Kain and Quigley cited in ¹⁷ and ⁴⁶ have also stressed the importance of good quality dwelling as a factor that determines residents' satisfaction. The higher the quality a dwelling is, the higher the occupant's satisfaction towards it ⁴⁶. They restated that housing feature must not be assessed based on one variable only, the fact is various aspects must be studied whether on its objective dimensions or subjective dimensions.

According to them, basic housing quality factor refers to the index used to measure the housing surrounding area's external physical quality. Surrounding property quality factor is assessed from the general cleanliness of the surrounding area, its ambience and landscaping; the factor of quality for non-residential uses is measured from the effects of industrial and commercial uses in residential areas. The effects are assessed based on the level of discernible noise, air quality and traffic flow in the area; whilst dwelling unit quality factor is assessed from the structural aspects and internal hygiene of the dwelling unit. The structural average quality factor on the other hand is assessed based on the structural soundness on the building facade.

2.8 Neighbourhood Qualities

One of the fundamental reasons why neighbourhoods are studied is simply because they are the location where people spend the majority of their lives ⁴⁷. An extensive literature review shows that neighbourhoods can affect the educational, economic, and social outcomes of

individuals⁴⁸. Where a person lives may determine to a very large extent what schools they are able to attend, what occupational opportunities they have or that is available to them, and among other things; the kind of social networks they develop. As a result of these, neighbourhoods can influence a person's educational attainment in life, their income levels, teen childbearing probabilities, and propensity to commit crime⁴⁸. In this way, examining neighbourhood quality should be of utmost importance for policy makers who wish to improve on these outcomes for residents⁴⁷.

Households in the low-income cadre are known to often choose dwellings that suit them. Circumstances such as ease of access to the place of work, schools and shops are most times considered. Generally, areas populated by this specific segment of the population were picked based on their societal status Troy, cited in¹⁷. Troy further opined that when a family lives in an area that fits their societal pedigree, their level of satisfaction towards their social surrounding will also be affected positively.⁴⁹ further added that residents' reaction towards the area they are living is as a result of satisfaction towards the housing surrounding.

Also,⁵⁰ concurred with⁴⁹ on the assessment which indicated that the feedback shown by residents in a housing space should be the source for policy formulation. Researches detailing the aspects of surrounding area were abundant and among the empirical studies done in Sweden on some 6,000 respondents in eight towns. This work acknowledged ten neighbourhood qualities to be: good public transport, building exteriors with high aesthetic values, security and surrounding area control, not noisy and no traffic congestion, proximity to commercial areas, good quality along the building surrounding, good reputation, proximity to town centers, proximity to open spaces and a favorable environment⁵¹. The work by⁵² considered items such as friendly neighbours, trust in neighbours; socio-economic status of

neighbours, trustworthy neighbours; neighbours with mutual interests, helpful neighbours, types of occupation and the level of education attained as parameters to measure the level of satisfaction towards the neighbourhood ⁵².

⁵⁰ also explored the level of housing satisfaction in low-cost housing areas developed by the private sector. He examined critically two important aspects that usually influence people's quality of life which are satisfaction towards housing and its adjoining area. The conclusions of the study revealed that neighbourhood factors happened to be the most dominant factors in defining the level of satisfaction towards housing. The study also reported that lack of children's playing ground; multipurpose hall, public transport, safety and facilities for the disabled, parking areas; were responsible for low level of satisfaction as well as surrounding area. The simple reason adjudged for this is because most private developers are more profit oriented and at times pay less attention to providing neighbourhood facilities and a conducive environment within the estate which can increase their profitability in the long run.

²⁰ came up with three important factors that affect satisfaction towards housing in their study. They are: dwelling unit, neighbourhood and community services factors. Neighbourhood factors are ranked as highly impactful when it comes to overall housing satisfaction. Factors considered under neighbourhood aspect were distance to work place, location of schools, the level of privacy achieved by the residents, and infrastructural services and amenities ²⁰.

⁵³ also examined housing development form on neighbourhood satisfaction, looking at density and the surrounding environment. The outcome of the study showed that a negative feeling towards high density was not caused by the existence of high density developments in itself, but on the presence of unattractive cityscape and impediment of view due to the high

compactness development. The implication of this is that neighbourhood satisfaction depends to a large extent on the actual size of lot. Residents who cannot see their neighbours' houses and have a better regular view feel that their lots are not so small and do not encounter privacy difficulties or feel that the neighbours were too close to their house. Hence, they are of the opinion that high density developments require natural view to enhance satisfaction towards the neighbourhood ⁵³.

2.9 The Management

Buildings generally, are created to provide a favorable and safe environment for various human activities. This, essentially, is the question of performance. The extent to which the buildings provide the required environment for the required activity is a measure of the functionality of the building ⁵⁴. Like any other human endeavor, maintenance activities demand someone to manage them.

According to ⁵⁵, effective management practices still remain the philosophy or practice of organized human activity, and well equipped managers are the people responsible for the conduct and control of such an undertaking. The manager is therefore concerned with the ways and means of getting a job done. Building maintenance managers are inevitably decision-makers. On regular basis and in the course of carrying out the maintenance process, they are usually faced with the task of making decisions about how to plan the works, how to obtain materials, how to guide workmen, how to organize the maintenance department, and a myriad of other matters ⁵⁶.

Also, ⁵⁵, in his proposition, explains that maintenance manager should have the requisite knowledge and skills necessary to make valid decisions about what to do and how; their

sources of knowledge about building maintenance include experience, authority and tradition, and that it is the knowledge of management that makes the most valuable contribution to decision-making in maintenance works.

Managerial role in putting the housing environment in order is important especially in multi-tenanted housing. The effects of management can be felt through the way tenants are being selected, methods and times of rent collection, security and tenant relations, implementation of the law, maintenance, hygiene and so on ⁵⁷. Tenants housing satisfaction are greatly influenced by the relationship that exists between managements and tenants ⁵⁸. Furthermore, the quality of services offered and the time taken by management to effect repair services is said to influence the level of tenant satisfaction towards their dwellings ^{59; 41}. In a study by ⁷, variables such as water supply, electrical wiring, plumbing and building repairs, security and garbage disposal were variables considered as management factors that influenced the level of satisfaction among tenants of low-cost housing managed by DBKL.

2.9.1 Management Strategies

The dynamic nature of real estate investment undoubtedly requires constant care, attention and a proper and effective managerial strategy. Management strategies involve taking strategic decisions that would enhance effective maintenance of the housing estate and thereby protecting the investment. Housing management comprises of a variety of undertakings which include technical management (maintenance, renovation, etc.), social management (housing allocation, etc.), financial management (treasury, rent policy) and tenure management (letting, buying, and selling). Also, part of management strategies of

housing estate involves establishing goals, objectives and policies and the implementation of the strategies to achieve those goals and objectives.

Property management is an activity that seeks to control interests in property taking into consideration the short and long term objectives of the property owner and particular purpose for which the property is held. Also, from a pragmatic point of view, property management is the work carried out to manage and maintain the development including its facilities at the level that will retain or enhance the value of the development, create a safe, functional and conducive living environment for occupants, keep or restore every facility in efficient working order and in good state of repair, and project a good appearance or image for the development". Inherent in the two definitions above is the need for an effective property management strategy to ensure that the housing estate meets the end users' satisfaction.

Management strategy of large and multi-tenanted housing estate can be carried out on three different levels which are in-house, outsourcing or a combination of the two earlier mentioned approaches called hybrid. In-house refers to conducting every management activity regarding the estate and its day-to-day maintenance operations within the developer's firm or organization. This scenario is especially true for housing estates that are Built, Let and Manage by the developer. The developer firm simply uses its own employees to carry out the management and maintenance activities of the housing estate instead of contracting it out to an outsider.

Outsourcing on the other hand can be simply defined as "the partial or total contracting of a business task, function, or process to an external service provider". It encompasses replacing the internal provision of services with the external provision of those services. For the purpose

of this thesis, the term 'outsourcing' includes related variations such as out-tasking, strategic alliances and partnership arrangements. It includes all applications from the provision of a single task to the total replacement of a business function. It is recognized that many organizations operate hybrid structures where activities are partially outsourced.

2.9.2 Maintenance Approach/Strategy

The main reason why properties are maintained is essentially to retain its values for investment, to maintain its beauty, for safety reasons, to ensure it is durable at all times; with a view to ensuring that the property is continually in good condition for habitation and to the satisfaction of the owner(s)/users and public prestige⁶⁰. British Standard defined maintenance as this: “the combination of all technical and administrative action intended to retain an item in, or restore it to a state in which it can perform its required function”⁴³.⁶⁰ further noted that “a poor quality living accommodation will impact negatively on the physical and mental health of the residents of a housing estate”.

The choice/selection of an appropriate maintenance method strategically depends on sound and informative investigation and initial appraisal⁶¹.⁶² also opined that the three main conditions that must be present in formulating an effective maintenance policy are: the choice of maintenance strategy, defining maintenance standard and allocation of maintenance resources. Also,⁶³ is of the opinion that the choice of maintenance strategy is influenced by one or more of the following factors: first) Age, character and prospective life of the building; second) The physical condition of the building and its elements; third) Environmental conditions; fourth) Tenants (users) and clients requirements; fifth) Government policy and

sixth) Financial requirements and available fund. The entire above named element must interplay to have an effective maintenance policy.

Although, there is no agreement amongst authors about the different types of maintenance available ⁶¹ to a property manager, however, three types of maintenance strategy have been documented in literature. They are: preventive maintenance, condition based maintenance and corrective maintenance. ⁶² classified both preventive and corrective maintenance under what is known as “planned maintenance” in their study. ⁶⁵ added another strategy known as responsive maintenance, which was later adopted by Cambridge City Council in 2011.

2.9.2.1 Corrective Maintenance: ⁶⁶, ⁶⁷, and ⁶⁸ all defined corrective maintenance as unplanned maintenance. However, ⁶⁹ opined that the word ‘unplanned’ is not fitting in that every maintenance action is planned but the logistics of execution allows work to be done only after failure has occurred. The major disadvantage of this type of maintenance strategy is the fact that Failure of an item can cause a large amount of consequential damage to other elements/parts of the building, and can occur at a time, when it is inconvenient to both the user and the operator. Substantial costs can be incurred obtaining emergency manpower and very often it is difficult to obtain spare parts at short notice.

2.9.2.2 Preventive maintenance: This is also known as forward or planned maintenance and it involves the prediction of maintenance needs ⁷⁰. The Planned Preventive Maintenance has been described as the most effective maintenance strategy against the frequency of breakdown. The PPM involves: Scheduled inspection, service, and repair to maximise equipment life, and the level of services at property, and reduce equipment breakdowns and service interruptions. British Standards Institution views preventive maintenance as “works carried out at

predetermined intervals, or to other prescribed criteria and intended to reduce the likelihood of an item not meeting an acceptable condition". Careful preventive maintenance eliminates corrective and emergency repairs later. When PPM is effectively done, it thus enhances removal of danger to persons and structures of the house, keep building weather proof, operational efficiency of the occupants, security and hygiene is guaranteed, appearance of the building good, comfort of occupants or service prestige.

2.9.2.3 Condition Based Maintenance (CBM): This system is also called "Condition controlled maintenance and its presupposes that there will be inspection at appropriate intervals in order to determine by visual means or measure whether or not the condition of the elements or their performance has deteriorated below that laid down ⁷¹. Condition based maintenance is similar to Pre-Planned Maintenance in that regular inspections are made and the condition recorded, however, no work/replacement would be undertaken until there was a significant change in condition/performance of the item. Usually, CBM will be applied to items whose condition can be monitored and for which the cost of applying condition-based maintenance is less than the cost of applying corrective or preventive maintenance.

Irrespective of maintenance strategy being adopted, ⁷² opines that the maintenance works should: a) Meet statutory obligations in relation to the maintenance of the building, b) Secure the well-being of its users/occupants c) Maximise the physical life of the building, d) Achieve value for money for all expenditure, e) Protect and enhance the investment value of the building, and f) Facilitate and encourage tenant participation in the maintenance operation.

2.10 Users' perception of Housing Adequacy in terms of features, fittings and Attributes

It is important to note that a house may look very good physically, but functionally may not be adequate. There has been and still in progress, a serious discourse in literature as to what constitutes an adequate house. While some like ⁷³ sees it as the kind of house that provides the most basic needs of occupants in terms of biological, psychological, social and economic needs of individuals, families, communities and society at large, others like ⁷⁴ indicated that “a shelter can be called adequate housing if it is decent, safe, habitable and affordable in meeting the four fold functions of physiological and psychological needs, protection against contagions and accidents”.

The term adequate and decent housing has often been used interchangeably in literature to mean almost the same thing. A house is seemed to be decent if it is adjudged to be adequate in all the essential facilities that made up a house. According to the right to adequate housing in an article of the Covenant of United Nations High Commissioner for Human Rights ⁷⁵, certain criterion must be present in a house to make it a decent house. One of those criterions is Habitability. This signifies that a house must provide adequate space for the inhabitants as well as protection from weather conditions, health threats, structural hazards and diseases. Such a housing unit must be constructed with materials that provide protection and comfort for occupants.

Housing must also provide adequate space for occupants, thus overcrowding should be prevented ensuring comfort and health for inhabitants. In a similar vein, Housing Support Unit opined that a decent housing is such a dwelling which does not require investment in the short term to prevent it from becoming non-decent. They described a decent housing as one

that meets all the four criteria of (i) fitness (habitability) standard based on health and safety, (ii) a reasonable state of repair, (iii) has reasonably modern facilities and services (e.g. kitchen, bath room, WC), and (iv) provides reasonable degree of thermal comfort and noise insulation.

According to ⁷⁶, member states of this organization at the United Nations second HABITAT Conference which held in Istanbul in 1996, unanimously defined adequate housing to mean shelter that provides “*adequate privacy and space, physical accessibility, adequate security, secured tenure, structural stability and durability, adequate services and infrastructure, suitable environmental quality and health related factors*”. They further were of the opinion that housing adequacy often varies from country to country and depends on specific cultural, social, environmental and economic factors ⁷⁶.

In a study done by ⁷⁷ on Housing and Health, it was noted that a dwelling is suitable for human occupation if it fulfills a number of requirements, namely: structural soundness, free from repair, and dampness prejudicial to health of occupants, adequate provision for lighting, heating and ventilation. This view was also corroborated by ⁷⁸ in a paper presented at the Australian Housing Institute Rental Affordability Symposium in Waitakare. Others in this category are provision of satisfactory facilities for the preparation, cooking and storage of food, adequate supply of wholesome water, and efficient system for draining of foul, waste and surface water. Many of these physical features of housing environment mentioned above are known to have a significance influence on mental health and social pathology of users of buildings, suggesting that deficiency of any of them can contribute to mental breakdown of occupants ^{79, 80}.

⁸¹ investigated the similarities and differences in residents' perception of housing adequacy and residential satisfaction in some public housing estates in Ogun state, Nigeria. The study revealed that there were obvious differences in how residents of public housing evaluate housing adequacy and residential satisfaction. These are seen in the way different age groups perceived the two concepts; dimensions of evaluation; and the factors that influenced residents' perception of these two concepts. Residential satisfaction, tenure and income emerged as the three strongest predictors of housing adequacy, while housing adequacy, employment status and sex of the respondents were the three strongest predictors of residential satisfaction. Age of the respondents was found to be the only predictor of both housing adequacy and residential satisfaction. However, the only limitation of the study is that it was done on public housing estates.

2.11 Assessing Housing Adequacy from the Users' Perspective

Assessing housing schemes is a crucial task to determine their effectiveness and to provide a useful feedback to the projects' initiators ⁸², whether in the public or the private sector. However; most of the assessments have often times, exclude inputs from residents thereby resulting in solutions that do not reflect the peculiar needs of residents. Earlier studies by authors like ⁸³ have put forward why residents must be included in assessing housing adequacy. Their study established that the adequacy of housing environment has a strong direct link with users' preferences and their socio-economic characteristics.

Usually, housing end-users give their assessments about buildings and the facilities inherent in them based on their interactions with such building services as against the notions of professionals who design the buildings and amenities and who may never use them at any

point or the other ⁸⁴. The implication of the above therefore is the fact that the views of a housing occupant on its adequacy with meeting with his or her expectations for instance would be different from the architect's, the builder's and other professional involved in the construction of such building.

⁸⁵ expounded that the objective assessment of housing adequacy must involve investigating the availability or otherwise of housing services; social infrastructure and management practices; and the physical and spatial features of housing units. What this then means is that housing adequacy can be objectively measured by assessing the following: (i) spatial characteristics (e.g. sizes and layouts of interior spaces, the number of bedrooms, lighting and ventilation of interior spaces, security and privacy) of dwelling units; (ii) interior and exterior structural conditions (e.g. structural soundness of the houses, state of disrepair of building elements such as walls, windows, doors, roofs, floors and ceiling); and (iii) the availability of basic social amenities (e.g. good drinking water, power supply, sanitary services) and so on.

⁸⁶ investigated dwelling apartments provided by private apartment Companies in Dhaka, Bangladesh. The authors reported that hygienic condition, physical quality, standard of services, location, and neighborhood characteristics were rated as very crucial to the residents.

⁸⁷ study which focused on public housing in Ogun State reported that residents evaluated their housing as inadequate in meeting their needs, expectations and aspirations based on four key housing-related dimensions: ambient condition of interiors spaces, security, utilities and neighbourhood facilities; social infrastructure; level of privacy and size of sleeping areas; and living and dining areas. The authors observed disparities in the standards used by users and experts in housing quality assessment.

⁸⁸ study on assessing housing projects end-users satisfaction in Ghana established that although end-users were generally satisfied with building design features especially room height and material finishes, they however expressed dissatisfaction with housing designs without balconies, terraces, and outdoor spaces for traditional food preparation and socio-cultural practices, location, high dust and noise levels, inadequate social infrastructure and poor management practices.

2.12 Factors inducing Users' View of Housing Adequacy

There are a number of inducing factors that shapes how housing users view the extent of their housing adequacy. Amongst them is socio-economic status of the users, stage in lifecycle of the user, their age, tenure and household type ⁸⁹. The study further stated that people of low status, and between the ages of 25-45 years old, renters and single parents; tended to rate their housing lower than other persons. Furthermore, ⁹⁰ study on "Quality housing for sustainable communities" postulated that housing should be socially, architecturally, and environmentally appropriate; accessible and adaptable; safe, secure and healthy; affordable and resource efficient.

In a study by ⁹¹, it was documented that individuals who are less than ³⁵ years of age are more likely to be dissatisfied with their dwelling than respondents who are aged ³⁵ years or older. The study further established that people from the age of ⁶⁵ and above are usually the most satisfied with residential conditions, this being explained by their higher economic resources, smaller family size and higher rates of home ownership among the elderly. This view was also corroborated by ⁹².

⁹³ study on determinant of residential satisfaction and its relation with wellbeing also noted that most people chose to live in a house after careful considerations of many factors, some of which go beyond the physical and structural characteristics of the dwelling and of the surrounding area (*e.g.* local employment opportunities, efficiency of public transport, access to recreational areas, social networks). Also, Onibokun cited in ⁹³ notes that a dwelling that is adequate from the physical and design point of view may not necessarily be adequate from the household's point of view. The concept of adequate housing conditions is therefore related not only to the physical, architectural and engineering components of the house, but also to the components of the surrounding environment.

2.12.1 Factors Responsible for Housing Satisfaction or Dissatisfaction.

Basically, a number of reasons had been adjudged for the cause of housing satisfaction or dissatisfaction. ⁹⁴ examined a factor approach to the analysis of components' defects in housing stock. Defects as suggested by the researcher are reported, according to the complaints lodged by users. The study reported that components are judged to have failed if sufficient complaints are received from occupants that concern their house conditions. These mentioned defects, other than causing illness and psychological problems to the occupants; also tend to raise the feeling of dissatisfaction among the occupants ⁹⁴. The satisfaction of customer is directly proportional to the number of defects found in construction at occupancy stage. Defect, according to ⁹⁵ is defined as “the improper work or error in work that may be caused either by material or by workmanship. Sometimes it is also caused by incorrect methodology adopted for execution of the work”.

In a study by ⁹⁶ on defects cost in residential construction, the definition of failure and defect was given as follows. “A failure is a departure from good practice, which may or may not be corrected before the building is handed over”. A defect, on the other hand, “is a shortfall in performance which manifests itself once the building is operational”. The severity of a defect has also been given universal attention in the literature, as definitions that have been proposed have been thwarted with ambiguity and uncertainty have suggested that defects can be classified as being *minor* or *major*. Minor defects are those that arise from poor workmanship or defective materials used in the erection or construction of the building but do not render the building unsafe, uninhabitable, or unusable for the purposes for which the building was designed or intended. A major defect, on the other hand, is defined as one which “renders the building unsafe, uninhabitable, or unusable for the purposes for which the building was designed or intended”.

When a house is laden with so many defects, dissatisfaction is what you get. This fact has been corroborated by studies such as ⁹⁷ and ⁹⁸ that the occupant’s satisfaction or dissatisfaction level has a relationship with their house conditions. ⁹⁹ puts forward that defects may be associated with any element or function of the building. For illustration, the study documented nine types of residential house defects in Victoria, Australia to be: rising damp, stumps, water supply systems errors, framing, illegal building, timber rot, cracking, electrical, and roofing. He identified that typical defects in residential buildings included: cracks in walls, especially at natural lines of structural weakness (e.g., windows, door junctions with extensions and bays); bulging/bowing of walls; rising dampness; uneven ground-floor slabs; movement in upper floors; damp penetration of roof; cracking to render; loose/hollow render; condensation; faulty heating, plumbing and electrics; and blockages/leaks to drainage. The list

is not exhaustive but provides a useful outline of the usually encountered defects ⁹⁹. He summarized the many building defects into several common types: structural defects resulting in cracks or collapse; defective or faulty electrical wiring and/or lighting; defective or faulty plumbing; inadequate or faulty drainage systems; inadequate or faulty ventilation, cooling or heating systems; inadequate insulation or soundproofing; and inadequate fire protection/suppression systems.

⁹⁵ identified three critical areas in which defects could appear in a house. They are: defects in the building itself, defects due to workmanship and design decisions and defects in building services. In a study by ¹⁰⁰ on some Common maintenance problems and building defects in Malaysia, the researcher reported some common building defects which are: waterproofing issues, soil settlements, wall finishes problem, cracks, staining, lack of knowledge and expertise on maintenance aspects. The researcher also explained that, the performance of waterproofing system depends upon many factors i.e. quality of material, skill of workers, application methods, substrates condition, weather, maintenance etc. According to him, a typical crack of building in Malaysia is of non-structural type i.e. shrinkage cracks, joint cracks etc. surface cracks are commonly found on floor screed and normally caused by improper curing process. Joint cracks are commonly seen at the joint of different structural elements such as column/brick wall and beam/brick wall.

In a study by ¹⁰¹ conducted in Ondo state, Nigeria, on public housing provision and user satisfaction, the findings revealed that there was a high rate of satisfaction with factors such as proximity to religion center and adequate size of the living room while the high rate of dissatisfaction was documented in the area of recreation facilities, nearness to health facilities and availability of children play area.

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CHAPTER THREE

METHODOLOGY

3.0 Introduction

This Chapter outlines the method that would be employed empirically to investigate in an attempt to satisfying the objectives of the study. It would address the research design, sampling techniques, population, sample frame, sample size, questionnaire design, choice of data collection instruments, and the techniques of data presentation and analysis for the study.

3.1 Research Design

For this current study, the survey research design would be adopted. Survey research design is a methodological approach used in social science and market research to gather information from a sample of individuals or organizations. It involves the systematic collection of data through the administration of questionnaires or interviews, typically in written or electronic form. Survey research design can be used to investigate a wide range of topics, including attitudes, behaviors, preferences, opinions, and demographics. It is a versatile and widely used method for collecting quantitative data in both academic and applied research settings.

3.2 Description of the Study Area

Onitsha North is a Local Government Area (LGA) in Anambra State, Nigeria. It is located in the south-eastern part of the state, on the east bank of the Niger River¹. The LGA has a population of over 125,000 people and is the most populous LGA in Anambra State. The headquarters of Onitsha North LGA is in GRA, Onitsha. The LGA is made up of 15 wards, including American Quarters GRA, Inland Town I-VIII, Ogbe Umuonicha, Trans Nkisi, Water-side Central 1, and Water-side Central II. Onitsha North LGA is known for its vibrant economy, which heavily relies on trade. The region is home to a number of marketplaces,

including the well-known Onitsha main market, the biggest market in all of West Africa. The LGA is also home to numerous businesses controlled by the government, as well as businesses like banks, hotels, restaurants, and places to unwind.

The economy of Onitsha North LGA is heavily dependent on trade, with the Onitsha main market being the largest market in West Africa. The market attracts traders from all over Nigeria and beyond, making it a significant contributor to the local economy. The LGA is also home to numerous businesses owned by the government, as well as private businesses like banks, hotels, restaurants, and entertainment venues. These businesses provide employment opportunities for the local population and contribute to the local economy. Onitsha North LGA has an average temperature of 26 °C and experiences two major seasons: the dry and rainy seasons. The area is characterized by heavy and frequent rainfall, which can lead to flooding. The Niger River flows through the LGA, which adds to the risk of flooding. The LGA has experienced several degrees of conflicts and riots, as well as floods, which have affected the local population and businesses.

In 2022, the main market in Onitsha North was hit by a flood, which destroyed goods worth millions of Naira and forced traders to stay off their stores for a month. The flood was attributed to urbanization and illegal structures that blocked the natural flow of water. The Nigerian Meteorological Agency (NIMET) and the Nigerian Hydrological Service Agency (NIHSA) have also stated that floods will affect Onitsha North and other communities in the region. The State Emergency Management Agency (SEMA) has begun flood mitigation measures and issued early warnings to residents of Onitsha North and other flood-prone areas. Internally displaced persons (IDPs) camps were established in Onitsha North local government area to host flood victims from Ogbaru and Anambra West Local Government

Areas. The camps also host flood victims who moved to Onitsha from other states and communities. The Onitsha North Council Area was turned into an IDP camp when the victims overflowed the Crowther Memorial Primary school that was initially designated to host them.

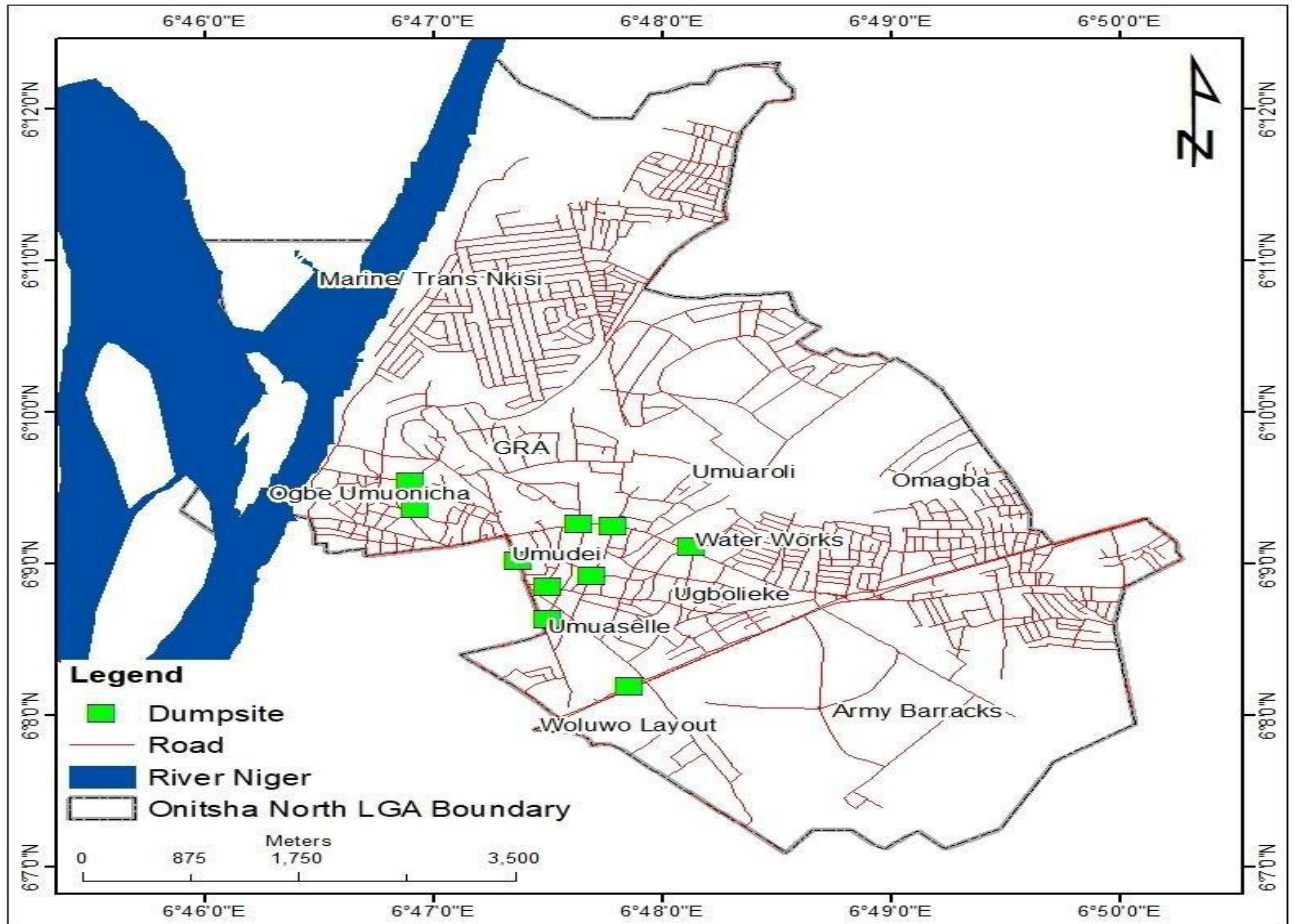


Fig. 3.1: Map of Onitsha North LGA

3.3 Study Population

For this study, the populations would be divided into two: the occupants of private housing estates in the study area and the people in charge of the management of these housing estates.

The choice of the occupants is based on the fact that they are the ones that live in these housing estates and they have first-hand information and experience from the use of the estates. The management also provided information on the strategies being put in place in ensuring occupants and the housing estates are properly taken care of. Primary data would be sourced directly from the occupants of these selected private housing estates in addition with physical observation of the characteristics of houses within the estates.

3.4 Sampling Techniques

Multi-stage sampling would be adopted. The process involved first determining the areas, in which each of the private housing estates would be chosen from, and then a purposive sample would be adopted in selecting the private estates.

3.5 Sample Frame

The sample frame from the pilot survey conducted comprises 560 household heads from three purposively selected private housing estates in the high, medium, and low density areas of Onitsha North, Anambra state. Onitsha GRA has 350 units, Akpaka Housing estate has 106 units and American Quarters has 104 units. These housing estates were purposively selected for the study.

3.6 Sample Size

50% of the sample across the three housing estates would be considered for the study.

3.7 Data collection Method

Questionnaire administration would be adopted for data collection. This is considered the most appropriate because the respondents are learned people, and therefore could read, write and comprehend the language in the questionnaire. Two sets of questionnaires would be

administered. The first one would be on the occupants of these private housing estates, while the other would be administered on the head, management department of these estates to source information about the management strategies being adopted in them.

3.8 Method of Data Analysis

In order to accurately do proper analyses to the information that would be sourced from all the respondents involved in the survey, both descriptive and inferential statistical techniques would be employed. Statistical tools such as frequency distribution and percentages, mean rating and mean deviation, and factor analysis would be employed.

Table 3.1: Summary of Data Analysis Techniques

	Formulated Objectives	Proposed Data Analysis Technique
Objective One	examine the socio-economic characteristics of the users in the selected private residential estates in Onitsha North, Anambra State	Frequency Distribution and Percentages
Objective Two	examine the Housing attributes and management strategies of the selected private residential estates in the study area;	RII
Objective Three	examine the level of residents satisfaction with the Housing attributes and management of the selected private residential estates in the study area	RII
Objective Four	examine factors that influences residents satisfaction with the housing attributes and	Factor analysis

management of the selected
private residential estates in the
study area

3.8.1 Frequency Distribution and Percentages

Frequency distribution would provide the basic distribution characteristics of the spread of variables/data employed in the research. The frequency distribution would be employed to report the different value attributable to each variable from the highest to the lowest in terms of occurrence or in terms of their measures of central tendency (mean), while percentages is the proportion of the variables/data that would be employed in terms of one-hundredths. The outcome of the frequency distribution will be used in resolving objectives one, two and three respectively.

3.8.2 Relative Adequacy Index

To examine the housing attributes as stated in objective two in terms of adequacy, Relative Adequacy Index (RAI) was adopted. The respondents were instructed to rate each housing attributes using one of the five ratings of Likert scale: **Very inadequate, Inadequate, Just adequate, Adequate and Very adequate**. Each of these was respectively assigned a value of 1, 2, 3, 4, and 5. The summation of the weight value (SWV) for each variable is obtained through the addition of the products of the responses for each rating of the variable and their respective weight values. This is mathematically expressed thus:

$$SWV = \sum_{i=1}^5 X_i Y_i \dots\dots\dots(3.1)$$

Where: SWV is the summation of weight value,

X_i is the respondents' rating of a particular variable (attribute)

Y_i is the weight value assigned to each variable ($i= 1, 2, 3, 4,$ and 5)

The ‘Relative Adequacy index’ (RAI) for each variable (attribute) influence is arrived at by dividing the summation of weight value by the addition of the number of respondents to each of the five ratings. This is expressed mathematically as:

$$RAI = \frac{SWV}{\sum_{i=1}^5 X_i} \dots\dots\dots(3.2)$$

Where RAI is the ‘Relative Adequacy index’, SWV and X_i are earlier defined. The closer the RAI of a particular variable to 5, the higher is assured of the users’ perception of the adequacy of housing attributes of the selected private residential estates in the study area.

3.8.3 Relative Satisfaction Index

To determine the level of satisfaction as set out in Objective four, Relative Satisfaction Index (RSI) was used. The respondents were instructed to rate each housing attributes using one of the five ratings of Likert scale: **Very Dissatisfied, Dissatisfied, Fair, Satisfied and Very Satisfied**. Each of these was respectively assigned a value of 1, 2, 3, 4, and 5. The summation of the weight value (SWV) for each variable is obtained through the addition of the products of the responses for each rating of the variable and their respective weight values. This is mathematically expressed thus:

$$SWV = \sum_{i=1}^5 X_i Y_i \dots\dots\dots(3.3)$$

Where: SWV is the summation of weight value,

X_i is the respondents’ rating of a particular variable (attribute)

Y_i is the weight value assigned to each variable ($i= 1, 2, 3, 4,$ and 5)

The ‘Relative Satisfaction index’ (RSI) for each variable (features and fittings) influence is arrived at by dividing the summation of weight value by the addition of the number of respondents to each of the five ratings. This is expressed mathematically as:

$$RSI = \frac{SWV}{\sum_{i=1}^5 X_i} \dots\dots\dots(3.4)$$

Where RSI is the ‘Relative Satisfaction index’, SWV and X_i are earlier defined. The closer the RSI of a particular variable to 5, the higher is assured of the users’ perception of satisfaction of that feature and fittings of the selected private residential estates in the study area.

3.8.4 Factor Analysis

Factor analysis is a statistical procedure used to identify small numbers of factors that can be used to represent relationships amongst set of interrelated variables. It is usually employed to reduce many variables or factors to few relatively independent, conceptually meaningful, and small numbers of hypothetical variables, each of which represents some combination of original variables by factors extraction. It is also used to categorise variables contextually into more latent variables (LV)/factors instead of any individual manifest variables (MV). Factor analysis would be used in this study to group items discovered in literature and from users’ perception about factors that mostly influence their satisfaction with the housing estates studied.

CHAPTER FOUR

RESULTS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter puts forward the results and discussion of the data collected in line with the objectives of this thesis. The questionnaire distribution and retrieval spanned over a period of 14 weeks. Table 4.1 and 4.2 shows the number of questionnaire distributed and the rate of retrieval for the purpose of the analysis.

Table 4.1: Distribution of questionnaire to the occupants of the three housing estates

Name of Estates	Numbers of Questionnaire distributed	Valid Questionnaire Retrieved	Percentage of Questionnaire Retrieved
Onitsha GRA	175	134	76.57%
Akpaka Housing estate	53	38	71.70%
American Quarters	52	40	76.92%
Total	280	212	75.71%

Author's Field Survey, 2024

Table 4.2: Distribution of questionnaire to the Management department

Name of housing estate	Number of questionnaire administered and retrieved
Onitsha GRA	1
Akpaka Housing estate	1
American Quarters	1
Total	3

Author's Field Survey, 2024

280 questionnaire were distributed, 175 in Onitsha GRA, 53 in Akpaka Housing Estate and 52 in American Quarters respectively. 212 out of the 280 questionnaire was retrieved

representing 75.71% response rate as shown in Table 4.1, which of course, represent a significant proportion of the total questionnaire retrieved and which was deemed adequate for the study. This response rate was possible due to the fact that the questionnaire were distributed during weekends, when most of the respondents were usually at home. Also, Table 4.2 shows the retrieval rate of the questionnaire administered on the management of the three housing estates. The three questionnaires were retrieved showing 100% response rate.

4.2 Socio-economic Characteristics of the Residents in the Selected Private Residential Estates

Table 4.3 provides information on the socio-economic characteristics of the residents in the three selected private housing estates sampled in the study area. The variables examined include gender, age, marital status, academic status, employment sector, average monthly income, length of stay, household size and the type of rights that the respondents have on the property.

Table 4.3 Socio-economic characteristics of residents

Variables	Housing Estates			Total
	Onitsha GRA	Akpaka Housing Estate	American Quarters Estate	
Gender				
Male	89(66.4%)	27(71.1%)	25(62.5%)	141(66.5%)
Female	40(29.9%)	10(26.3%)	14(35%)	64(30.2%)
No response	5(3.7%)	1(2.6%)	1(2.5%)	7(3.3%)
Total	134(100%)	38(100%)	40(100%)	212(100%)
Age (Years)				
18-30	18(13.43%)	16(42.11%)	9(22.5%)	43(20.28%)
31-45	84(62.69%)	19(50%)	26(65%)	129(60.85%)
46-59	26(19.40%)	2(5.26%)	5(12.5%)	33(15.57%)
60 and above	3(2.24%)	0(0.0%)	0(0.0%)	3(1.41%)
No response	3(2.24%)	1(2.63%)	0(0.0%)	4(1.89%)
Total	134(100%)	38(100%)	40(100%)	212(100%)
Marital Status				
Single	15(11.19%)	8(21.05%)	5(12.5%)	28(13.21%)

Divorced	11(8.21%)	1(2.63%)	1(2.5%)	13(6.13%)
Married	104(77.61%)	29(76.32%)	33(82.5%)	166(78.30%)
Widowed	1(0.75%)	0(0.0%)	0(0.0%)	1(0.47%)
No response	3(2.24%)	0(0.0%)	1(2.5%)	4(1.89%)
Total	134(100%)	38(100%)	40(100%)	212(100%)
Academic status				
HND	17(12.69%)	4(10.53%)	3(7.5%)	24(11.32%)
B.Sc.	58(43.28%)	24(63.16%)	15(37.5%)	97(45.75%)
M.Sc./MBA	45(33.58%)	9(23.68%)	18(45%)	72(33.97%)
PhD	14(10.45%)	1(2.63%)	4(10%)	19(8.96%)
Total	134(100%)	38(100%)	40(100%)	212(100%)
Employment Sector				
Private	64(47.76%)	29(76.32%)	27(67.5%)	120(56.60%)
Public	70(52.24%)	9(23.68%)	13(32.5%)	92(43.40%)
Total	134(100%)	38(100%)	40(100%)	212(100%)
Average Monthly income (₦NN)				
<50,000	5(3.73%)	0(0.0%)	0(0.0%)	5(2.36%)
51,000-100,000	13(9.70%)	9(23.68%)	0(0.0%)	22(10.38%)
101,000-150,000	54(40.30%)	18(47.37%)	17(42.5%)	89(41.98%)
151,000-200,000	33(24.63%)	10(26.32%)	13(32.5%)	56(26.42%)
200,000 &above	18(13.43%)	1(2.63%)	9(22.5%)	28(13.20%)
No response	11(8.21%)	0(0.0%)	1(2.5%)	12(5.66%)
Total	134(100%)	38(100%)	40(100%)	212(100%)
Length of stay of respondents				
Less than 1 year	20(14.93%)	14(36.84%)	12(30.0%)	46(21.70%)
1-3 years	94(70.14%)	19(50.0%)	28(70.0%)	141(66.50%)
4-5 years	20(14.93%)	5(13.16%)	0(0.0%)	25(11.80%)
Total	134(100%)	38(100%)	40(100%)	212(100%)
Household Size				
1	6(4.48%)	8(21.05%)	1(2.5%)	15(7.08%)
2	8(5.97%)	7(18.42%)	1(2.5%)	16(7.55%)
3	59(44.03%)	13(34.21%)	23(57.5%)	95(44.80%)
4	43(32.09%)	6(15.79%)	8(20.0%)	57(26.89%)
>4	18(13.43%)	4(10.53%)	7(17.5%)	29(13.68%)
Total	134(100%)	38(100%)	40(100%)	212(100%)
Type of right				
Sublet	4(2.99%)	0(0.0%)	1(2.5%)	5(2.36%)
Tenancy	130(97.01%)	38(100%)	39(97.5%)	207(97.64%)
Total	134(100%)	38(100%)	40(100%)	212(100%)

Author's Field Survey, 2024

Beginning from gender, Table 4.3 depicts the distribution of gender of respondents across the three housing estates surveyed. It can be deduced that more males reside in these housing

estates than their female counterparts. 66.4% males were found in Onitsha GRA and 29.9% females, 71.1% males also in Akpaka Housing estate and 26.3% females, while 62.5% males were seen in American Quarters estate and 35% females. However, 3.3% of the respondents did not indicate their gender across the housing estates. The reason for this outcome could ascribe to the fact that men are the head of the household, and in most cases too, the bread winner of the family and are expected to make housing decisions.

Also, the age distribution of respondents across the three housing estates is revealed. It can be seen that the respondents between the age brackets of 31-45 are prevalent across the three estates with Onitsha GRA having 62.9%, Akpaka 50% and American Quarters with 65%. This is a clear indication of the middle-age class of Nigeria's population distribution. Apart from this, Onitsha GRA seems to have more respondents within 46-59 and 60 years and above age groups respectively while the other two estates had low respondents in these categories. Four persons constituting 1.89% of the total respondents in both Onitsha GRA and Akpaka housing estate did not reveal their age. However, younger people between the ages of 18-30 years also are found to be residing in these three housing estates as seen in Onitsha GRA with 13.43%, Akpaka housing estate 42.11% and American Quarters with 20.28% respectively. This result suggests that all age groups are adequately represented in the three housing estates and the implication is that each age group's view about housing adequacy and satisfaction would vary and thus enhance a more robust analysis.

The marital status of the respondents across the three housing estates is reported in Table 4.3. It is evidenced that most of the respondents in the housing estates are married, few (13.21%) are still unmarried, and there are greater number of divorced respondents in Onitsha GRA estate than the other estates. Also from the table, a single respondent was found to be

widowed in Onitsha GRA, while four respondents were found not to respond to their marital status in both Onitsha GRA and American Quarters respectively. Table 4.3 also examined the academic qualifications of the occupants of the selected housing estates used for the study. It can be deduced that majority of the respondents has had one form of higher formal education or the other, with those in the B.Sc. and M.Sc./MBA category having larger percentages across the housing estates. The implication of the above findings on education attainments of the respondents is that all the respondents have a minimum of an HND degree can therefore adequately respond to the questionnaires given to them to answer, thereby enhancing data reliability.

Having examined the educational status of the respondents in the table; the employment sectors of these respondents were also examined. Because of the nature of the study area, two major sectors were broadly examined for the study which are public and the private sector. Government agencies/departments and business owners belonging to the private sector are the major employers of labour in the study area. Those who however fall in the category of business owners amongst the respondents have been categorized to operate in private sector for ease of analysis. From the table, 52.24% of the respondents in Onitsha GRA work in the public sector, while 47.76% works with the private sector, either owning their own businesses or works in a private organization. Also, 76.32% of the respondents in Akpaka estate work with private sector, while 23.68% works in the public sector respectively. In American Quarters estate, 67.5% of the respondents work in the private sector and 32.5% in the public sector. The above finding suggests that the respondents are fully employed and have a means of livelihood.

Table 4.3 also reveals the average monthly income of the respondents in the three housing estates. 2.36% of the respondents disclosed that they earn less than fifty thousand naira (N50,000) and they are found in Onitsha GRA alone. 10.38% of the respondents falls between (N51,000-100,000) average monthly income. The people in this category could be rightly categorized to be in the middle low-income group, 41.98% fall in the Medium High-Income group of (N101,000-150,000), 26.42% of the respondents fall in the category of (N151,000-200,000) while (13.20%) falls in the category of 200,000 and above. Twelve of the respondents representing 5.66% did not disclose their monthly income. The result simply suggests that all income groups are somewhat represented in the housing estates surveyed for this study although the proportion of their representation varies across the estates. It can then be deduced that a large number of the respondents in the three housing estates have an average monthly income of well above a hundred thousand as represented by the figure 89(41.98%).

Table 4.3 also examines how long the respondents have resided in the housing estates. The reason for this information is to know whether the respondents truly are informed about their respective housing estates. Also, the information on the length of stay of respondents is necessary in examining their perception on housing adequacy and satisfaction. From the table, 14.93% of the respondents in Onitsha GRA, 36.84% in Akpaka Estate and 30.0% in American Quarters had been living in the estate for less than 1year, 70.14% in Onitsha GRA, 50.0% in Akpaka estate and 70.0% in American Quarters estate had been living in the estate for between 1year-3years while 14.93% in Onitsha GRA and 13.16% in Akpaka estate had been living in the estate for between 4-5years respectively. The above information implies

that a good percentage of the respondents had lived in the estates for a reasonable period and therefore can provide dependable information of their perception on the housing estates.

Table 4.3 also examines the household size of the respondents across the three housing estates. The household size represents the number of persons living together or resides in each housing units surveyed. The head of the family which in most cases is the man is referred to as the household head. And sometimes in the absence of the man, the woman assumes this role of household head. From the table, it can be deduced that a good proportion of the respondents' household size falls in the category of 3 persons with Onitsha GRA having 44.03%; Akpaka estate 34.21% while American Quarters has 57.5%. This could be as a result of the growing middle-class families in most Nigerian cities.

Finally, the result from Table 4.3 also reveals that majority of the respondents across the three housing estates own a tenancy right which is terminable at some future date. Although, those few respondents (2.36%) who indicated transfer ownership might probably be living in the estates on the bill of the original renters, and hence influence their choices of indicating transfer ownership. But other respondents across the board are simply renters in the estate with 97.01% in Onitsha GRA, 100% in Akpaka estate and 97.5% in American Quarters. This portends that the estates were built for letting purposes.

4.3. Relationship between selected users' socio-economic characteristics and their level of satisfaction with housing attributes and management in Onitsha North

The users' socio-economic characteristics and their level of satisfaction with housing attributes and management in Onitsha North were examined in order to determine whether or not there are relationships between them. The relationships were investigated using Pearson Product Moment Correlation coefficient. The result is presented in Table 4.4

Table 4.4: Pearson product moment correlations of users' socio-economic characteristics and their level of satisfaction with housing attributes and management in Onitsha North

	A	B	C	D	E	F	G	H	I	J
A	1									
B	-.195**	1								
C	-.052	.347**	1							
D	-.070	.360**	.264**	1						
E	.032	.176*	.261**	.482**	1					
F	-.042	.190**	.110	.254**	.153*	1				
G	.052	.044	.051	.075	.094	.489**	1			
H	.144*	-.024	.025	.253**	.180**	.448**	.467**	1		
I	.053	.215**	.045	.175*	.125	.652**	.362**	.400**	1	
J	.062	.172*	.122	.204**	.111	.562**	.460**	.492**	.401**	1

N = 212

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Author's Field Survey, 2016

A- Sex

B- Age

C- Marital Status

D- Educational Attainment

E- Average Monthly Income

F- Bathroom/Toilets facilities in your house

G- Suitability of where you live to your natural way of life

H- Quality of water treatment in the housing estate

I- Types of Building materials used in your house

J- Type of house you live in

Findings revealed that high and middle up positive correlations existed between users' socio-economic characteristics and their level of satisfaction with housing attributes and management in Onitsha North private housing estates. Users' satisfaction with bathroom/toilet facilities in the house had positive correlation with age ($r= 0.190$, $p<0.01$), educational attainment ($r=0.254$, $p<0.01$) and average monthly income ($r=0.153$, $p<0.05$). This implies that the higher the age, educational attainment and income, the higher the level of satisfaction

with bathroom/toilets facilities in the house. In a similar vein, satisfaction with quality of water treatment in the housing estate had positive correlation with sex ($r=0.144$, $p<0.05$), educational attainment ($r=0.253$, $p<0.01$) and average monthly income ($r=0.180$, $p<0.01$). In the case of users' satisfaction with types of building materials used in the house, age and educational attainment had positive correlation at 0.01 and 0.05 levels. Thus, users may be satisfied with types of building materials used in the house depending on age and educational attainment. Satisfaction with type of house users live in had positive relationship with age ($r=0.172$, $p<0.05$) and educational attainment ($r=0.204$, $p<0.01$) that is, age and educational attainment has influence on users' satisfaction with private housing estates in the study area. Arising from the result of the analysis, there is significant association between socio-economic characteristics, particularly sex, age, educational attainment and average monthly income and level of satisfaction with housing attributes and management of the users studied.

4.4 Housing attributes of the selected private residential estates

This objective examined housing attributes of the selected housing estates used for this study in terms of their adequacy as rated or perceived by the respondents. Presented in Tables 4.5, 4.6, 4.7 and 4.8 are adequacy of housing attributes of Onitsha GRA estate, Akpaka Housing estate, American Quarters estate and the overall adequacy for the study area respectively. The indices in adequacy of housing attributes as shown in those tables were used to classify the attributes into two. The first were the attributes with positive deviations about the mean index of the estates, while the second were those with negative deviations. Positive deviations indicated that adequacy of housing attributes was higher, as perceived by the users. Negative deviations, on the other hand, showed that adequacy of housing attributes was lower.

Table 4.5: Adequacy of Housing Attributes of Onitsha GRA

Housing Attributes	VI (1)	I (2)	F (3)	A (4)	VA (5)	SWV	RAI	Mean Deviation	RANK
Number of bedrooms	2	10	72	260	190	534	3.99	0.26	1 st
Residence type	2	8	108	208	200	526	3.93	0.20	2 nd
Potable water supply in your house	2	6	111	212	195	526	3.93	0.20	2 nd
Wall Finishes	2	18	87	220	195	522	3.90	0.17	4 th
Burglary Proof on Windows	0	18	102	212	190	522	3.90	0.17	4 th
Presence of Nets on Windows and Openings	2	4	117	236	160	519	3.87	0.14	6 th
Sizes of bedrooms	3	8	102	252	150	515	3.84	0.11	7 th
Size of cooking and storage spaces	2	32	63	228	190	515	3.84	0.11	7 th
Protection against dampness in your house	0	14	132	192	175	513	3.83	0.10	9 th
Window Types	1	28	78	240	165	512	3.82	0.09	10 th
Ceiling Materials	6	12	90	224	180	512	3.82	0.09	10 th
Protection against insects and dangerous animals	4	12	102	224	170	512	3.82	0.09	10 th
Sizes of Living & Dining Spaces in your house	0	16	117	248	125	506	3.78	0.05	13 th
Floor Finish	4	14	96	248	145	507	3.78	0.05	13 th
Electricity supply in your house	2	20	105	220	160	507	3.78	0.05	13 th
Perimeter Fencing of the unit	2	18	123	192	170	505	3.77	0.04	16 th
Natural lighting in bedrooms	5	10	96	268	125	504	3.76	0.03	17 th
Natural lighting in Living/ Dining rooms	4	14	102	252	130	502	3.75	0.02	18 th
NEGATIVE DEVIATIONS									
Roofing Sheets	2	10	153	192	140	497	3.71	-0.02	19 th
Walling Materials	2	26	111	220	135	494	3.69	-0.04	20 th
Door Types	0	28	99	268	100	495	3.69	-0.04	20 th
Security measures in your house	3	24	117	196	155	495	3.69	-0.04	20 th
Circulation of fresh air in Living/dining rooms	2	40	75	264	105	486	3.63	-0.10	23 rd
Protection against noise pollution	0	22	147	208	110	487	3.63	-0.10	23 rd
Level of privacy in your house	2	6	177	204	95	484	3.61	-0.12	25 th
Cost of Housing	0	34	135	188	125	482	3.60	-0.13	26 th
Circulation of fresh air in bed rooms	6	30	129	180	125	470	3.51	-0.22	27 th
Level of thermal comfort in your apartment	5	32	141	164	125	467	3.49	-0.24	28 th
Fire safety measures in your house	2	48	111	216	85	462	3.45	-0.28	29 th

Natural lighting in Kitchen	13	16	183	156	65	433	3.23	-0.50	30 th
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Author's Field Survey, 2024. **Key:** VI (Very Inadequate), I(Inadequate), F(Fair), A(Adequate), VA (Very Adequate)

Table 4.5 reveals the adequacy of housing attributes of Onitsha GRA alone. Findings established that number of bedrooms, residence type, and potable water supply were the three housing attributes with higher adequacy. The indices for these attributes were 3.99, 3.93 and 3.93 each in that order. Other attributes with positive deviation about the mean included wall finishes, burglary proof on windows, presence of nets on windows and openings, size of bedrooms, size of cooking and storage spaces, protection against dampness and window types. Their respective RAI were 3.90 each, 3.87, 3.84 each, 3.83 and 3.82. It was also observed that attributes such as natural lighting in kitchen (3.23), fire safety measures (3.45), and level of thermal comfort in apartments (3.49) were the three least in terms of adequacy in Onitsha GRA. Other attributes in this category of negative deviation were roofing sheets, walling materials, door types, security measures and circulation of fresh air in living/dining rooms with indices of 3.71, 3.69 each and 3.63. The reason for this finding is that users rated them as inadequate. The inference that could be drawn from these attributes with the least RAI were that they relate more with the design of the building and they must be looked into by developers in their subsequent schemes.

Table 4.6 Adequacy of Housing Attributes of Akpaka Housing Estate

Housing Attributes	VI (1)	I (2)	F (3)	A (4)	VA (5)	SWV	RAI	Mean Deviation	RANK
Door Types	3	14	27	56	25	125	3.29	0.29	1 st
Window Types	3	16	24	56	25	124	3.26	0.26	2 nd
Burglary Proof on Windows	4	10	30	60	20	124	3.26	0.26	2 nd
Potable water supply in your house	1	18	39	40	25	123	3.24	0.24	4 th
Cost of Housing	4	8	42	48	20	122	3.21	0.21	5 th

Roofing Sheets	3	14	36	44	25	122	3.21	0.21	5 th
Protection against insects and dangerous animals	1	18	36	56	10	121	3.18	0.18	7 th
Walling Materials	1	18	39	52	10	120	3.16	0.16	8 th
Protection against dampness in your house	4	10	45	44	15	118	3.11	0.11	9 th
Electricity supply in your house	1	24	27	56	10	118	3.11	0.11	9 th
Wall Finishes	5	14	27	56	15	117	3.08	0.08	11 th
Residence type	6	6	42	52	10	116	3.05	0.05	12 th
Ceiling Materials	4	14	36	52	10	116	3.05	0.05	12 th
Perimeter Fencing of the unit	2	22	36	36	20	116	3.05	0.05	12 th
Number of bed rooms	6	10	36	48	15	115	3.03	0.03	15 th
Presence of Nets on Windows and Openings	4	16	36	44	15	115	3.03	0.03	15 th
NEGATIVE DEVIATION									
Floor Finish	6	10	39	48	10	113	2.97	-0.03	17 th
Protection against noise pollution	2	18	51	32	10	113	2.97	-0.03	17 th
Level of privacy in your house	5	6	60	32	10	113	2.97	-0.03	17 th
Sizes of Living & Dining Spaces in your house	5	14	39	44	10	112	2.95	-0.05	20 th
Sizes of bedrooms	4	22	24	52	10	112	2.95	-0.05	20 th
Circulation of fresh air in bedrooms	2	20	48	36	5	111	2.92	-0.08	22 nd
Circulation of fresh air in Living/dining rooms	5	18	36	36	15	110	2.89	-0.11	23 rd
Natural lighting in bedrooms	7	24	9	52	15	107	2.82	-0.18	24 th
Size of cooking and storage spaces	7	20	21	48	10	106	2.79	-0.21	25 th
Security measures in your house	6	18	39	28	15	106	2.79	-0.21	25 th
Natural lighting in Kitchen	9	14	33	40	5	101	2.66	-0.34	27 th
Fire safety measures in your house	5	30	24	32	10	101	2.66	-0.34	27 th
Natural lighting in Living/ Dining rooms	9	18	21	44	10	102	2.64	-0.36	29 th
Level of thermal comfort in your apartment	7	12	54	24	5	102	2.64	-0.36	29 th

Author's Field Survey, 2024. **Key:** VI (Very Inadequate), I (Inadequate), F (Fair), A (Adequate), VA (Very Adequate)

Findings presented in Table 4.6 above reveals the adequacy of housing attributes in Akpaka Housing Estate alone. Door type with RAI of 3.29 was ranked highest. Window types and burglary proof on windows shared the same index (3.26). While potable water supply had an index of 3.24, cost of housing and roofing sheets had 3.21 each. Attributes such as protection against insects and dangerous animals, walling materials, protection against dampness, electricity supply, wall finishes, residence type, ceiling materials, among others, also had positive mean deviations. Also, looking at the table again, the findings suggest that attributes from floor finish to level of thermal comfort were rated inadequate simply because they had a negative deviation from the mean. This means that occupant of the housing estate rated those attributes inadequate. Conversely, level of thermal comfort with an index of 2.64 was ranked least in Akpaka Housing Estate. With RAI of 2.97 each, 2.95 each, 2.92, 2.89 and 2.82, floor finishes, protection against noise pollution, level of privacy, sizes of living and dining spaces, sizes of bedrooms, circulation of fresh air in bedrooms, circulation of fresh air in living/dining rooms and natural lighting in bedrooms were perceived as inadequate. These inadequacies are more of design issues, and must be put into consideration in subsequent housing designs.

Table 4.7: Adequacy of Housing Attributes of American Quarters Estate

Housing Attributes	VI (1)	I (2)	F (3)	A (4)	VA (5)	SWV	RAI	Mean Deviation	RANK
Potable water supply in your house	1	2	48	48	50	149	3.73	0.53	1 st
Door Types	2	6	24	76	40	148	3.70	0.50	2 nd
Burglary Proof on Windows	1	10	24	68	45	148	3.70	0.50	2 nd
Presence of Nets on Windows and Openings	4	2	33	60	45	144	3.60	0.40	4 th
Residence type	1	10	45	32	55	143	3.58	0.38	5 th
Number of bedrooms	1	10	33	68	30	142	3.55	0.35	6 th
Floor Finish	1	12	36	48	45	142	3.55	0.35	6 th
Walling Materials	3	8	21	84	25	141	3.53	0.33	8 th

Ceiling Materials	3	10	18	80	30	141	3.53	0.33	8 th
Wall Finishes	1	14	24	76	25	140	3.50	0.30	10 th
Electricity supply in your house	2	6	30	92	10	140	3.50	0.30	10 th
Sizes of bedrooms	4	6	33	56	40	139	3.48	0.28	12 th
Window Types	4	6	36	68	20	134	3.35	0.15	13 th
Security measures in your house	3	10	33	68	20	134	3.35	0.15	13 th
Roofing Sheets	2	12	30	84	5	133	3.33	0.13	15 th
Size of cooking and storage spaces	2	10	45	64	10	131	3.28	0.08	16 th
Sizes of Living & Dining Spaces in your house	2	18	30	60	20	130	3.25	0.05	17 th
Protection against dampness in your house	2	12	45	60	10	129	3.23	0.03	18 th
NEGATIVE DEVIATION									
Protection against insects and dangerous animals	5	10	30	72	10	127	3.18	-0.02	19 th
Level of privacy in your house	1	14	63	28	20	126	3.15	-0.05	20 th
Natural lighting in bedrooms	1	24	42	28	30	125	3.13	-0.07	21 st
Circulation of fresh air in Living/dining rooms	4	16	33	52	20	125	3.13	-0.07	21 st
Level of thermal comfort in your apartment	4	10	48	48	15	125	3.13	-0.07	21 st
Circulation of fresh air in bedrooms	2	22	30	60	10	124	3.10	-0.10	24 th
Protection against noise pollution	3	14	39	68	0	124	3.10	-0.10	24 th
Natural lighting in Living/ Dining rooms	1	24	36	52	10	123	3.08	-0.12	26 th
Natural lighting in Kitchen	3	18	51	28	20	120	3.00	-0.20	27 th
Cost of Housing	1	20	63	28	5	117	2.93	-0.27	28 th
Perimeter Fencing of the unit	3	26	39	32	15	115	2.88	-0.32	29 th
Fire safety measures in your house	5	38	12	44	5	104	2.60	-0.60	30 th

Author's Field Survey, 2024 **Key: VI** (Very Inadequate), **I**(Inadequate), **F**(Fair), **A**(Adequate), **VA** (Very Adequate)

Table 4.7 presents the adequacy of housing attributes in American Quarters estate. Findings revealed that potable water supply, door types and burglary proof on windows with RAI of 3.73 and 3.70 each were the three most adequate housing attributes in the estate. Housing

attributes, among others, such as presence of nets on windows and openings (3.60), residence type (3.58), number of bedrooms (3.55), floor finish (3.55), walling materials (3.53), ceiling materials (3.53), wall finishes (3.50), electricity supply (3.50), size of bedrooms (3.48), window types (3.35) were also ranked satisfactory. However, fire safety measure was ranked least (2.60) in the estate. Similarly, attributes like protection against insects and dangerous animals, Level of privacy, level of thermal comfort and circulation of fresh air in bedrooms were also perceived to be inadequate. Their respective RAI were 3.18, 3.15, 3.13 and 3.10. The implication of the above inadequacies were borne out of the fact that housing designers and planners simply do not take some of these housing attributes as essential and therefore do not take cognizance of them while planning the housing space. These areas however should be looked into in order to have a more rounded housing unit that will give the end-users all the necessary satisfactions that they can get while occupying these houses.

Table 4.8: Comparative Analysis of Adequacy of Housing Attributes of the Selected Private Estates in Onitsha North

Housing Attributes	VI (1)	I (2)	F (3)	A (4)	VA (5)	SWV	RAI	Mean Deviation	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
Protection against dampness in your house	6	36	222	296	200	760	3.58	0.06	13 th

Protection against insects and dangerous animals	10	40	168	352	190	760	3.58	0.06	13 th
Walling Materials	6	52	171	356	170	755	3.56	0.04	15 th
Roofing Sheets	7	36	219	320	170	752	3.55	0.03	16 th
Size of cooking and storage spaces	11	62	132	336	210	751	3.54	0.02	17 th
Sizes of Living & Dining Spaces in your house	7	48	186	352	155	748	3.53	0.01	18 th
Natural lighting in Living/ Dining rooms	14	56	159	348	150	747	3.52	0.00	19 th
NEGATIVE DEVIATIONS									
Natural lighting in bedrooms	13	58	147	348	170	736	3.47	-0.05	20 th
Perimeter Fencing of the unit	7	66	198	260	205	736	3.47	-0.05	20 th
Security measures in your house	12	52	189	292	190	735	3.47	-0.05	20 th
Protection against noise pollution	5	54	237	308	120	724	3.42	-0.10	23 rd
Level of privacy in your house	8	26	300	264	125	723	3.41	-0.11	24 th
Cost of Housing	5	62	240	264	150	721	3.40	-0.12	25 th
Circulation of fresh air in Living/dining rooms	11	74	144	352	140	721	3.40	-0.12	25 th
Circulation of fresh air in bedrooms	10	72	207	276	140	705	3.33	-0.19	27 th
Level of thermal comfort in your apartment	16	54	243	236	145	694	3.27	-0.25	28 th
Fire safety measures in your house	12	116	147	292	100	667	3.15	-0.37	29 th
Natural lighting in Kitchen	25	48	267	224	90	654	3.08	-0.44	30 th

Author's Field Survey, 2024. **VI** (Very Inadequate), **I** (Inadequate), **F** (Fair), **A** (Adequate), **VA** (Very Adequate)

From the summary presented in Table 4.8, the three most adequate housing attributes in private housing estates in the study area were: potable water supply, burglary proof on windows, and number of bedrooms. Their respective RAI were 3.76, 3.75, and 3.73. Ranking potable water supply as being the most adequate attribute may be attributed to the indispensability of water as an essential utility for human survival, which must be provided as a basic necessity of life for both plants and animals. Similar study done by ¹ on public housing

estate in Abeokuta reported a somewhat different finding as water supply ranked very inadequate, having one of the lowest mean satisfaction score. The reason for this difference in findings is why many people criticize public housing estates as being inadequate. More so, adequacy of burglary proof on window, and number of bedrooms suggest importance of security and accommodation of users' household members. On the other hand, the three least housing attributes in terms of adequacy were natural lighting in kitchen, fire safety measures and level of thermal comfort with RAI of 3.08, 3.15 and 3.27 respectively. Responsible for the inadequacy of these housing attributes may be due to the planning and designing stages which did not take the attributes into consideration. According to ² and ³, these attributes have been found to be important variables in neighbourhood development and to greatly influence users' satisfaction.

4.5 Management Strategies

An integral part of objective two of this study was set to examine the management strategies being adopted in managing these housing estates. Management strategies involve taking strategic decisions that would enhance effective management and maintenance of the housing estates and thereby protecting the investment for the investor's purpose. Table 4.9 is the result of the questionnaire administered on the manager about the management and maintenance operations of the housing estates wherein they manage. The three housing estates are being managed by the developer as preliminary investigations and the questionnaire being filled revealed, which is in-house.

Table 4.9 Management Strategies and Operations adopted in the housing estates

Onitsha GRA				Akpaka Estate			American Quarters		
Mgt. Strategy	In-house	Outsource	Hybrid	In-house	Outsource	Hybrid	In-house	Outsource	Hybrid
Routine inspections	√			√			√		
Structural repair	√				√			√	
Cleaning and maintenance of the housing estate environment		√			√			√	
Repairs of fixtures and fittings	√				√		√		
Electrical repairs	√				√		√		
Fixing of roads within the estate		√			√			√	
General security services		√			√			√	
Refuse collection/disposal		√			√			√	
Dispute resolution	√					√			√
Rent collection procedure	√			√			√		
Tenant selection procedure	√			√			√		
General facility Management	√			√			√		

Author's Field Survey, 2024

Table 4.9 above shows that a combination of both in-house and outsourcing is being adopted in the maintenance operations of the three housing estates as indicated by the respondents. It is recognized that many organizations operate hybrid structures where activities are partially

outsourced. For example, structure repairs is being done in-house in Onitsha GRA estate by their technical department, while in Akpaka and American Quarters, they are being outsourced respectively. Also, routine inspections are carried out in-house across the three housing estates. Moreover, the cleaning and maintenance of the housing estates environment are being outsourced to some external cleaning outfit. Also, the repairs of fixtures and fittings within the estate like the repairs of street lights and all other electrical repairs that has to do with the common areas within the estates is being done in-house in both Onitsha GRA and American Quarters estates respectively while they are being outsourced in Akpaka estate. All other activities like fixing of roads, general security services within the estate and refuse collection and disposal are being outsourced to external sources. Dispute resolution is being done in-house in Onitsha GRA through regular meetings with the tenants while a combination of in-house and outsourcing is being employed in Akpaka and American Quarters estate. Rent collection procedure, tenant selection procedure and general facility management of the housing estates are being executed by the in-house management departments of the developers. The reason for this finding could be as a result of the income generating nature of the investment.

4.6 Users' Level of Satisfaction with Housing Attributes and Management of the selected private housing estates in Onitsha North

This section addresses objective three of the study. The objective was to examine the level of users' satisfaction with the housing attributes and management of the selected estates in Onitsha North. In addressing the objective, the study examined users' level of satisfaction with housing attributes and management using forty-seven (48) variables. These variables, among others, included type of house, rules and regulations regarding residency in the housing estate, bathroom/toilets facilities, external appearance of the house, door condition,

number of bedrooms, and response to maintenance request, level of privacy and general level of satisfaction with life in the estate. The average RSI for each of the three housing estates are 3.52, 2.83 and 3.38 respectively upon which the deviation was gotten for the three housing estates.

Table 4.10 Users' Level of Satisfaction with Housing Attributes and Management in Onitsha GRA

Variables	VD (1)	D (2)	F (3)	S (4)	VS (5)	SWV	RSI	Mean Deviation	RANK
<u>Building Features & fittings</u>									
Type of house	0	0	105	272	155	532	3.97	0.45	1 st
Bathroom/Toilets facilities	2	8	123	164	230	527	3.93	0.41	4 th
Types of building materials used	0	12	96	248	170	526	3.93	0.41	4 th
Quality of water treatment	3	16	105	216	170	510	3.81	0.29	7 th
External appearance of the house	0	20	117	212	160	509	3.80	0.28	8 th
Door condition	4	8	114	252	125	503	3.75	0.23	9 th
Number of bedrooms	6	4	123	224	145	502	3.75	0.23	9 th
Natural lighting and circulation of fresh air in your living and bed rooms	5	14	111	228	140	498	3.72	0.20	13 th
Sizes of bedrooms	2	12	129	240	115	498	3.72	0.20	13 th
Window condition	4	18	111	224	140	497	3.71	0.19	15 th
Location of your apartment	7	16	120	184	168	495	3.69	0.17	19 th
Sizes of cooking and storage spaces	7	8	135	192	150	492	3.67	0.15	20 th
Sizes of Living & Dining spaces	5	8	153	192	130	488	3.64	0.12	25 th
Electrical services in your house	4	22	156	156	140	478	3.57	0.05	29 th
Water supply and sanitary services in your house	4	26	132	204	110	476	3.55	0.03	34 th
<u>Neighbourhood Features</u>									
Suitability of where you live to your natural way of life	2	16	111	140	260	529	3.95	0.43	2 nd
Nearness of your house to your children's school	4	16	99	188	210	517	3.86	0.34	6 th
Nearness of your house to health care facilities	2	22	102	240	135	501	3.74	0.22	11 th
Level of privacy	4	12	147	152	185	500	3.73	0.21	12 th
Nearness of your house to the nearest market	2	22	117	216	140	497	3.71	0.19	15 th
Proximity to religious centers	0	16	147	184	150	497	3.71	0.19	15 th
Playground for Children	0	34	138	164	150	486	3.63	0.11	26 th

Perimeter fencing of the estate	4	30	123	192	130	479	3.57	0.05	29 th
Open space and green areas	2	44	120	156	155	477	3.56	0.04	33 rd
General cleanliness of the housing estate	4	24	138	204	105	475	3.54	0.02	35 th
Nearness of your house to recreational/sport facilities	3	44	111	180	135	473	3.53	0.01	36 th
Communal activities in your estate	6	18	105	308	35	472	3.52	0.00	37 th
General security of life and property in the estate	2	36	141	168	125	472	3.52	0.00	37 th
Nearness of the housing estate to public infrastructure and urban services	2	34	165	140	125	466	3.48	-0.04	40 th
Noise level in your house and the housing estate	1	36	174	124	130	465	3.47	-0.05	41 st
Nearness of your house to place of work	0	26	228	140	50	444	3.31	-0.21	42 nd
Level of crime and anti- social activities in the housing estate where you live	6	40	264	72	10	392	2.93	-0.59	43 rd
Prices of goods and services in the housing estate	4	164	66	56	60	350	2.61	-0.91	44 th
Nearness to shopping facilities within the estate	35	74	108	80	30	327	2.44	-1.08	45 th
Parking space within the estate	15	38	123	37	110	323	2.41	-1.11	46 th
Job/ business opportunities within and around the housing estate	24	158	63	24	20	289	2.16	-1.36	48 th
Management Features									
Rules and regulations regarding residency in the housing estate	2	20	84	192	230	528	3.94	0.42	3 rd
Response to maintenance request	0	24	141	172	160	497	3.71	0.19	15 th
Location of estate office	2	14	180	108	190	494	3.67	0.15	20 th
The quality of managerial display	5	20	135	152	180	492	3.67	0.15	20 th
General facility management, etc.	0	18	165	172	135	490	3.66	0.14	23 rd
Management and Maintenance of facilities in the housing estate	4	14	135	216	120	489	3.65	0.13	24 th
The courtesy of the management staff	4	20	135	188	140	487	3.63	0.11	26 th
Rent collection procedure	3	20	159	160	140	482	3.60	0.08	28 th
Tenant selection procedure	1	32	150	156	140	479	3.57	0.05	29 th
Level of mess and nuisance caused by the management staff	6	18	165	148	130	467	3.49	-0.03	39 th
Cost of acquiring/Rentage	0	32	132	152	5	321	2.40	-1.12	47 th

Author's Field Survey, 2024. **Key:** **VD** (Very Dissatisfied), **D** (Dissatisfied), **F** (Fair), **S**(satisfied), **VS** (Very Satisfied)

As presented in Table 4.10 above, findings revealed that type of house users lived in, rules and regulations regarding residency in the housing estate, bathroom/toilet facilities, type of

materials used and quality of water treatment were the five most satisfactory attributes in Onitsha GRA. Their respective relative satisfaction indices were 3.97, 3.94, 3.93, 3.93 and 3.81. On the other hand, Job/business opportunities within and around the housing estate, parking space within the estate and nearness to shopping facilities were ranked by the respondents as the three least satisfactory indicators with indices of 2.16, 2.41 and 2.44 respectively. The reason for this could simply be due to the fact that there are no job/business opportunities within the estate, parking spaces were small and residents probably drive some few kilometres before they could locate the nearest shopping facilities. In the areas of general security of life and property within the estate and communal activities, respondents expressed they were neither satisfied nor dissatisfied with these two variables having 3.52 RSI respectively. Managerial activities in Onitsha GRA estate were rated very satisfactory with all the RSI(s) exceeding the average RSI of 3.52 except for level of mess and nuisance caused by management staff and cost of rentage as it recorded 3.49 and 2.40 respectively. For respondents to rate cost of renting as not satisfactory could be for the fact that the amount of satisfaction getting from the housing estate is not commensurate with the amount of rent being paid.

Table 4.11 Users' Level of Satisfaction with Housing Attributes and Management in Akpaka Housing Estate

Variables	VD (1)	D (2)	JS (3)	F (4)	VS (5)	SWV	RSI	Mean Deviation	RANK
<u>Building Features & fittings</u>									
Quality of water treatment	3	12	51	12	45	123	3.24	0.41	2 nd
Bathroom/Toilets facilities	1	16	51	36	15	119	3.13	0.3	6 th
Types of building materials used	2	14	45	48	10	119	3.13	0.3	6 th
Type of house	3	16	33	56	10	118	3.11	0.28	8 th
Window condition	3	14	45	40	15	117	3.08	0.25	11 th
Door condition	5	16	36	20	40	117	3.08	0.25	11 th
Number of bed rooms	2	24	33	28	30	117	3.08	0.25	11 th
Electrical services in your house	3	14	48	36	15	116	3.05	0.22	14 th

Water supply and sanitary services	3	16	51	32	10	112	2.95	0.12	22 nd
Sizes of bedrooms	4	12	48	48	0	112	2.95	0.12	22 nd
Sizes of cooking and storage spaces	5	16	27	64	0	112	2.95	0.12	22 nd
Location of your apartment	2	18	60	16	15	111	2.92	0.09	28 th
External appearance of the house	4	14	60	24	5	107	2.82	-0.01	34 th
Sizes of Living & Dining spaces	4	14	60	24	5	107	2.82	-0.01	34 th
Natural lighting and circulation of fresh air in your living and bed rooms	4	28	42	16	10	100	2.63	-0.19	41 st
<u>Neighbourhood Features</u>									
Suitability of where you live to your natural way of life	2	12	54	28	25	121	3.18	0.35	5 th
Level of privacy	3	10	57	36	10	116	3.05	0.22	14 th
General cleanliness of the housing estate	2	20	36	52	5	115	3.03	0.2	18 th
General security of life and property in the estate	4	12	45	48	5	114	3.00	0.17	21 st
Nearness of your house to recreational/sport facilities	2	22	39	44	5	112	2.95	0.12	22 nd
Nearness of your house to the nearest market	4	24	27	32	25	112	2.95	0.12	22 nd
Nearness of the housing estate to public infrastructure and urban services	2	22	51	16	20	111	2.92	0.09	28 th
Communal activities in your housing estate	5	14	39	48	5	111	2.92	0.09	28 th
Proximity to religious centers	4	22	33	32	20	111	2.92	0.09	28 th
Noise level in your house and the housing estate	6	8	63	24	5	106	2.79	-0.04	36 th
Parking space within the estate	3	28	33	36	5	105	2.76	-0.07	37 th
Nearness of your house to your children's school	4	28	30	28	15	105	2.76	-0.07	37 th
Playground for Children	3	34	30	16	20	103	2.71	-0.12	39 th
Nearness of your house to health care facilities	4	28	30	40	0	102	2.68	-0.15	40 th
Perimeter fencing of the estate	3	34	33	20	10	100	2.63	-0.2	41 st
Nearness of your house to place of work	2	28	60	8	0	98	2.58	-0.25	43 rd
Level of crime and anti- social activities in the housing estate where you live	3	30	51	8	5	97	2.55	-0.28	44 th
Open space and green areas	5	34	27	28	0	94	2.47	-0.36	45 th
Prices of goods and services in the	8	42	18	12	0	80	2.11	-0.72	46 th

housing estate									
Job/ business opportunities within and around the housing estate	9	38	21	12	0	80	2.11	-0.72	46 th
Nearness to shopping facilities within the estate	15	26	24	8	0	73	1.92	-0.91	48 th
Management Features									
The courtesy of the mgt. staff	3	8	42	56	15	124	3.26	0.43	1 st
Location of estate office	3	16	24	60	20	123	3.24	0.41	2 nd
Rent collection procedure	3	12	33	60	15	123	3.24	0.41	2 nd
Management and Maintenance of facilities in the housing estate	4	6	48	60	0	118	3.11	0.28	8 th
Rules and regulations regarding residency in the housing estate	4	14	33	52	15	118	3.11	0.28	8 th
Cost of acquiring/Rentage	3	8	63	32	10	116	3.05	0.22	14 th
General facility management, etc.	2	20	33	56	5	116	3.05	0.22	14 th
Response to maintenance request	5	14	36	40	20	115	3.03	0.2	18 th
Tenant selection procedure	2	22	33	48	10	115	3.03	0.2	18 th
The quality of managerial display	1	28	33	40	10	112	2.95	0.12	22 nd
Level of mess and nuisance caused by the management staff	3	22	36	40	10	111	2.92	0.09	28 th

Author's Field Survey, 2024 **Key: VD** (Very Dissatisfied), **D** (Dissatisfied), **F**(Fair), **S**(satisfied), **VS** (Very Satisfied)

Presented in Table 4.11 is users' level of satisfaction with housing attributes and management in Akpaka Housing estate. Findings established that quality of water treatment, bathroom/toilet facilities, type of building materials, type of house and rules and regulations as regarding residency in the estate were ranked as very satisfactory with indexes of 3.24, 3.13, 3.13, 3.11 and 3.11 respectively. Ranking second were quality of water treatment, location of estate office, and rent collection procedure. Management of the housing estate was ranked very satisfactory with all the RSI(s) exceeding the average RSI for the estate of 2.83. This implies that managerial activities in Akpaka Housing estate are satisfactory to the users of the housing estate. However, the neighbourhood features of Onitsha GRA appear to fall below Users' expectation. Parking space within the estate, playground for children, nearness of the estate to children's school, nearness of the estate to healthcare facilities, perimeter

fencing of the estate, open space and green areas, nearness of the estate to shopping facilities all have their RSI below the average RSI mean of 2.83. These neighbourhood features performed poorly and private housing operators should therefore look into these areas to avoid such setbacks in their subsequent schemes. Just as ⁴ said, examining neighbourhood features should be of utmost importance for policy makers who wish to improve on their housing products for residents.

Table 4.12 Users' Level of Satisfaction with Housing Attributes and Management in American Quarters Estate

Variables	VD (1)	D (2)	JS (3)	F (4)	VS (5)	SWV	RSI	Mean Deviation	RANK
<u>Building Features & fittings</u>									
Bathroom/Toilets facilities	1	10	9	76	60	156	3.90	0.52	1 st
Electrical services in your house	2	6	18	68	60	154	3.85	0.47	2 nd
Types of building materials used	3	2	21	72	55	153	3.83	0.45	3 rd
Sizes of bedrooms	0	12	24	52	65	153	3.83	0.45	3 rd
Door condition	2	6	24	60	60	152	3.80	0.42	5 th
Type of house	0	10	24	76	40	150	3.75	0.37	6 th
Quality of water treatment	2	6	27	60	55	150	3.75	0.37	6 th
Location of your apartment	2	6	24	72	45	149	3.73	0.35	8 th
Water supply and sanitary services	0	6	33	84	25	148	3.70	0.32	9 th
Window condition	1	16	24	48	55	144	3.60	0.22	13 th
Number of bedrooms	2	8	30	84	15	139	3.48	0.10	19 th
External appearance of the house	2	8	39	72	15	136	3.40	0.02	25 th
Natural lighting and circulation of fresh air in your living and bed rooms	0	16	42	56	20	134	3.35	-0.03	29 th
Sizes of cooking and storage spaces	1	12	42	64	15	134	3.35	-0.03	29 th
Sizes of Living & Dining spaces	4	8	33	76	10	131	3.28	-0.10	33 rd
<u>Neighbourhood Features</u>									
Level of privacy	1	6	30	76	35	148	3.70	0.32	9 th
Nearness of your house to your children's school	1	6	33	76	30	146	3.65	0.27	11 th
Nearness of your house to the nearest market	2	6	42	52	40	142	3.55	0.17	17 th
General cleanliness of the housing estate	1	16	27	60	35	139	3.48	0.10	19 th
Proximity to religious centers	0	12	39	72	15	138	3.45	0.07	23 rd
General level of satisfaction with life in the estate	2	6	42	72	15	137	3.43	0.05	24 th

Communal activities in your housing estate	1	8	63	40	20	132	3.30	-0.08	32 nd
Level of crime and anti-social activities in the housing estate where you live	2	12	42	60	15	131	3.28	-0.10	33 rd
Nearness of your house to health care facilities	3	16	30	60	20	129	3.23	-0.15	35 th
Noise level in your house and the housing estate	2	10	60	36	20	128	3.20	-0.18	36 th
Nearness of your house to recreational/sport facilities	2	20	30	56	20	128	3.20	-0.18	36 th
Suitability of where you live to your natural way of life	2	16	39	60	10	127	3.18	-0.20	39 th
Nearness of the housing estate to public infrastructure and urban services	5	12	39	40	30	126	3.15	-0.23	40 th
Playground for Children	4	16	36	48	20	124	3.10	-0.28	41 st
Perimeter fencing of the estate	6	10	51	36	15	118	2.95	-0.43	42 nd
Prices of goods and services in the housing estate	4	22	45	28	15	114	2.85	-0.53	43 rd
Parking space within the estate	5	30	18	44	15	112	2.80	-0.58	44 th
Open space and green areas	4	32	21	40	15	112	2.80	-0.58	44 th
Job/ business opportunities within and around the housing estate	7	30	18	32	20	107	2.68	-0.70	46 th
Nearness to shopping facilities within the estate	5	36	24	24	15	104	2.60	-0.78	47 th
Nearness of your house to place of work	1	8	24	56	15	104	2.60	-0.78	47 th
Management Features									
The quality of managerial display	0	12	30	68	35	145	3.63	0.25	12 th
Level of mess and nuisance caused by the management staff	0	8	39	72	25	144	3.60	0.22	13 th
Rent collection procedure	0	12	27	84	20	143	3.58	0.20	15 th
The courtesy of the management staff	1	8	36	68	30	143	3.58	0.20	15 th
General facility management, etc.	0	8	48	68	15	139	3.48	0.10	19 th
Tenant selection procedure	1	12	36	60	30	139	3.48	0.10	19 th
Response to maintenance request	2	14	33	52	35	136	3.40	0.02	25 th
Management and Maintenance of facilities in the housing estate	1	14	30	80	10	135	3.38	0.00	27 th
Location of estate office	2	10	39	64	20	135	3.38	0.00	27 th
Rules and regulations regarding residency in the housing estate	2	6	45	80	0	133	3.33	-0.05	31 st
Cost of acquiring/Rentage	0	16	60	32	20	128	3.20	-0.18	36 th

Author's Field Survey, 2024 **Key:** **VD** (Very Dissatisfied), **D**(Dissatisfied), **F**(Fair), **S**(satisfied), **VS** (Very Satisfied)

Findings on users' level of satisfaction with housing attributes and management in American Quarters estate, as presented in Table 4.12 revealed that with a relative satisfaction index of 3.90, bathroom/toilet facilities was ranked as the most satisfactory of all the indicators. Next to this were electrical services with an index of 3.85. More so, with a relative satisfaction index of 3.83 each, types of building materials used and sizes of bedrooms were ranked third in the estate. Door condition, type of house, quality of water treatment, location of users' apartment, water supply and sanitary services among others, also had positive deviation about the mean. A careful observation of the table reveals that indicators such as management and maintenance of facilities in the housing estate, and location of estate office had zero deviation about the mean. This suggests that users were neither satisfied nor dissatisfied with these management attributes. However, users expressed satisfaction with all other management features as indicated by their respective RSI as they were above average RSI mean. However, cost of renting reported something different as its RSI (3.20) was below the average RSI. What this means is that respondents rated as not satisfactory. Nearness of users' house to place of work, nearness to shopping facilities within the estate and Job/business opportunities within and around the housing estate were ranked as the three least satisfactory indicators. Their respective indices were 2.60 each and 2.68 in that order. Others include nearness of the estate to recreational facilities, open space and green areas, parking space within the estate, playground for children, nearness of the housing estate to urban infrastructure and urban facilities etc.

Table 4.13 Users' Level of Satisfaction with Housing Attributes and Management in Onitsha North

Variables	Onitsha GRA			Akpaka Housing Estate			American Quarters Estate		
	RSI	Mean Deviation	RANKING	RSI	Mean Deviation	RANKING	RSI	Mean Deviation	RANKING
<u>Building Features & fittings</u>									
Bathroom/Toilets facilities	3.93	0.41	4 th	3.13	0.3	6 th	3.90	0.52	1 st
Type of house	3.97	0.45	1 st	3.11	0.28	8 th	3.75	0.37	6 th
Types of building materials used	3.93	0.41	4 th	3.13	0.3	6 th	3.83	0.45	3 rd
Quality of water treatment	3.81	0.29	7 th	3.24	0.41	2 nd	3.75	0.37	6 th
Door condition	3.75	0.23	9 th	3.08	0.25	11 th	3.80	0.42	5 th
Sizes of bedrooms	3.72	0.20	13 th	2.95	0.12	22 nd	3.83	0.45	3 rd
Window condition	3.71	0.19	15 th	3.08	0.25	11 th	3.60	0.22	13 th
Number of bedrooms	3.75	0.23	9 th	3.08	0.25	11 th	3.48	0.10	19 th
Location of your apartment	3.69	0.17	19 th	2.92	0.09	28 th	3.73	0.35	8 th
External appearance of the house	3.80	0.28	8 th	2.82	-0.01	34 th	3.40	0.02	25 th
Electrical services in your house	3.57	0.05	29 th	3.05	0.22	14 th	3.40	0.02	25 th
Sizes of cooking and storage spaces	3.67	0.15	20 th	2.95	0.12	22 nd	3.35	-0.03	29 th
Water supply and sanitary services	3.55	0.03	34 th	2.95	0.12	22 nd	3.70	0.32	9 th
Natural lighting and circulation of fresh air in your living and bed rooms	3.72	0.20	13 th	2.63	-0.19	41 st	3.35	-0.03	29 th
Sizes of Living and Dining spaces	3.64	0.12	25 th	2.82	-0.01	34 th	3.28	-0.10	33 rd

Neighbourhood Features									
Suitability of where you live to your natural way of life	3.95	0.43	2 nd	3.18	0.35	5 th	3.18	-0.20	39 th
Nearness of your estate to your children's school	3.86	0.34	6 th	2.76	-0.07	37 th	3.65	0.27	11 th
Level of privacy	3.73	0.21	12 th	3.05	0.22	14 th	3.70	0.32	9 th
General security of life and property in the estate	3.52	0.00	37 th	3.00	0.17	21 st	3.50	0.12	18 th
Nearness of your estate to the nearest market	3.71	0.19	15 th	2.95	2.95	22 nd	3.55	0.17	17 th
Proximity to religious centers	3.71	0.19	15 th	2.92	0.09	28 th	3.45	0.07	23 rd
Nearness of your estate to health care facilities	3.74	0.22	11 th	2.68	-0.15	40 th	3.23	-0.15	35 th
General cleanliness of the housing estate	3.54	0.02	35 th	3.03	0.2	18 th	3.48	0.10	19 th
Communal activities in your housing estate	3.52	0.00	37 th	2.92	0.09	28 th	3.30	-0.08	32 nd
Playground for Children	3.63	0.11	26 th	2.71	-0.12	39 th	3.10	-0.28	41 st
Nearness of your estate to recreational/sport facilities	3.53	0.01	36 th	2.95	0.12	22 nd	3.20	-0.18	36 th
Nearness of the estate to public infrastructure	3.48	-0.04	40 th	2.92	0.09	28 th	3.15	-0.23	40 th
Noise level in the housing estate	3.47	-0.05	41 st	2.79	-0.04	36 th	3.20	-0.18	36 th
Perimeter fencing of the estate	3.57	0.05	29 th	2.63	-0.2	41 st	2.95	-0.43	42 nd
Open space and green areas	3.56	0.04	33 rd	2.47	-0.36	45 th	2.80	-0.58	44 th

Nearness of your estate to place of work	3.31	-0.21	42 nd	2.58	-0.25	43 rd	2.60	-0.78	47 th
Parking space within the estate	2.41	-1.11	46 th	2.76	-0.07	37 th	2.80	-0.58	44 th
Level of crime and anti-social activities in the housing estate	2.93	-0.59	43 rd	2.55	-0.28	44 th	3.28	-0.10	33 rd
Prices of goods and services in the housing estate	2.61	-0.91	44 th	2.11	-0.72	46 th	2.85	-0.53	43 rd
Nearness to shopping facilities	2.44	-1.08	45 th	1.92	-0.91	48 th	2.60	-0.78	47 th
Job/ business opportunities within and around the housing estate	2.16	-1.36	48 th	2.11	-0.72	46 th	2.68	-0.70	46 th
Management Features									
The courtesy of the management staff	3.63	0.11	26 th	3.26	0.43	1 st	3.58	0.20	15 th
Location of estate office	3.67	0.15	20 th	3.24	0.41	2 nd	3.38	0.00	27 th
Response to maintenance request	3.71	0.19	15 th	3.03	0.2	18 th	3.40	0.02	25 th
Rent collection procedure	3.60	0.08	28 th	3.24	0.41	2 nd	3.58	0.20	15 th
The quality of managerial display	3.67	0.15	20 th	2.95	0.12	22 nd	3.63	0.25	12 th
Rules and regulations regarding residency in the housing estate	3.94	0.42	3 rd	3.11	0.28	8 th	3.33	-0.05	31 st
General facility management	3.66	0.14	23 rd	3.05	0.22	14 th	3.48	0.10	19 th
Management and Maintenance of facilities	3.65	0.13	24 th	3.11	0.28	8 th	3.38	0.00	27 th

in the housing estate									
Cost of acquiring/Rentage	2.40	-1.12	47 th	3.05	0.22	14 th	3.20	-0.18	36 th
Tenant selection procedure	3.57	0.05	29 th	3.03	0.2	18 th	3.48	0.10	19 th
Level of mess and nuisance caused by the management staff	3.49	-0.03	39 th	2.92	0.09	28 th	3.60	0.22	13 th

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Summary of findings on users' level of satisfaction with housing attributes and management in the study area, as presented in Table 4.13 reveals that users are satisfied with their housing attributes in terms of the features and fittings. The finding appears to be in agreement with previous studies ^{5, 6}; and ⁷ indicating that residents in parts of Lagos, Abeokuta, and Ondo State Southwest Nigeria, respectively, were generally satisfied with their dwelling units and facilities. Also, this finding is in agreement with the work of ⁸ who found that residents of low-cost housing in Pulau Pinang and Kuala Terengganu were satisfied with the building features of the houses they were residing in. Although, respondents in Akpaka and American Quarters rated size of living and dining space, natural lighting and circulation of fresh air in living and bedrooms as unsatisfactory because they all had negative deviation from the mean. Also, size of cooking and storage space was rated unsatisfactory in American Quarters while external appearance of the house was rated unsatisfactory in Akpaka Estate. On the other hand, noise level in the estate, nearness of the estate to place of work, parking space within the estate, social activities, prices of goods in the estate and nearness to shopping facilities across the three housing estates surveyed were rated unsatisfactory as they all have negative deviation about from the mean. Open space and green areas, playground for children, nearness of the estate to healthcare facilities and perimeter fencing of the estate were rated unsatisfactory in both Akpaka and American Quarters respectively. Nearness of the estate to public infrastructure and urban services were also rated unsatisfactory in Onitsha GRA and American Quarters respectively. Nearness of the estate to recreational and sporting facilities and communal activities within the estate were rated unsatisfactory in American Quarters. Also, nearness of the estate to children's school and general security of life and property in Akpaka estate was rated unsatisfactory. Therefore, the estates can be considered as having performed poorly in these aspects. Managerial activities across the three

housing estates were generally satisfactory as can be seen from the table except for American Quarters where rules and regulations regarding residency in the housing estate and cost of renting was rated unsatisfactory. This could be as a result of tighter rules put in place by the management which at certain times or the other have been found not to be too friendly with the residents of the estate. Cost of renting was also rated unsatisfactory in Onitsha GRA as well.

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

In order to adequately analyse the fourth objective, the use of factor analysis was employed. Factor analysis is a statistical technique used to determine the number of underlying dimensions contained in a set of observed variables. The underlying dimensions are referred to as factors. These factors explain most of the variability among a large number of observed variables.

Table 4.14: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.906
Approx. Chi-Square	5937.134
Bartlett's Test of Sphericity Df	820
Sig.	.000

Author's Field Survey, 2024

As a general guide in interpreting factor analysis results, the suitability of data for factor analysis was first checked based on Kaiser–Meyer–Olkin (KMO) and Bartlett's test values. The data were acceptable for factor analysis only when KMO was greater than 0.5 and the significant level of Bartlett's test was less than 0.1. The second step was to validate the variables based on communality of variables. Small values indicate that variables do not fit well with the factor solution and should be dropped from the analysis. All 48 variables were input for processing. The fact that KMO is 0.906 and Bartlett's test significant level is 0.000 indicated that the data were suitable and adequate for factor analysis (see Table 4.14 above). There were, however,

thirty-three variables with low communality values which were expunged from further analysis. Therefore, eight variables with high communality values were finally entered into the factor analysis.

4.7.1 Extracted Factors of users' satisfaction with the housing attributes and management in Onitsha North

Table 4.15: Rotated component matrix of respondents

	Component							
	1	2	3	4	5	6	7	8
Provision of refuse disposal facilities in the estate	.580							
Provision of shopping facilities in the estate							.883	
Provision of educational facilities in the estate							.865	
Provision of recreational/sport facilities in the estate							.539	
Provision of playground for children								
Provision of parking spaces in the estate								
Availability of open spaces/green areas	.620							
Response to maintenance request	.806							
Tenant Selection Procedure	.780							
Location of Estate Office	.748							
Rent collection procedure	.671							
General Facility Management	.711							
Courtesy of management staff	.589							
Level of mess and nuisance caused by management staff				.567				
The quality of managerial display				.690				
Management and maintenance of facilities in the housing estate				.647				
Mode of water supply to the housing unit								.789
Security post at entrance to the housing estate								.588
Level of privacy in the housing estate								
Availability of green areas within the housing estate								
Accessibility to medical and healthcare services						.501		
Accessibility to public transport facility						.684		
Accessibility to place of worship						.657		
External lighting in the housing estate						.536		
Road network within the estate					.604			
Commercial activities in the estate					.719			

Adequacy of sizes of bedrooms	.599
Adequacy of Number of bedrooms	
Adequacy of sizes of cooking and storage spaces	.691
Adequacy of natural lighting in Living/dining Spaces	.730
Adequacy of Natural lighting in bedrooms	.790
adequacy of Natural lighting in Kitchen	.768
Adequacy of circulation of fresh air in living/dining rooms	.701
Adequacy of fresh air in bedrooms	.532
Main source of power supply to the housing units	.581
Mode of refuse collection and disposal	.628
Access roads to the estate	.687
Characteristics of roads within the estate	.666
Presence of walkways in the estate	.550
Streets light in the estate	.583

Extraction Method: Principal Component Analysis.

Author's Field Survey, 2024

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 8 iterations.

Presented in Table 4.15 are the variables that loaded on each factor. Eight variables are highly loaded strongly and positively on factor 1. These variables include: provision of refuse disposal facilities in the estate (.580), availability of open spaces/green areas (.620), response to maintenance request (.806), tenant selection procedure (.780), and location of estate office (.748). Others were: rent collection procedure (.671), general facility management (.711), and courtesy of management staff (.589). Apparently, factor 1 is associated with Managerial factor. The second factor influencing users' satisfaction with the housing attributes and management in column two has four variables that highly loaded on it. These variables are: adequacy of sizes of cooking and storage spaces (.691), adequacy of natural lighting in living/dining spaces (.730), adequacy of natural lighting in bedrooms (.790), adequacy of natural lighting in kitchen (.768), adequacy of circulation of fresh air in living/dining rooms (.701), and adequacy of fresh air in

bedrooms (.701). These six variables suggest users' adequacy of utilities and could hereby be termed Utility adequacy factor.

The third factor influencing users' satisfaction with the housing attributes and management is as revealed under column three in Table 4.15. These factors are: Main source of power supply to the housing units (.581), mode of refuse collection and disposal (.628), Access roads to the estate (.687), characteristics of roads within the estate (.666), presence of walkways in the estate (.550), and streets light in the estate (.583). The loading pattern could be termed Infrastructural factor. The fourth factor is in column four. Three variables associated are: level of mess and nuisance caused by management staff (.567), quality of managerial display (.690), and management and maintenance of facilities in the housing estate (.647). This could be designated as Facilities maintenance factor.

Another factor influencing users' satisfaction with the housing attributes and management in column five also has three variables that highly loaded on it. These variables are: road network within the estate (.604), commercial activities in the estate (.719), and adequacy of sizes of bedrooms (.599). The sixth factor are loaded in column six, which are accessibility to medical and healthcare services (.501), accessibility to public transport facility (.684), accessibility to place of worship (.657), and external lighting in the housing estate (.536). These variables considered the accessibility users had to facilities. Factor six could, therefore, be referred to as Accessibility to facilities factor. The last factor that influenced users' satisfaction with the housing attributes and management is shown on column seven of Table 4.20 above. Variables that were highly loaded on this factor are three. These are: provision of shopping facilities in the estate (.883), provision of educational facilities in the estate (.865), and provision of

recreational/sport facilities in the estate (.539). This factor was designated as Provision of facilities.

The figure below depicts these factors on a pie chart.

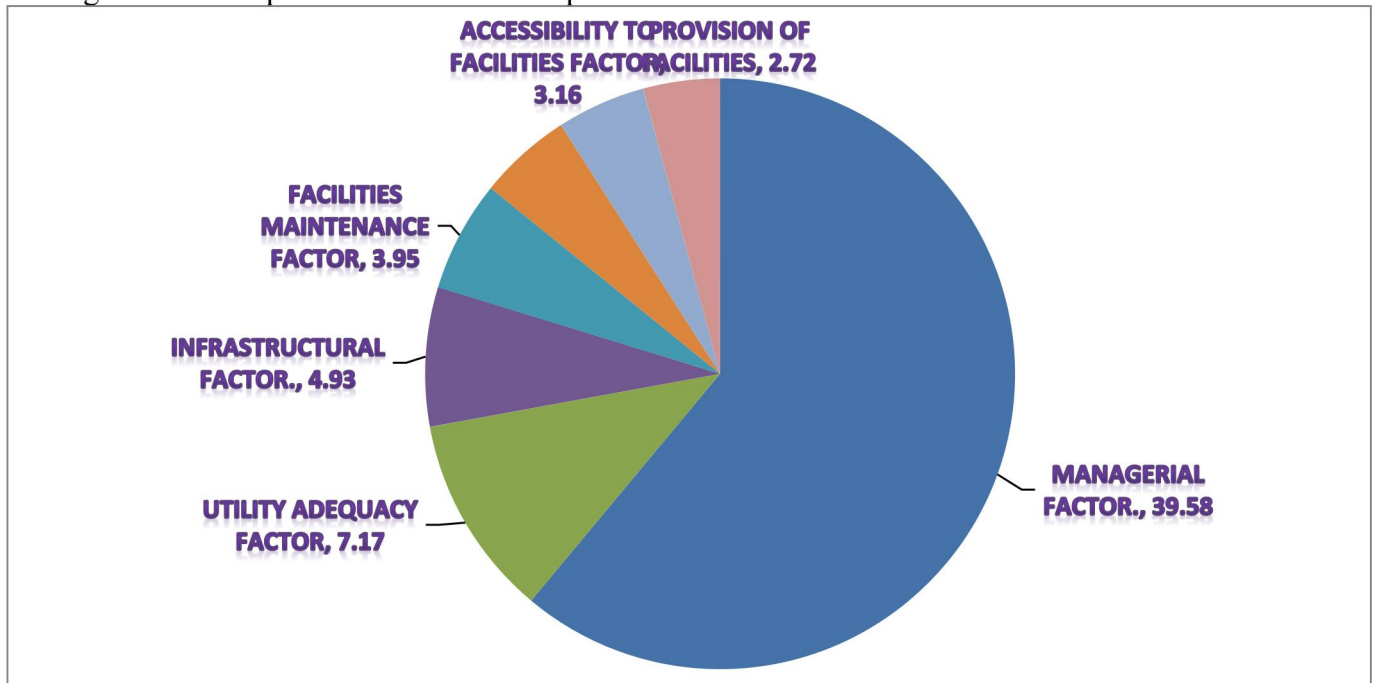


Figure 4.1: Factors influencing users' satisfaction with the housing attributes and management in Onitsha North

The inference that could be drawn from these factor loadings is that a combination of facilities maintenance factors (in terms of their management), infrastructural factors, utility adequacy factors, managerial factors, provision of facilities factors and accessibility factors all give rise to users' satisfaction in the selected private housing estates.

4.8 Discussion of Findings

Majority of the respondents in these housing estates were males, with the exception of Onitsha GRA that has more female household heads than the males, they are mostly in their productive years of between 31-45 years of age, majority are married, very well-educated family persons

with household size of 3 persons in the majority, depicting the growing middle-class families in most Nigerian cities. Also, most respondents in Onitsha GRA work in the public sector, while majority in both Akpaka and American Quarters works with the private sector, and their income level could also support the rent passing in the estate. Also, the information gotten suggests a good percentage of the respondents had lived in the estates for a reasonable period and therefore can provide dependable information of their perception on the housing estates. It can be seen that a large number of the respondents in the three housing estates have an average monthly income of well above a hundred thousand. Findings also revealed that high and middle up positive correlations existed between users' socio-economic characteristics and their level of satisfaction with housing attributes and management in the private housing estates surveyed.

Users' satisfaction with bathroom/toilet facilities in the house had positive correlation with age ($r= 0.190$, $p<0.01$), educational attainment ($r=0.254$, $p<0.01$) and average monthly income ($r=0.153$, $p<0.05$). This implies that the older the age of users, their educational attainment and their income, the higher the level of satisfaction with bathroom/toilets facilities in the house. In a similar vein, satisfaction with quality of water treatment in the housing estate had positive correlation with sex ($r=0.144$, $p<0.05$), educational attainment ($r=0.253$, $p<0.01$) and average monthly income ($r=0.180$, $p<0.01$). In the case of users' satisfaction with types of building materials used in the house, age and educational attainment had positive correlation at 0.01 and 0.05 levels. Thus, users may be satisfied with types of building materials used in the house depending on age and educational attainment. Satisfaction with type of house users live in had positive relationship with age ($r=0.172$, $p<0.05$) and educational attainment ($r=0.204$, $p<0.01$). In his study of identifying the correlates of dwelling satisfaction, ⁹ observed that households with different socio-economic backgrounds have different levels of aspiration, tolerance and

psychology on satisfaction towards housing. Similarly, ¹⁰ in their study on matriarchal low-income single families pointed out that personality traits are good precursors to satisfaction towards housing.

The study discovered that most of the respondents found portable water supply, burglary proofs on windows, number of bedrooms and residence type to be very adequate. It was however surprising that respondent could rate level of privacy, cost of housing and fire safety measures very inadequate. This means that those areas are needed to be put into consideration by private housing developers in their subsequent schemes. It was found that the housing estates are being managed by developers through their management departments. Preventive maintenance operations are being adopted through some system of routine inspections.

Also, different features and fittings in the housing estates surveyed contribute different levels of satisfaction. However, in the overall level of users' satisfaction with private housing estates in the study area, the study reveals that users are satisfied with their housing attributes in terms of the features and fittings. Although, respondents in Akpaka and American Quarters rated size of living and dining space, natural lighting and circulation of fresh air in living and bedrooms as unsatisfactory. Likewise, size of cooking and storage space was rated unsatisfactory in American Quarters while external appearance of the house was rated unsatisfactory in Akpaka Housing Estate.

On the other hand, noise level in the estate, nearness of the estate to place of work, parking space within the estate, social activities, prices of goods in the estate and nearness to shopping facilities across the three housing estates surveyed were rated unsatisfactory. Open space and green areas, playground for children, nearness of the estate to healthcare facilities and perimeter fencing of

the estate were rated unsatisfactory in both Akpaka Housing and American Quarters respectively. Nearness of the estate to public infrastructure and urban services were also rated unsatisfactory in Onitsha GRA and American Quarters estate respectively. Nearness of the estate to recreational and sporting facilities and communal activities within the estate were rated unsatisfactory in American Quarters estate. Also, nearness of the estate to children's school and general security of life and property in Akpaka estate were rated unsatisfactory.

Managerial activities across the three housing estates are generally satisfactory as can be seen from the findings except for American Quarters where rules and regulations regarding residency in the housing estate and cost of renting were rated unsatisfactory. Cost of renting is also rated unsatisfactory in Onitsha GRA as well. The extracted factors of users' satisfaction with the housing attribute and management reveal managerial factor, utility adequacy factor, infrastructural factor and facilities maintenance factor. Other factors were accessibility to facilities. The seven factors collectively accounted for 64.82% of the variance of factors of influencing users' satisfaction with the housing attributes and management in Onitsha North, Anambra State.

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CHAPTER FIVE

CONCLUSION

5.1 Summary of Findings

The study surveyed respondents in three housing estates in Onitsha North, Anambra State, focusing on the satisfaction of users with their housing attributes and management. The majority of respondents were males, married, well-educated, and in their productive years between 31-45 years old. Most respondents worked in the public sector, while the majority in Akpaka and American Quarters worked in the private sector. Most respondents had lived in the estates for a reasonable period, providing reliable information on their perception of the housing estates. The study found that users' satisfaction with bathroom/toilet facilities, water treatment quality, and building materials had positive correlations with age, educational attainment, and income. Users also satisfied with the type of house they lived in. on adequacy, the study found that most respondents found portable water supply, burglary proofs, number of bedrooms, and residence type to be very adequate.

However, respondents rated privacy, cost of housing, and fire safety measures as inadequate. The study also found that different features and fittings contributed to different levels of satisfaction. However, respondents in Akpaka and American Quarters rated living and dining space, natural lighting, and fresh air circulation as unsatisfactory. Furthermore, attributes such as noise level, proximity to work, parking, social activities, and shopping facilities were rated unsatisfactory. The extracted factors of users' satisfaction with housing attributes and management in Onitsha North, Anambra State were managerial, utility adequacy, infrastructural, and facilities maintenance.

5.2 Conclusion

Based on the findings from the study of private housing estates in Onitsha North, Anambra State, it is evident that the majority of residents are predominantly middle-class, well-educated individuals in their productive years, with stable family structures. The demographic profile underscores a significant representation of both public and private sector workers, reflecting diverse economic backgrounds capable of supporting the housing costs in their respective estates. Moreover, the study identifies correlations between socio-economic characteristics and satisfaction levels with housing attributes, highlighting that age, educational attainment, and income influence perceptions of facilities such as bathrooms, water treatment quality, and building materials.

Furthermore, while residents generally express satisfaction with the housing features and management, notable disparities exist across estates in specific amenities and infrastructure. Areas such as privacy, housing costs, and fire safety measures emerge as critical concerns requiring attention from developers and management agencies. The study underscores the importance of tailored management practices and continuous maintenance efforts to sustain satisfactory living conditions. Future developments should prioritize addressing these identified shortcomings to enhance overall resident satisfaction and ensure sustainable community living in Onitsha North's private housing estates.

5.3 Recommendation

Based on the findings, the following recommendations are proposed:

(i) **Enhancement of Essential Amenities and Infrastructure:** Private housing developers should prioritize addressing inadequacies in essential amenities such as privacy, cost of housing, and fire safety measures. This includes incorporating better soundproofing to reduce noise levels,

improving fire safety protocols, and ensuring that housing costs remain competitive yet reflective of the amenities provided. Additionally, developers should enhance the quality and accessibility of open spaces, green areas, playgrounds, healthcare facilities, and perimeter fencing to improve overall resident satisfaction, particularly in Akpaka Housing Estate and American Quarters.

(ii) Targeted Upgrades to Housing Features: It is crucial to improve specific housing features that have been rated unsatisfactory by the residents, such as the size of living and dining spaces, natural lighting, circulation of fresh air, and external appearance of the houses. Developers should consider redesigning these aspects in future projects to meet the expectations of middle-class families who value well-lit, spacious, and aesthetically pleasing living environments. In addition, increasing storage space in kitchens and enhancing the general appearance of the buildings can significantly boost resident satisfaction.

(iii) Improved Access to Public Infrastructure and Services: The study highlights the need for better proximity to public infrastructure and urban services, such as recreational facilities, children's schools, shopping centers, and public transport. Developers should collaborate with local governments and urban planners to ensure that new housing estates are strategically located near these essential services. This will not only improve the convenience and quality of life for residents but also increase the attractiveness and value of the housing estates.

(iv) Strengthening of Estate Management Practices: While managerial activities in the estates are generally satisfactory, there is room for improvement, particularly in enforcing rules and regulations regarding residency and revising rent costs. Estate management should establish clear, consistent, and fair policies that are regularly reviewed to ensure they meet the evolving needs of residents. Additionally, implementing more frequent and transparent communication between

management and residents can foster a greater sense of community and trust, leading to higher satisfaction levels across all estates.

5.4 Contribution to Knowledge

Firstly, the study provides empirical evidence linking socio-economic characteristics such as age, educational attainment, and income, with varying levels of satisfaction across different housing attributes. This understanding highlights the importance of tailoring housing designs and management strategies to meet the specific needs of diverse demographic groups. Secondly, the study sheds light on the critical areas of dissatisfaction within private housing estates, such as privacy, cost of housing, and access to essential infrastructure and services. By identifying these gaps, the research offers actionable insights for developers and policymakers to improve the living conditions in private estates, ensuring they are aligned with the expectations of the growing middle class in urban Nigeria. This contribution is particularly valuable in guiding future housing development projects, enhancing resident satisfaction, and promoting sustainable urban living in similar contexts.

5.5 Suggested Areas for Further Research

Future research could explore the relationship between specific housing design elements such as ventilation, natural lighting, and space allocation; and the physical and mental health of residents. This would provide deeper insights into how design choices influence overall well-being in private housing estates.

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APPENDIX A

DEPARTMENT OF ESTATE MANAGEMENT LEAD CITY UNIVERSITY, IBADAN, OYO STATE, NIGERIA

Dear Sir/Ma,

This questionnaire is aimed at facilitating a Postgraduate thesis on **Comparative Analysis of Post-occupancy Satisfaction in Selected Residential Properties in Onitsha, Onitsha North LGA, Anambra State**. Your assistance in providing candid and unreserved answers to the questions will be appreciated and treated with utmost confidentiality and would be used strictly for academic purposes. Thanks for providing responses to the questions.

Raji T. Adewale
Department of Estate Management,
Lead City University, Ibadan, Nigeria

INSTRUCTION: Please tick (√) or fill as appropriate
SECTION A: BASIC INFORMATION

1. Sex (i) Male () (ii) Female ()
2. How old are you? (i) 18-30years () (ii) 31-45 years () (iii) 46-59years () (iv) 60years & above ()
3. Marital status: (i) Single () (ii) Divorced () (iii) Married () (iv) Widowed ()
4. What is the highest level of your educational attainment? (i) First School Leaving Cert. () (ii) WASC O' Level () (iii) OND () (iv) NCE () (v) HND () (vi) Bachelor Degree () (vii) Master's Degree () (viii) PhD () (ix) Others-----
5. Employment Sector? (i) Private sector () (ii) Public Sector ()
6. What is the range of your average monthly income? -----
7. How long have you been living in this Housing Estate?
(i) Less than 1year () (ii) 1-3years () (iii) 4-5 years () (iv) More than 5 years ()
8. Household size?
(i) 1 () (ii) 2 () (iii) 3 () (iv) 4 () (v) More than 4 ().

9. What type of rights do you own on this property? (i) Transferred ownership/sublease () (ii) Tenancy ()

SECTION B: HOUSING UNIT ATTRIBUTES RATING

10. How would you rate adequacy of the housing estate where you live in terms of the following attributes? Please tick (✓)

S/N	Housing Attributes	Very Inadequate	Inadequate	Fair	Adequate	Very Adequate
1	Residence type					
2	Sizes of Living & Dining Spaces in your house					
3	Sizes of bedrooms					
4	Number of bed rooms					
5	Size of cooking and storage spaces					
6	Natural lighting in Living/ Dining rooms					
7	Natural lighting in bedrooms					
8	Natural lighting in Kitchen					
9	Walling Materials					
10	Wall Finishes					
11	Window Types					
12	Door Types					
13	Floor Finish					
14	Ceiling Materials					
15	Presence of Nets on Windows and					

	Openings					
16	Burglary Proof on Windows					
17	Perimeter Fencing of the unit					
18	Cost of Housing					
19	Roofing Sheets					
20	Circulation of fresh air in Living/dining rooms					
21	Circulation of fresh air in bed rooms					
22	Level of thermal comfort in your apartment					
23	Protection against noise pollution					
24	Protection against dampness in your house					
25	Protection against insects and dangerous animals					
26	Security measures in your house					
27	Fire safety measures in your house					
28	Level of privacy in your house					
29	Electricity supply in your house					

30	Portable water supply in your house					
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11. How important are these attributes to your quality of life within the estate?

S/N	Attributes	Very Important	Important	Just important	Not important	Not at all important
1	Sizes of Living & Dining Spaces in your house					
2	Sizes of bedrooms					
3	Number of bed rooms					
4	Size of cooking and storage spaces					
5	Natural lighting in Living/ Dining rooms					
6	Natural lighting in bedrooms					
7	Natural lighting in Kitchen					
8	Circulation of fresh air in Living/dining rooms					
9	Circulation of fresh air in bed rooms					
10	Level of thermal comfort in your apartment					
11	Protection against noise pollution					
12	Protection against					

	dampness in your house					
13	Protection against insects and dangerous animals					
14	Security measures in your house					
15	Fire safety measures in your house					
16	Level of privacy in your house					
17	Electricity supply in your house					
18	Portable water supply in your house					

SECTION C: LEVEL OF SATISFACTION WITH HOUSING ATTRIBUTES (BUILDING FEATURES) AND MANAGEMENT THE RESIDENTIAL ENVIRONMENT

12. How satisfied or dissatisfied are you with the house and housing estates where you live in terms of the following? Please tick (✓)

S/N	Features and Fittings	Very Dissatisfied	Dissatisfied	Fair	Satisfied	Very Satisfied
1	Parking space within the estate					
2	Perimeter fencing of the estate					
3	Open space and green areas					
4	Playground for Children					
5	Type of house you live					

	in					
6	Bathroom/Toilets facilities in your house					
7	Types of building materials used in your house					
8	Location of your apartment					
9	External appearance of the house you live in					
10	Natural lighting and circulation of fresh air in your living and bed rooms					
11	Noise level in your house and the housing estate					
12	Water supply and sanitary services in your house					
13	Electrical services in your house					
14	Level of privacy in your house					
15	Cost of acquiring/rentage of your house					
16	Nearness of your house to recreational/sport facilities					
17	Nearness of the					

	housing estate to public infrastructure and urban services					
18	Nearness to shopping facilities within the estate					
19	Nearness of your house to place of work					
20	Nearness of your house to health care facilities					
21	Nearness of your house to your children's school					
22	Nearness of your house to the nearest market					
23	Prices of goods and services in the housing estate					
24	Job/ business opportunities within and around the housing estate					
25	Level of crime and anti- social activities in the housing estate where you live					
26	Communal activities in your housing estate					
27	Suitability of where you live to your natural way of life					

28	Rules and regulations regarding residency in the housing estate you live in					
29	Management and Maintenance of facilities in the housing estate					
30	General cleanliness of the housing estate					
31	General security of life and property in the estate					
32	Proximity to religious centers					
33	Window condition					
34	Door condition					
35	Quality of water treatment					
36	Sizes of Living & Dining spaces					
37	Sizes of bedrooms					
38	Number of bed rooms					
49	Sizes of cooking and storage spaces					
40	Response to maintenance request					
41	Location of estate office					

42	Rent collection procedure					
43	General facility management, etc.					
44	The courtesy of the management staff					
45	Tenant selection procedure					
46	Level of mess and nuisance caused by the management staff					
47	The quality of managerial display					

13. Who maintains the facilities in the housing estate you live in?

(i) Individual residents () (ii) Estate Agents () (iii) Tenants' Association () (iv) The developer () (v) others, please specify-----

SECTION D: WHICH OF THESE FACTORS MOST INFLUENCES YOUR SATISFACTION WITH THE HOUSING ATTRIBUTES AND MANAGEMENT IN THE HOUSING ESTATES

14. How would you rate your level of satisfaction with building facilities and services within the housing estate where you live in terms of infrastructure? Please tick (✓)

S/N	Factors	Very Satisfied (5)	Satisfied (4)	Not Satisfied (3)	Dissatisfied (2)	Indifferent (1)
1	Provision of Sanitary/ drainage facilities					

2	Provision of refuse disposal facilities					
3	Provision of shopping facilities in the estate					
4	Provision of educational facilities in the estate					
5	Provision of recreational/sport facilities					
6	Provision of Playground for children					
7	Provision of parking spaces in the estate					
8	Availability of open spaces/green areas					
9	Response to maintenance request					
10	Tenant selection procedure					
11	Location of estate office					
12	Rent collection procedure					
13	General facility management, etc.					
14	The courtesy of the management staff					

15	Level of mess and nuisance caused by the management staff					
16	The quality of managerial display					
17	Management and maintenance of facilities in the housing estate					
18	Mode of Water Supply to the housing unit					
19	Security posts at entrances to the housing estate					
20	Level of privacy in the house					
21	Availability of green areas within the estate					
22	Accessibility to medical and health care services					
23	Accessibility to Public transport service					
24	Accessibility to place of worship					
25	External lighting in the housing Estate					
26	Road network within the estate					

27	Communal activities in the estate					
28	Adequacy of Sizes of Bedrooms					
29	Adequacy of Number of Bedrooms					
30	Adequacy of Sizes of Cooking and Storage Spaces					
31	Adequacy of Natural Lighting in Living/Dining Spaces					
32	Adequacy of Natural Lighting in Bedrooms					
33	Adequacy of Natural Lighting in Kitchen					
34	Adequacy of Circulation of Fresh air in Living/ Dining rooms					
35	Adequacy of fresh air in Bedrooms					
36	Main Source of power supply to housing unit s					
37	Mode of refuse collection and disposal					
38	Access roads to the estate					
39	Characteristics of roads within the estates					

40	Presence of Walkways in the Estate					
41	Street Lights in the estate					

Thank You.

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APPENDIX B

DEPARTMENT OF ESTATE MANAGEMENT LEAD CITY UNIVERSITY, IBADAN, OYO STATE, NIGERIA

Dear Sir/Ma,

This questionnaire is aimed at facilitating a Postgraduate thesis on **Comparative analysis of Post-occupancy Satisfaction in selected Residential Properties in Onitsha, Onitsha North LGA, Anambra State**. This segment of the questionnaire is dedicated to examining the management strategies you adopt in the day-to-day management of your estate. Your assistance in providing candid and unreserved answers to the questions will be appreciated and treated with utmost confidentiality and would be used strictly for academic purposes. Thanks for providing responses to the questions.

Raji T. Adewale.
Department of Estate Management,
Lead City University, Ibadan, Nigeria

SECTION A: BASIC INFORMATION OF THE RESPONDENT

1. Sex (i) Male () (ii) Female ()
2. Age? (i) 18-30years () (ii) 31-45 years () (iii) 46-59years () (iv) 60years & above ()
3. What is the highest level of your educational attainment? (i) OND () (ii) HND () (iii) B.Sc. () (iv) M.Sc. () (v) PhD () Others-----
4. Please indicate your length of experience in the Real Estate Management Practice (i) <5yrs () (ii) 5-10yrs () (iii) 11-15yrs () (iv) >15yrs ()
5. Please indicate your professional affiliation? (i) NIESV () (ii) NIOB () (iii) NIQS () (iv) NIA () (v) NSE () Others-----
6. Kindly indicate your status. (i) Entry level Manager () (ii) Partner () (iii) Manager () (iv) Supervisor () (v) Director/Senior Partner () others (specify)

SECTION B: MANAGEMENT STRATEGIES

7. What class of client best describes the owner of the facilities you manage? (i) Property Developer () (ii) Owner occupier () (iii) Property investor () (iv) Others

8. Which of the following is your organization in to? (i) Build and Let () (ii) Build and Sell () (iii) Build, Let and Manage () (iv) Build only ()

9. Which management approaches do you adopt in the management of your housing estate? (i) In-house/insourcing () (ii) Outsourcing () (iii) Hybrid ()

10. Does your organization have technical department dedicated to fixing technical problems within the housing estate? (i) Yes () (ii) No ()?

11. Which of the following maintenance strategies do you adopt? (i) Preventive () (ii) Corrective () (iii) Condition-based ()

12. Which of the following management approaches do you adopt for the listed management operations?

Management operations	In-house	Outsource	Combination of the two (Hybrid)
Routine inspection			
Structural repair			
Cleaning and maintenance of the housing estate environment			
Repairs of fixtures and fittings			
Electrical repairs			
Fixing of roads within the estate			
General security services			
Refuse collection/disposal			
Dispute resolution			

Rent collection procedure			
Tenant selection procedure			
General facility Management			

Thank you.

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