

**DETERMINANTS OF VARIATION IN RESIDENTIAL PROPERTY
RENTAL VALUES IN MINNA, NIGERIA.**

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**THESIS SUBMITTED TO THE POSTGRADUATE SCHOOL
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MANAGEMENT AND VALUATION**

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ABSTRACT

It has been observed that variation exists in residential property rental values of similar residential properties across neighbourhoods within the geographical area. This study examined the determinants of variation in residential property rental values in Minna, Nigeria. The population for the study comprised of rented residential properties and tenants who are the household heads occupying the residential properties in Minna as well as registered Estate Surveyors and Valuers firms in Minna. Purposive Sampling technique was used to pick the tenants and twelve registered Estate Surveyors and valuers firm, a total of 250 questionnaires were administered on the occupants of tenanted residential properties in the study area by neighbourhoods while 185 questionnaires were validly and completely filled and subsequently used for the analysis. Geometric mean was used to obtain the rental growth rate for the period of study for two bedroom and three bedroom flats. Standard Deviation and Coefficient of Variation, Relative importance index (RII), Simple Descriptive Statistics were adopted in achieving the set objectives. The study revealed that rental trend for three bedroom flat within the study period changed from 1.59% in 2011 to 8.36% in 2017 and later in 2020 dropped to 4.61%. For two bedroom flat within the study period changed from 1.51% in 2012 to 7.92% in 2017 and later dropped to 5.59% in 2020. This indicates that the variation was more in 2017 across the neighbourhoods. The variation showed the average rental value of two bedroom flats within the study period having 24.4% for Bosso town ranking the highest while Chanchaga is having 13.03% as the lowest level of variation. For three bedroom, Shango has the highest with 18.9% while Fadikpe has the lowest with 9.9% level of variation. The study also revealed that various factors are responsible for the variation in rental value but not limited to the factors, these are the physical, location and neighbourhood characteristics of residential property which determine the rental values of residential property in the study area. The various factors played major role influencing tenants' choice of accommodation in the various neighbourhoods across the study area. The study went further to reveal the dominant factors influencing tenants' choice of accommodation in each neighbourhood of the study area which include condition of the building, size of the building, number of bedrooms, number of toilets and bathrooms, quality of the neighbourhood, direct access to tarred road and presence of tertiary institution, banks and public offices. Therefore, landlords seeking optimum return from their residential property investment should focus on improving the physical and structural characteristics of the property like the condition and size of the building, number or toilets and bathrooms and also number of bedrooms.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Many cities of the world in developed and developing countries in particular were not planned initially while only few of them started as planned developments. These human settlements began to develop as villages or trade centres but they increased in sizes to what are big cities and urban centres today (Oyebanji, 2003). Residential dwelling symbolizes one of the most basic needs of human being and it has a profound impact on the health, welfare, and productivity of individuals (Julius, 2010).

More so, not only is house an essential need of human being but it is also an object of investment as well as a means of storing wealth. This has resulted to people buying houses and those that cannot afford to buy do rent in order to satisfy their needs hence, the creation of residential property market. Unlike every other commodity market, property market is not centralized as the market for a particular property is located where the property is situated. As a result of the lack of centralized market for real properties, property values usually vary irrespective of the level of similarity of such properties (Olalere, 2016).

Rent is the economic return to land resources and it is also the value of land on annual basis as stated by Udoekanem (2015). Contributors at the early conceptualization of rent theory as highlighted by Udoekanem (2015) believed that rent is differential and caused mainly by distance and cost of transportation and attributed differences in rent-earning capacity of land to differences in location and transport cost. Findings

from contemporary empirical studies also revealed that rental growth factors vary in different perspectives ranging from physical, structural and neighbouring facilities in particular area and unit from locality to locality. Also, academics, practitioners, researchers and decision makers have developed strong interest in the subject of property market and related issues in recent times (Udoekanem, 2015).

The determination of property value is usually the responsibility of qualified Estate Surveyors and Valuers as provided by the Estate Surveyors and Valuers Decree No. 24 of 1975 now CAP E. 13 LFN 2007. However, despite the various standards, methods and regulations guiding the process of determining property value, the heterogeneous nature of real property would not allow for equality of value even for properties in the same location. However, as Estate Surveyors and Valuers our opinions should be close. Property is a multi-dimensional product and different factors influence its value (Oloke, Simon and Adesulu, 2013).

The demand for residential property keeps increasing by the day and the capital intensive nature of real property; the period of construction; among other factors makes it difficult for the supply to catch-up. Moreover, not only that the population keeps growing, it also tends to be concentrating on urban areas as a result of rural-urban drift hence the inability of the urban property market to supply adequately for the demanding urban population. This affects the stability of property market and consequently results to variation in residential property rental values (Olalere, 2016).

The rate of variation in residential property rental values in Minna is visible which may be due to so many reasons depending on the choice for accommodation of an individual, selection of neighbourhood, change in location, change in fashion and

taste change in level of income and many more determinants which this study would assess. Using Minna as a case study will, therefore, reveal or help to establish the relationship between property values and the determinants that result in variation of rental values.

Referring further to Minna, the residential property market is rapidly growing and the reason for this is not far-fetched from the fact that the population of the city is growing by the day as a result of many factors which may include among others the situation of tertiary institutions (Federal University of Technology Minna both Bosso and Gidan kwanu campuses, College of Education Minna, School of Midwifery Minna); branches of top commercial banks; and being in close proximity to the Federal Capital Territory. Residential property rental values vary within and across the various neighbourhoods of Minna metropolis. A typical example of the variation in residential property rental value in Minna can be observed in properties located within the neighbourhood of the various tertiary institutions in the city. It is against this background that the researcher seeks to examine the various determinants responsible for variation in residential property rental values in Minna.

1.2 Statement of the Research Problem

In the past, real estate was perceived as a legacy a parent bequeaths to their children. However, with the understanding that real estate investment is characterized by capital appreciation and boasts a good hedge against inflation, the real estate market is becoming more popular and important (Igbinosa, 2011). More so, residential property market represents one of the most important sub-sectors of the real estate industry (Anthony, 2012). The demand for residential accommodation is on the

increase as a result of the ever growing human population. This increase has caused rental growth and variation over the years and has ultimately led to the enticing nature of residential Property investment and the consequent attraction of investors, public and private, to residential property investment (Olalere, 2016).

However, rent determination in Nigeria has often been left basically to the choice of the owner who fixes rent based on his estimation of what his house should command as per rental value (Kemiki, Ojetunde, and Ayoola, 2014). In the real estate markets, buyers and renters (or their representatives) pay attention to certain property features in their choice of residential properties, and these features which differentiate one property from the other, eventually inform the value to be placed on such property (Olalere, 2016).

However, it has been observed from previous studies among which is the research carried out by Julius and Mustapha (2009), Ojetunde, Fabunmi, Abdulkareem and Abass (2012),

Ivy and Ernest (2013), Anushree (2013), Nwosu and Olofa (2015), Olalere (2016), Nishani (2016) Olorunyomi (2018), among others that there is significant variation in rental values of residential properties within and across several neighbourhoods of Minna metropolis. It is against the background that this research seeks to examine various determinants responsible for variation in residential property rental values in Minna.

1.3 Research Questions

In order to fulfil the highlighted objectives of the research and to consequently achieve the aim, the research seeks to provide answers to the following questions.

1. What are the rental trends in residential properties in Minna between 2011 and 2020)?
2. What is the rental variation in residential property rental values in Minna?
3. What are the factors responsible for variation in rental values residential property in Minna?
4. What are the factors influencing accommodation choice of tenants across the neighbourhoods of Minna?

1.4 Aim and Objectives of the Study

The aim of this thesis is to examine the determinants of variation in residential property rental values in Minna with the view to making useful recommendation to guide prospective residential property investors in the study area. To achieve this aim, the following objectives will be followed.

- i. Examine the trend in rental values of residential property in Minna from 2011 to 2020.
- ii. Analyse the rental variation in residential property rental values in Minna.
- iii. Assess the factors responsible for rental variation in residential property Minna.
- iv. Evaluate the factors influencing accommodation choice of tenants across the selected neighbourhoods of Minna.

1.5 Scope of the Study

Research scope is usually set to cover the extent of the problem the researcher is intending to tackle based on his experience, competence, time frame, and the available resources. For this research, the scope covers the tenant-occupied residential properties in Minna Metropolis specifically 2 bedroom and 3 bedrooms which are common in all densities and their current rental values. Fifteen neighbourhoods within the study area were selected to have a wide coverage and these neighbourhoods include; Bosso town, Shango, Sauka Kahuta, Kpakungu, Tudun Fulani, Chanchaga, Bosso Estate, Tayi village, Tunga. Maitumbi, F-layout, Fadikpe, GRA, Dutsen Kura and Jikpan. The study is aimed at assessing the determinants responsible for variation in residential property rental values in Minna. The choice of the study area was because various types of residential rental properties and factors responsible for rental variation exist in the study area. Furthermore, the study will be reviewed for a period of 10 years (2011-2020) because of the significant rapid change in rental values observed within this period in the study area.

1.6 Justification for the Study

The ultimate aim of any investment is to generate maximum profit. Usually for investment in real property, the financial return is always in form of income streams otherwise known as rent or capital appreciation. As Population and urbanization increases, demand for housing both owner- occupancy and rental increases (Nishani, 2016).

The income streams or rental values in this case are usually determined by many factors which make them vary irrespective of the level of demand, location and the features of the properties (Olalere, 2016).

Therefore an inquiry into the determinants of this variation is important as it will offer the players and participants in the residential property market a guide and indicator to rational and prudent investment decisions. As noted earlier, rental value is an important property performance indicator, main expenditure for property occupiers and an avenue for generating revenue for the property owner and it is often used as an index by other key players in the property market such as developers and investors to determine the value of their property investment as well as the viability of their real estate projects.

This study is justified by the need for property practitioners in Nigeria to get impeccable comprehension of the characteristics of rental fluctuations and factors that determine variation in rental value so as to obtain better knowledge of the behaviour of the real estate market. The study is needed at this time, as the rate of demand for space became necessary to satisfy human needs.

Furthermore, it will also serve as a basis for further research by students in the profession of Estate management and other related fields.

1.7 The Study Area

Niger State is located between the coordinates 10° 00'N 6° 00'E and 10.000° N 6.000° E. One of the 36 States of Nigeria was created out of the defunct North Western State on 3rd February, 1976, situated in the North Central geo- political zone.

Furthermore, the State shares a common international boundary with the Republic of Benin at Babanna in Borgu local government area of the State. Currently the State covers a total land area of 76.000 sq. km or about 9 % of Nigeria's total land area.

Niger State experiences distinct dry and wet seasons with annual rainfall varying from 1,100mm in the Northern part of the state to 1,600mm in the southern parts. The maximum temperature is recorded between March and June while the minimum is usually between December and January. Generally, the climate, soil and hydrology of the state permit the cultivation of most of Nigeria's staple crops and still allow sufficient opportunities for grazing, fresh water fishing and forestry. The major crops being cultivated in the state are Rice, Yams, Sorghum, Maize, Ground nuts, Beans, Cassava, Sugar cane, Melon and Millet. (DAP Niger State, 2007).

1.7.1 Population

The 2006 census states that the population is 3,954,772, comprising 2,004,350 males and 1,950,422 females. These represent the proportional share of 51.5% for males and 48.5% for females. As opposed to a national annual growth rate of 3.2%, Niger State is growing at 3.4% annually and is a peaceful State reputable for its hospitality and good neighbourliness. The state is also blessed with a lot of natural resources (solid minerals, vast arable land, good weather condition and water). Development Action Plan Niger State (DAP, 2007).

1.7.2 Minna

The study area Minna lies at latitude 9° 33' N and 9° 45'N and longitude 6° 34' E and 6° 42'E. The town has a mean annual rainfall of 1334mm (52 inches) taken from an exceptionally long record of 54 years. The rainy season starts on the average between the

11th-20th April and lasts between 190 -200days. Minna being the headquarters of Chanchaga local government derived its name from Gbagyi word "Min" and "Na"

the word "Min" means spray and "Na" means Fire. The town originally was on the hill at Sayako and walls (Ganuwa) built around it. There were also Gbagyi towns and villages in and around the present site of modern Minna. (DAP Niger State, 2007).

Minna is a town of migrants. Nine in ten of the households' heads in the town have migrated to the town from else-where. Work is the main attraction. Without migrant population, the skilled services and trades, for instance, would not be able to function. (DAP Niger State, 2007).

The population of the town in 1991 was 230,169 and by 2006, the population increased to 350,287. The population growth rate of the city is 2.58% per annum (DAP Niger State, 2007). In 2020, the population is put at 447, 959 at 3.19% from the National Bureau of Statistics (NBS, 2016).

1.7.3 Urban Area Coverage

Minna covers some 885 hectares that can be divided into the following land use categories: Residential, Government Institutions, Educational Institutions, Law and Order Institutions, Commercial and Industrial, Public Utilities and Controlled Open Space. (DAP Niger State, 2007).

1.7.4 Occupancy Rates

Minna is a town of extremes as far as room occupancy is concerned. Over one quarter of the households are living in comparative ease at one person or less per room and

almost a fifth of the households are living in this comfort at over three persons per room (Minna master plan chapter 1, no 44). The survey revealed an appalling state of poor sanitary facilities throughout the main town and villages. (DAP Niger State, 2007).

1.7.5 Major Economic Activities

The main economic activities of the people of Minna is trading and farming. Most of the produce in the market are brought in from outlying areas especially by the Gbagyi who bring yams, beans, guinea corn, rice, maize and other food stuff.

Today's industries are now emerging and large numbers of Banks have spread their tentacles in the city. Minna accommodates about 70% Commercial activities. (DAP Niger State, 2007).

1.7.6 Major Ethnic Groups

The Gwaris were the original settlers and probably the most numerous ethnic group. In 1905, the Hausas came to join them and the easily identifiable major ethnic groups include Nupes, Gbagyi, Kada,Koro,Bassa, Kamuku, Ingwai, Fangu, Kambari, Dukkawa,

Fulani, Abewa, Bisan, Gungawa, Bauchi, Bariba, Urah, Boko, Bokobaro, Bauchnu, Achifawa, Dakarkari, Kakanda, Ganagana and Dibo (26 in all) and numerous non-native tribes such as Yoruba and Igbo. (DAP Niger State, 2007).

1.7.7 Districts and Wards in the Council Area

Chanchaga Local Government comprises one District, Minna district, with seven Wards namely, Nassarawa, Limawa, Sabongari, Makera, Kongila, Tudun Wada and Kpakungu.

However, the political demarcation of the district is now divided into eleven, namely, Chanchaga Central, Chanchaga South, Limawa A, Limawa B, Makera, Nassarawa A,

Nassarawa B, Nassarawa C, Sabongari, Tudun Wada South and Tudun Wada North (DAP Niger State, 2007).

1.7.8 Transportation System

The city has good road network which include two dual carriage roads that crosses at two ends of the town that is the western bye pass and eastern bye pass. Facilities available are railway lines, Hotels, Trade Fair Complex, Telecommunication system and Tertiary Institutions. The locational and structural features of Minna make the city ideal for urban land uses. (DAP Niger State, 2007).

1.7.9 Tenure and Housing Improvements

Minna is a town of rented accommodation excluding G.R.A., which consists almost entirely of rented accommodation owned by governments, almost half the compounds in the rest of the town are occupied by tenants.

A policy of housing improvement based on dealing with the most overcrowded compounds containing ten or more households and reducing the occupancy rate in each of those compounds to a maximum of four households only would require a replacement need of new accommodation for about 1300 households. (DAP Niger State, 2007).

1.7.10 Investment Pattern

The government and people of Minna, Niger state are generally hospitable and friendly, potential investors are not only concerned about peoples attitude towards strangers but also some economic and social imperatives such as the level of infrastructure available, policy, tax regime, local demand and the range of available financing options, all of which have implications for the cost of doing business and expected profitability (DAP Niger State, 2007).

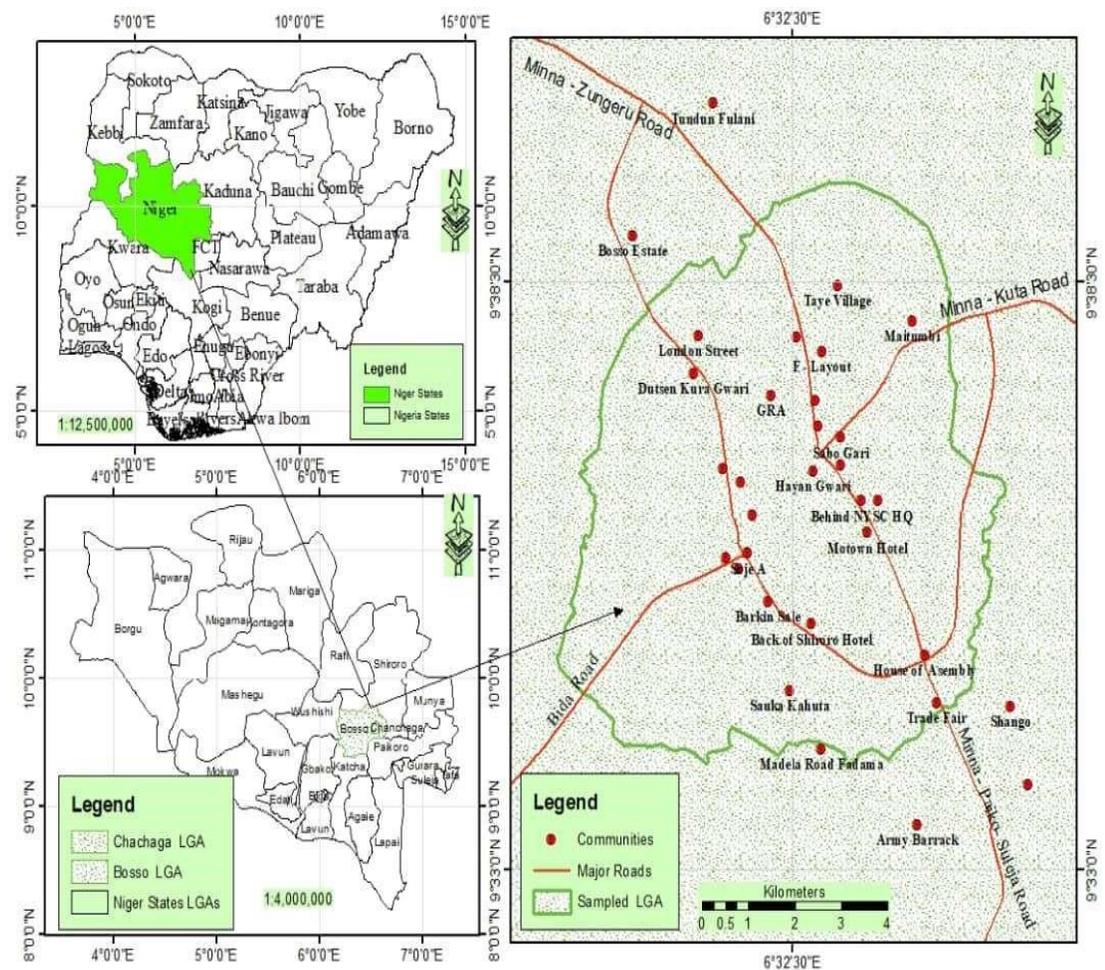


Figure 1.1: Nigeria Showing Niger State, Minna and the Residential Neighbourhoods.

Source: Authors Field Survey, (2022).

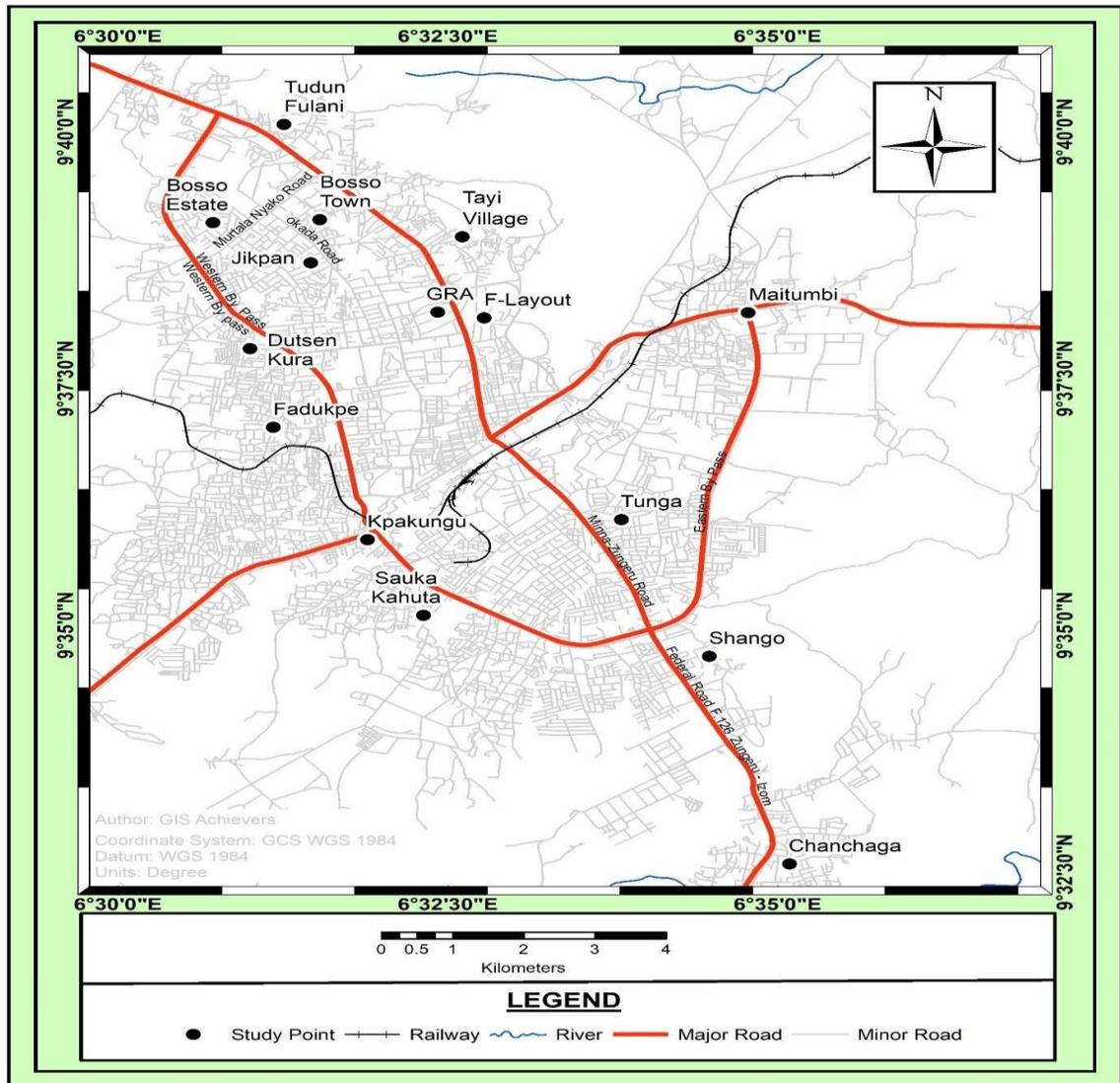


Figure 1.2: Minna Showing the Selected Neighbourhoods.

Source: Authors Field Survey, (2022).

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Definition of Property

Many scholars have given different meanings to the word property with distinct views. Among them is Jide (2003) who described property as a bundle of rights exercisable on land or any improvement on land. These rights are referred to as proprietary rights and they include: possession; right to let; right to use; right to sell among others. Olalere (2016) sees property as the rights or interests a person possess in land or goods to the exclusion of all others. He further preached that the concept of property involves the relationship between individuals and other persons regarding their rights to use a property to the exclusion of others.

Dugeri (2011) went further to describe property as specific rights attached to an object, real or fictitious, which are derived from a wider institutional, that grant the holders recognized power to put that particular object to use, manage and or dispose. Therefore, property can be seen as the right of an individual with respect to a particular object.

2.2 Types of Property

There are various types of property in the real estate setting. Olalere (2016) identified six

(6) major types of property. They are: Agricultural property, Industrial property, Residential property, Commercial property, Recreational property, Special purpose property.

2.3 Residential Property

Residential property is property zoned specifically for living or dwelling for individuals or households. Olalere (2016) described residential properties as dwelling accommodations. They are property developed for human dwelling and habitation.

Igbinosa (2011) defined residential property as the property type used for single or multifamily housing in urban, suburban or rural areas. It is the most popular type of property in various part of the world and residential properties are employed as dwelling by one or more families. Generally, a good residential property should have certain characteristics such as quiet environment, living and outdoor space, privacy, cleanliness, safety and aesthetic satisfaction (Olalere, 2016).

2.4 Types of Residential Property

Isa (2011) enunciated the types of residential properties to include: bungalow, duplex, block of flats, cottages, tenements, and maisonette.

2.4.1 Bungalow

It is a self-contained house on ground floor only with the premises having an enclosed accommodation unit. There are different types of bungalows like 2 bedroom, 3 bedroom bungalows among others and are usually built with boys-quarters and garage.

2.4.2 Duplex

Duplexes are residential buildings on two floors with two sections and both being exactly alike with a common wall in between them.

2.4.3 Tenement Building

These are residential properties consisting of multiple single room dwellings. In a tenement building, occupants usually share almost all building facilities and features like passage, bathrooms, toilets, kitchen, etc.

2.4.4 Block of Flats

These are residential property units that usually share some common parts like outdoor space, entrance doors, corridors and stair case and a single building structure may contain as many number of flats and each occupant having almost full privacy.

2.4.5 Cottages

Cottages are traditional buildings or small buildings usually found in the country side.

They can be built of materials like mud, timber, cement materials, etc.

2.4.6 Maisonettes

This is a luxurious type of residential property with different facility. Maisonettes usually contains many rooms and each room is usually en-suite, living rooms, lounge, garage or car park within the premises and gate house.

2.5. Concept of Value

Value simply relates to the worth of a thing. Basically, there are two philosophical views of value which are: the objective; and the subjective according to (Olalere, 2016).

Objective View of Value: This view posits that value is innate in an object because something is it has value. This school sees the cost to produce a commodity as the primary determinant of value.

Subjective View of Value: This philosophical view of value maintains that value is in the eyes of the beholder, not in the object itself. This view believes that the worth of a thing is the satisfaction derivable from it. The subjective value concept portrays the more modern view of value that is emphasized in modern day valuation or appraisal. This school of thought therefore sees factors outside the object or property itself to have effect on its value. Therefore, real estate is appraised on a subjective basis. A house does not have value just because it is there (objective); it has value due to the numerous characteristics such as the quality, the size, and the location among others.

2.5.1 Factors Affecting Property Value

Nwosu and Olofa (2015) opined that the factors affecting residential property values are not inherent in the commodity, good, or service to which it is ascribed but created in the minds of the individuals who make up the market. They also noted that the relationships that create value are complex, and values change when factors that influence value change. There are four interdependent economic factors that create value: utility, scarcity, desire and effective purchasing power and these are further classified and defined by the institute. Utility and scarcity are supply factors while desire and effective purchasing power are demand factors. Utility is the ability of a product to satisfy a human want, need, or desire. Scarcity is the present undersupply of an item relative to the demand for it. Desire is a purchaser's wish for an item to satisfy human needs. In the case of effective purchasing power, it is the ability of an individual or group to participate in a market that is to acquire goods and services (Nwosu and Olofa, 2015).

Real property has no value if it has no utility, nor scarce or effectively demanded neither is the utility derived from the brick and mortar alone but in some unique characteristics packaged in its location, neighbourhood and infrastructure which are equally desired by the consumers. The authors opined that property value is an essential aspect of property markets worldwide and determined by a variety of factors and the determination of those factors is a significant part of property valuation. Various studies have examined factors affecting property values and have identified the following, age, location, size, neighbourhood characteristics, economic activity, population and transport. The institute further group the variables determining property values into; environmental Variables, neighbourhood variables, accessibility (location) variables and property variables. Olalere (2016) further classified factors affecting property values as follows:

- a) Structural attributes example: numbers of bedrooms, bathrooms, fireplaces, garages, square footage of house, plot size, age of structure, existence of pool.
- b) Neighbourhood attributes: socio-economic characteristics of neighbouring residents, quality of neighbouring structures, ownership/rental, and ethnic composition
- c) Community attributes: school and tax districts
- d) Locational attributes: proximity and accessibility to various amenities including waste sites, power lines, highways, shopping centres, churches, schools, cultural opportunities, airport, public transportation
- e) Environmental attributes: view from property, noise levels, pollution levels, storm water
- f) Time-related attributes: month and year of sale, number of days on market

2.6 Types of Value

There are various types of value in the real estate cycle with each value type hinged on the circumstances and the purposes to which the determination of such value is meant for. The various types of value in the real estate practice include: market value, investment value, value in use, insurable value, assessed value, liquidation value, among others.

2.6.1 Market Value

Market value is the most common values evaluated by real estate appraisers. Not less than 90% of all appraisals focus on this value. Market value definition has changed over the years. However, the most widely accepted definition of market value is that used in the Uniform Standard of professional Appraisal Practice (USPAP) which defined market value as the most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale with the buyer and the seller acting knowledgeably, prudently and without the price being affected by undue stimulus.

2.6.2 Investment Value

Investment value is the value of a particular investment to a particular investor using a specific investment parameters and or assumptions.

2.6.3 Insurable Value

This value type is applicable to insurance valuation. The proceeds from insurance for reconstruction of building damaged by fire, flood, or other hazards are usually based on the cost of reproducing the structure rather than any market phenomenon.

Insurable value therefore is the cost of reproducing a structure or a building less the value of the land which is generally not insured because of its indestructibility.

2.6.4 Value in Use

Value in use has to do with the worth of a property to a specific user rather than the general market value. Value in use does not relate to the general estimate level most users or individuals would be willing to pay but the worth to a particular user or individual.

2.6.5 Assessed Value

This type of value is usually adopted or established by municipalities for the purpose of establishing a basis for taxation. Real property taxes constitutes major source of revenue for local municipalities in many countries of the world. Assessed value is usually based on the adjustment of the market value.

2.6.6 Going Concern Value

Going concern value is concerned with an ongoing business operation. This value is usually based on the premise that the business will continues to operate. When estimating going concern value, appraisers are to allocate the total going concern value among the basic components of the business which usually comprises land, building improvement, franchise, furniture, facilities, equipment, and goodwill. Therefore, going concern value is the worth of an established and operating business enterprise with all its assets. Going concern valuation is sometimes referred to as Business Valuation.

2.6.7 Capital Value

Capital value is the sum of money which is obtainable for all interests in a property at a particular point in time. It is the highest worth in monetary terms which a property will command if exposed for sale in the open market after allowing reasonable time to find a purchaser who purchase with full knowledge of all the circumstances and uses for which the property is capable of being put (Olalere, 2016).

2.6.8 Rental Value

Rental value of a property is the periodic income stream or flow receivable on a property from an able and willing tenant (lessee) by a willing landlord in consideration for occupation of such property in a lease arrangement. Kuye (2003) affirm that the rental value of a property is the amount that a prospective tenant can afford to pay for occupying such property. In the case of residential properties, occupation is a need and does not usually serve a profit making function; hence the rental value of such a property will be influenced by the level of demand and supply (Ajayi, Jimoh and Jimoh, 2014).

Rental value is the highest rent which a property can be expected to reasonably let in an open market. Rental value of a property can be fixed under the following conditions at any particular point in time, a willing and able buyer; a property freely exposed to the market; a static value throughout the period of negotiation and a reasonable time period within which to negotiate the rent considering the nature of the property and state of the market at that particular time.

2.7 Concept of Rent

Housing represents the most basic of human need and it has a profound impact on the health, welfare, and productivity of individuals while Residential land use, among the various competing urban land uses, is the largest consumer of land in urban areas Nishani (2016).

Furthermore, Cruz (2008) cited in (Nishani, 2016) stated that the population and urbanization increases, demand for housing for both owner-occupancy and rental increases. However, with technological development people pushed into busy lives so that they prefer to buy already built houses. Nishani (2016), further stated that, most of the landlords usually rented by groups such as families, professionals or students, as an alternative to buying or renting smaller spaces. Hence renting is a crucial phenomenon in any economy.

Housing is a booming industry in Nigeria and the research related on the subject is of vital importance. Nishani (2016) states that people prefer to buy already built houses rather than getting built by themselves. The rental housing market is characterized as imperfect and inefficient, because the product is long-lasting, fixed on a given site, heterogeneous, and controlled by extensive governmental regulation. Since each rental housing market is confined to a given area, characteristics of a market in one area are not necessarily an accurate representation of other markets.

According to (Nishani, 2016), these facilities should be available in quantity and quality on reasonable and affordable prices. In land owners' perspective, his ultimate goal is to make a profit with little additional effort. To determine the maximum amount of income can be gained from rent without having any vacancies.

Most probably land lords determine the rent amounts by guessing, or decided arbitrarily or ask charges of comparable adjoining properties due to the absences of a particular guideline. Therefore, Arnott (2003) cited in Nishani (2016), in his paper points out the benefit of rent control for the tenants as a safeguard against landlords. He also stated that rent predictions usually modelled as a function of a bundle of housing characteristics which in terms should be safe. In tenant's perspective, they choose the dwelling that provides the best affordable combination of features. Tenants tend to seek amenities, which fulfil their requirements in order to suit their cost of housing. Those amenities may be, physical features such as location, environment, neighbourhood and other personal preferences or may be characteristics of the building itself such as space, age, condition, layout, kitchen facilities (Nishani, 2016). Lack of knowledge about the order of factors that determined the rental value is one of the major constraints to obtain a maximum yield.

Housing is a multidimensional good differentiated into a bundle of attributes that vary in both quantity and quality. It is the largest single assets of most households and links the value to represent the wealth. The behaviour of house prices, therefore, influences not only business cycle dynamics, but also the performance of the financial system (Nishani, 2016). Similar definition is given where it stated that housing encompasses all the auxiliary services and community facilities, that necessary for the well-being of humanity. According to Nishani (2016), housing should meet four main requirements of who occupy it:

i. It should provide adequate protection from intruders ii. It should be secured from the dangers of fire and structural collapse iii. It should be provided under conditions which promote good health including clean and adequate water supplies and the removal of various kinds of waste (sanitation) iv. It should ensure that residence enjoy the adequate space and privacy.

According to the above descriptions it is obviously stated that house is the fundamental need of a human and housing is the major setting for family life. It should basically provide adequate space for eating, meeting, sleeping and individual activities. Better housing means not only the provision of a physical unit with floor, walls, and roof.

Housing fulfils one of the most fundamental human needs of shelter.

The term rent has several meanings. According to Olalere (2016) rent is regarded as the monthly payment that is made to a landlord, and it is also construed to be a payment to the use of the building. But to the economist point of view rent is the return to the land. Most of the landlords turning to renting out properties as an investment, therefore letting market have been seen as an attractive alternative investment for these looking for a less volatile income source. A number of changes appear to have adversely affected the Rent, Buy decision, such as renting as a cheaper alternative, increasing exposure to other forms of non-housing debt, changing attitude to investment, increased family breakdown, increase a single person household, lower fertility rate.

2.7.1 The Theory of Rent

In order to understand the concept of rent upon which this study is based, knowledge of the theory and concept of rent is necessary. Rent is an important concept in land economic theory. Rental payments have been made for the use of land since the beginning of organized land settlements. These payments represent the economic return that goes to the real estate resources for their use in production (Udoekanem, 2015). In modern times, the genesis of rent has been traced to the rise in individual enterprises, rights and responsibilities as a result of the fall of feudalism. In the days of feudalism, a rent relationship existed between the lord of the manor and his workers. These workers are those who worked on the land of the feudal lords. The rent relationship that existed during the feudal times was in form of quit rents, customary dues paid in money so cage. In the feudal system, so cage is system of land holding, in which every tenant either pay rent or carry out fixed service, usually agricultural and non-military in nature whereas quit rent is a rent in the feudal system paid by a tenant to a feudal lord in exchange for being released from some feudal obligation (Udoekanem, 2015). As a factor of production, classical economists over the years have attempted to analyse the economic concept of land, the role of land in the production process and the nature of land rent. They viewed rent as a price of land and a payment made by a tenant farmer to the landlord for the use of original and indestructible powers of the soil. This analysis was initially based on agricultural production and was gradually extended to other land uses (Udoekanem, 2015).

Rent from landlord could also be viewed as an unearned monopoly return which land owners could claim because of the institution of private property. However, most investors and real property owners, in contrast, see rent as a return on the capital

value of their real estate investments and compare these returns with those they could receive from alternative capital investment.

2.7.2 Alonso's Urban Land Rent Theory

William Alonso extended Von Thunen's theory of land use in his dissertation in 1960.

He argued that land use intensity and rent are a function of distance to the Central Business District of the city. His rent theory was further developed into what is known today as the 'Bid rent theory'. Under the bid rent theory, Alonso argued that households' bid for a particular location is significantly dependent on rent and transportation cost such that as if the transportation cost was higher, then they would pay a lower amount as rent for such location (Udoekanem, 2015).

Alonso's bid rent theory is based on the premise that each land user will out-bid others at certain points and at such point, the highest competing land use becomes predominant. The theory further exposes the variation in rents payable by different users with distance from some point in the market, particularly the Central Business District (CBD). Alonso held the opinion that Von Thunen's model of land rent required considerable modification before it could be applied to residential, commercial and industrial land use analysis. In his Chicago study, the results indicated that household behaved as though they had a combined rent and transportation budget such that if transportation cost were higher, then the amount that they would pay for rent is lower. He concluded that households must commute in order to work in the CBD and that transport costs are the main explanatory factor in the location decisions of households and enterprises (Udoekanem, 2015).

2.7.3 The Basic Concepts of Rent

As an economic return to real property, rent varies in concept and form. Land economists over the years have found it appropriate to differentiate between the three basic concepts of rent. These have been identified in Udoekanem (2015) to include contract rent, land rent and economic rent.

a) Contract Rent

Contract rent refers to the actual payments tenants make for use of the properties of others. The amount of these rental payment is normally agreed by the landlord and tenant in advance of the period of property use and thus emanate from mutual contractual arrangement. Contract rent is also viewed as return on capital value of real estate investments and landlords and property owners normally compare this return with those they could receive from alternative capital investments (Udoekanem, 2015). A contract rent which is fixed by the forces of demand and supply in the property market in the absence of any government interference is known as commercial rent. In the Nigerian property market, market rent is generally synonymous with the meaning ascribed to the term “rent” which is the focus of this study is market rent (Udoekanem, 2015).

b) Land Rent

This is a more specialized concept of rent. As analysed by Barlowe (1986) in Udoekanem (2015), it represents the theoretical earnings of land resources and may be defined simply as the economic return that accrues for or should accrue to land for its use in production. In some societies, a narrower concept of land rent is favoured and in that context, it is referred to as ground rent or site rent, which implies the return associated with building site, bare ground or raw land. This concept of

land rent was introduced into the land system in Nigeria by enactment of the Land Use Decree (now Act) of 1978. Section 10(b) of the Land Use Act binds the holder of the certificate of occupancy issued by the Governor in respect of land, whether or not in an urban area to pay to the governor the rent fixed by the Governor and any rent which may be agreed or fixed on revision in accordance with the provisions of section 16 of the Act. The rent and is payable to the Governor by persons who are holder of certificate of occupancy granted under the provision of the Act. In other words, individuals cannot pay ground rent to individuals for the occupation and use of bare land under the current land system in Nigeria.

Similarly, in the case where the holder of certificate of occupancy has developed buildings on the land, the rent receivable from occupiers of the building would be different from the ground rent payable to the Governor. While the occupiers pay market rent to occupy the buildings, the holder of the certificate of occupancy pays ground rent to the Governor for the grant of the right of occupancy of the building site (Udoekanem, 2015).

c) Economic Rent

Economic rent is also a specialized concept in economics. Economic rent is a surplus or excess over the transfer earnings. The physiocrats laid the foundation for today's concept of economic rent. Physiocracy developed in France in the eighteenth century and the physiocrats were a group of philosophers at that time. They were pre-occupied with the search of the origin of surplus value (Udoekanem, 2015).

Economic rent is now defined as a surplus of income above the minimum supply price it takes to bring a factor into production. It is now treated by most economists

as a shortterm economic surplus that a productive factor or an operator can earn because of unexpected demand or supply conditions. Economic rent may be associated with returns received by capital, labour and entrepreneur. Wages, for example, include an element of economic rent when they exceed the minimum supply price at which workers are willing to sell their services. Also, a real property can earn an economic rent above its normal contract rent when a sudden increase in demand makes it possible for the owner to collect additional contract rent (Udoekanem, 2015).

d) Other Forms of Rent

These are rents which are fixed outside the normal conditions of the property market and as such are not within the scope of this study. They include penal rent. Virtual rent, peppercorn rent, crop rent, profit rent, surface rent, royalty and dead rent. In Nigeria, a penal rent is a rent fixed by a Governor under the provisions of section 19 of the Land Use Act of 1978 to be paid by a holder of certificate of occupancy who has committed a breach of the covenant to effect improvements on the land which is the subject of the certificate of occupancy which he was issued (LUA, 1978). Virtual and sitting rents have the same meaning and are used to designate the equivalent annual cost of property to the occupier in cases where capital has been paid in lieu of, or in addition to rent (Udoekanem, 2015). Peppercorn rent is the reserved rent which a leaseholder pays to the landlord after paying premium at the commencement of the lease in consideration of a reduction in rent throughout the term. Crop rent is associated with agricultural production such that at the end of the cropping season, a certain percentage of the crop harvested is used to pay as rent for the growing of the crops. Profit rent is the difference between the rent received and the rent paid.

Surface rent is the payment in respect of the surface occupied of a mineral-bearing land while certain or dead rent is the minimum rent per annum to be paid irrespective of the amount of mineral extracted (Udoekanem, 2015).

As stated by Adebisi, Ezeokoli, Oletubo and Alade (2015) the types of rent are as follows:

i. Economic Rent

These can also be called surplus rent. Economic rent is the portion of a landlord's income which is attributable to his ownership of land. It is the payment made for the use of land alone.

ii. Virtual Rent

It is defined as the rent paid by the tenant added to the annual equivalent of any capital Sum that pays as premium or improvement.

iii. Scarcity Rent

This is the price paid for the use of homogeneous land when its supply is limited in relation to demand.

iv. Differential Rent

This refers to the rent which arises due to the differences in fertility of land.

v. Contract Rent

The rent agreed between the landlord and the tenant is termed contract rent. This may be verbal or written, contract rent is less or more than economic rent.

vi. Profit Rent

Is defined as the difference that exists between rack rent and head rent under lease of property enjoyed by lessee for capital sum paid for the lease.

vii. Rack Rent

This is the price which the premise is let in an open market at a time under consideration. It is the current open market letting value therefore it is the highest amount which the property can demand in the market (Adebisi et al 2015).

2.7.4 Factors Affecting Rent

Without standardization, each property is considered to be unique and thus is priced differently (Nishani, 2016). Because each piece of property is unique, it is often difficult to identify the appropriate variables that will explain the rental prices. According to Nishani (2016), assessing the rental value of residential properties is a complex and challenging process to both practitioners and academicians because it involves analysing the rental property, neighbourhood characteristics and market conditions. Nishani (2016) further explained that these attributes include physical features such as space, age, condition and apartments. Some features can be measured by objective scale or techniques while other amenities however are not so objective.

Based on the justifications on rental values, recent empirical work has investigated substantial lists of factors that have been employed to explain market rents for residential income property. These factors range from physical attributes to property management quality characteristics. In addition, the literature shows that market rent is affected by deviations of observed vacancy rates from natural vacancy rates and

by such factors as rental concessions and length of residency discounts and also build a model that can provide an accurate way of assessing the rental value of residential rental property and analysing the factors that determine market rents by using an Artificial Intelligence Technique. The model constructs Kim and Nelson (2016) in their research incorporates all variables and these independent variables are organized into four categories as follows;

$$\text{RENT} = f(\text{BC}, \text{LC}, \text{TC}, \text{NC}) \quad (1)$$

Where, BC = Building Characteristics, LC = Landlord Characteristics, TC = Tenant Characteristics, NC = Neighbourhood Characteristics. Building Characteristics are subdivided into building type, size of unit, amenities, and maintenance. Building type includes the number of units in the structure and age of the building. Size of rental unit includes number of rooms, number of baths and number of bed rooms. Size is the total square footage of the building. Landlord characteristics include the investor's age, years of experience and number of properties owned. Tenant characteristics include the head of household age, race and education level. Also included are household income, number of children and length of residence. Neighbourhood characteristics include the tenant's option of the neighbourhood and whether or not crime is perceived to be a problem. Additional variables included are the presence of abandoned buildings and noticeable litter. This application is most applicable in this study, because some tenants included in the sample are sharing amenities and services with land owner.

The rent model is augmented by a group of demand-side characteristics describing the tenant and his household. Kim et al (2016) suggests that tenant preferences and

demographics be taken into consideration when developing a rent model. It shows that tenant's age, income and education level all contribute to higher levels of occupancy turnover, meaning such households are more mobile. They also indicated that minority group status is associated with lower levels of rent, perhaps due to lack of mobility for such households. The model in his paper incorporates all variables found to be significant in past research, as well as other theoretically sound variables. These independent variables are organized into four categories as follows:

RENT = f(BC, LC, TC, NC) (2)

Where BC: Building Characteristics; LC Landlord Characteristics; TC Tenant Characteristics; NC Neighbourhood Characteristics.

Building characteristics are subdivided into building type, size of unit, amenities, and maintenance. Building type includes the number of units in the structure and age of the building. Size of rental unit includes number of rooms, number of baths and number of bedrooms. Amenities include plumbing facilities, kitchen appliances, utilities paid, and central air conditioning. Maintenance includes the presence of exterior leaks and broken windows. Landlord characteristics include the investor's age, years of experience and number of properties owned. However, the database used in his study includes one landlord variable that indicates whether the landlord or his manager lives on the premises.

Determination of rental values According to Tom (2003), many properties are let on terms which require landlord to bear outgoing costs (repairs rate, tax). The net rent paid by tenant may reasonably be expected to obtain in open market value are largely influenced by the evidence he can gather on actual rent paid not for property being

valued but comparable income of neighbourhood. He further examined factors of determining rental values which are:

1. by reference of rent currently being paid.
2. Comparison with similar property.
3. Relating the rent to cost
4. by reference to fixed time of rent (past or current)

2.8 Factors Responsible for Rental Variation

Although, there are some disparities on both the direction and magnitude of impact that certain housing features have on housing values, some of them are very constant in the literature (Anthony, 2012). The location in terms of neighbourhood characteristics and accessibility, the structural characteristics, and the economic factors are the most common determinants of residential property rental values and are discussed below:

2.8.1 Location

The location of land is still considered one of the most important factors in deciding its value (Anushree, 2013). The importance of location manifest in the fact that location physically fixes a property in space and hence determines its remoteness from features such as commercial, transportation and leisure activities (Anthony, 2012). Location is an inherent feature of a property which directly determines the quality and hence the market value of the property. The housing immobility theory is based on location. Anthony (2012) observed that the location effect on residential property value may arise from a number of sources. These are grouped under neighbourhood quality and accessibility.

2.8.1.1 Neighbourhood Quality

Neighbourhood may be defined as a geographic area within which there is high degree of uniform use or similar adjoining parcels. In economic sense, neighbourhood is an area within which relatively the same prices prevail for properties that permit homogeneous uses and socioeconomic status. The neighbourhood quality factors that affect residential property values include

- a. Exposure to adverse environmental factors
- b. Neighbourhood amenities
- c. Neighbourhood security etc.

Depending on the presence or absence of these amenities, residential properties may increase or decrease in value (Olalere, 2016).

2.8.1.2 Accessibility

Stress-free and convenient accessibility within an area will determine property value within such neighbourhood. Such accessibility measures entails property proximity to market, desirable supporting facilities such as transportation facilities, work place, shopping and recreational facilities etc. Generally, locations that afford relatively easy access to various necessary and/or desirable activities boast higher property values than locations that do not possess such easy access, all other things being equal. Accessibility also involves convenience of moving people and goods from one place to the other by overcoming the use of time and cost. Transportation involves cost and how easily and convenient people can have access to place of work, recreational and social services will determine the value to pay for a particular property in any location (Tom, 2003).

2.8.2 Physical Characteristics

Physical characteristics of a property determine its value (Anthony, 2012). These physical characteristics can be grouped as; accommodation and size; structural improvement and materials used; and age and condition of the structure.

2.8.2.1 Accommodation and Size

The size of accommodation offered by a property can influence the value to pay for such property. This includes the number of bedrooms and other rooms, number toilets, floor size, land area, etc. Generally, individual tenants have their own needs, taste and preferences concerning the quantity of accommodation. Such accommodation needs, tastes and preferences are influenced by the size of the family, prestige and status of the individual etc. They therefore restrict their enquiries to properties having the number of rooms that they want. If individuals get the amount and size of accommodation they desire, they will be willing to pay higher value for it than they would pay for property with more or less the amount of accommodation they require.

According to Olalere (2016), the number of rooms (bathrooms, public rooms and bedrooms) dominantly affects price in the positive direction. This means that as the number of rooms increase, the price of the property also increases.

2.8.2.2 Structural Improvement and Materials Used

The materials used in construction of a house and the structural improvement made to the property affect the value of such property. Physical factors such as the type, style and quality of floor finishes, roof, walls, ceilings and so on influence the utility to be derived from living in a particular property and hence the price to pay for such

property. Structural improvements like the availability of garage, swimming pool, gardens, fence wall and so on all affect the value of residential accommodation. Usually, the availability of improvements like swimming pool, garages and gardens in a property influence buyer's decision positively with respect to the price to be paid to acquire such property.

2.8.2.3 Age and Condition of Structure

The age and condition of a property also influence the value of the property. However, the relationship between age and value of property is of inverse nature in Olalere (2016). This is not surprising because as the property ages, the property depreciates and so the utility to be derived from the property diminish, hence its economic value decreases. Moreover, prospective occupier would have to spend extra funds on maintenance when properties are old. They are consequently prepared to pay a price lower than the price of a new property with similar attributes. Aside the age, the condition of the structure also affects the value to pay for the property. If a property is old but has been refurbished, it will command higher value than a comparable property that has not been refurbished.

2.8.3 Economic Factors

Economic factors are factors that influence rental value of a property which are external to the property. The economic factors affecting rental value are basically demand and supply factors.

Generally, demand for residential accommodation is usually high in high populated areas. Usually, a prospective occupier will consider the property in terms of presence of amenities, proximity to service centres, educational and recreational facilities

when there are enough options from which he can choose. However, where demand is more than supply, the bargaining power shifts to the lessor, and the lessee, realizing that he has little or no alternative will have to pay with or without the presence of facilities. (Anthony 2012).

2.9 Review of Previous Related Literatures

A number of research works have been carried out with the objective of investigating the factors determining residential property rental value and consequently the determinants of variation in such values both locally and internationally, among them is the research carried out by (Timothy, David and Gordon, 2003) on modelling spatial variation in housing prices in Florida and discovered that the absolute location of each real estate parcel in an urban housing market has a unique location signature. Accessibility indices, distant gradients and locational dummies cannot fully account for the influence of absolute location on the market price of housing because there are an indeterminable number of externalities (local and nonlocal) influencing a given property at a given location. Furthermore, the degree to which externalities affect real estate values is not only unique at each location but highly variable over space. Hence, absolute location must be viewed as interactive with other determinants of housing value. They went ahead to present an interactive variables approach and test its ability to explain price variations in an urban residential housing market. The statistical evidence suggests that the value of location, as embodied in the selling price of housing units, may not be separable from other determinants of value. They recommended that housing valuation models,

therefore, be specified to allow site, structural and other independent attributes to interact with absolute location: {x, y} coordinates when accounting for intra urban variation in the market price of residential housing. This approach is especially useful when estimating the value of housing for geographic areas where very little is known about the neighbourhoods or submarkets.

Gwamna, Yusoff and Ismail (2015) carried out a research on determinants of land use and property value in Malaysia and came up with the theory that urban land use and property values were once a weak link in economic theory. The authors believed that a lot of research has been done over the years on land use and property value but the basis or foundation of models used for property value analysis has not been illuminated. This has established the nexus between Alonso's Bid Rent theory and the Monocentric City Model. They also reviewed previous research works on the subject area. Their data were obtained through documentary secondary sources. The findings from the review revealed that all the determinant factors of land use and property value revolve around the traditional hedonic postulation of willingness to pay (WTP) for structural, locational and neighbourhood attributes of property. These were based on Alonso's Bid Rent theory and Rosen's Hedonic Price Model reaffirming the link between them. The importance of utility, interest and willingness to pay (WTP) for property attributes will be better appreciated by real estate scholars and professionals.

Julius and Mustapha (2009) in their research to evaluate the effects of available infrastructure on residential property rental values in Akure, Ondo State, Nigeria. They administered well-structured questionnaires on both the tenants of residential property and the practicing estate surveyors in the study area. Data collected through

the questionnaire amongst others include: the types of available infrastructure in the rented apartment, rental value, family size and income of household-heads. Data collected were analysed using multiple regression analysis and the determination of the effects of each of the available infrastructure (water, electricity, access road, kitchen, toilet, refuse disposal facility, wall fence, installed burglary proof, drainage channel, and security services) on the rental value was achieved. Their study revealed that infrastructural facilities are responsible for 30.50% in the determination of rental values of residential buildings in Akure; of which the provision of wall-fence round the building and the installation of burglary proof in all the windows played the most important infrastructure. However, their research did not show whether there is variation in residential property rental value within and across the neighbourhoods of the study area as a result of presence or otherwise of infrastructural facilities.

Ojetunde, Fabunmi, Abdulkareem and Abass (2012) carried out a research on the rent structure of residential properties in relation to their variation across six different neighbourhoods of Minna, Nigeria. In their study, they concentrated on the assessment of the impact of internal aesthetics and their quality on rent variance within the study area.

They adopted Descriptive Statistics, Analysis of Variance test and Multiple Regression Model to examine the rent structure of residential properties particularly flats, tenements and bungalows in the sampled neighbourhood as well as the extent to which these internal aesthetics predicts the variation in residential rents in the study area. They discovered variation in rent distribution across the neighbourhoods. Their study also revealed that internal aesthetics accounted for 16.7% of the total

variation in residential rents in the study area. However, their study only emphasized on the effect of internal aesthetics on rent structure and its variation but did not examine other property characteristics that determine residential property rent and the consequent variation.

Igbinosa (2011) in his study of the determinants of residential property value in Nigeria used two major cities (Benin and Lagos). The author obtained real estate transaction data for the preceding six years (2004-2010) of the study date from registered real estate surveyors and valuers, property agents and developers operating in the study area. A total of 3034 real estate transactions data were collected and the artificial intelligent system was used for data analysis. He discovered a high correlation between property characteristics and the property value. He pointed nine (9) property characteristics to have strong impact on property value and to that extent influence the sales and purchase decision of sellers and buyers in the country. The nine (9) characteristics are: neighbourhood attractiveness; size of land on which the building is erected; the number of bedrooms attached with toilets; the number of bathrooms and toilets; the type of property under consideration (flats, bungalow, tenement, etc.); neighbourhood category (in terms of population density); the year the property is sold or to be sold; the property category (detached, semi-detached, etc.) and the number of units of property being evaluated. However, the study did not specifically revealed whether these property characteristics are responsible for spatial variation in rental values of residential properties in the area.

Ajibola, Olaniyan and Simon (2011) in their study assessed the effect of urban planning on residential property value in Agege, Lagos. Two groups of respondents

were used for the study: the estate surveyors and valuers (29) and resident of the study area and it's environ (140). They examine the variation in residential property value in the study area using both descriptive and inferential statistical tools to analyse data collected through administered questionnaire. The study revealed a significant level of variance in residential property rental value between planned and unplanned residential areas. They further examine the effect of land use planning on residential property rental values and they found that there is a statistically significant relationship between land use planning and residential property value. However, the study did not confirm whether the variation in residential property rental value is solely caused by urban planning or there are other factors that influenced the variation.

Oloke et al (2013) carried out a research on the factors affecting residential property values in Magodo Neighbourhood of Lagos State. They assessed the impact of factors such as location, structural and neighbourhood characteristics. They adopted the arithmetic mean and the relative importance index to analyse data gotten from two groups, the estate surveyors and valuers and the residents of the study area. They found that proximity to highway, number and size of bedrooms, conveniences, good road, drainage and security of the neighbourhood are the leading factors affecting property values. 87% of the respondents felt that location factors determines property values in the neighbourhood; 77% were of the opinion that structural factors affect property values;

68% of the respondents felt that neighbourhood factors affects property values while just 4% of the respondents were of the opinion that travel distance/cost affects property values in the study area. However, the study only assessed the impact of

location and neighbourhood factors on rental value in a single neighbourhood but did not examine the spatial variation in rental values of properties in the study area compared with other neighbourhoods.

Anushree (2013) carried out a research on the determinants of property values in Jaipur

City, India. The author used the hedonic pricing model to explain the value variability in terms of various functional characteristics of the various attributes of property. The research was based on recent property transactions in the study area. She adopted the hedonic model and regression analysis which to calculate the proportion of the total value accounted for by each of a property's individual attributes. The research showed that basic amenities, social infrastructure, development of gardens, housing quality, transportation connectivity, environmental quality, recreational facilities and future price appreciation are the governing factors determining property values in the study area. However, the study did not reveal the determinants of spatial variation in rental values across the neighbourhoods.

Ivy and Ernest (2013) carried out a research on the factors determining residential rental values in Accra Metropolitan Area of Ghana. They specifically explored the effect of location and property characteristics on rental values using data collected for three contrasting neighbourhood in Accra. The authors sampled 100 households proportionately among the areas studied. Both open-ended and close-ended questionnaires as well as oral interviews were used for data collection. Data on the monthly rental value and characteristics of respective apartment (number of bedrooms, availability of bathrooms and toilets facilities, water and electricity supply) were obtained and analysed using two-way contingency table to cross-

tabulate variables to investigate the relationship between the variables. The findings of the study revealed that the effect of location characteristics on residential property rental values is significant statistically. The study further revealed that apartment characteristics: number of bedrooms, availability of toilets and bathrooms, water and electricity supply are statistically significant in determining rental charges on residential properties in the study area. More so, they discovered that sharing of facilities within an apartment also has a significant impact on residential property rental value. However, the study was limited to effect of location and property characteristics on the rental value of properties but did not examine the determinants of spatial variation in the values.

Summarily, various authors and researchers have examined the various factors determining residential rental values and the vast majority discovered that rental values of residential properties are determined basically by three comprehensive property characteristics which are the physical, location and neighbourhood characteristics of the property.

However, few researchers have inquired about the determinants of variation in residential rental values especially spatially. The few that have examined the variation in rental values of residential properties did so based on one or two attributes of residential properties.

For instance, Ojetunde et al (2011) examined variation in rental values on the basis of internal aesthetics. Ajibola et al (2011) also examined rental variation on the basis of land use planning. But enough researches have not being carried out on the determinants of variation in residential rental values holistically. In other words, the gap in knowledge seems to be the determinants of spatial variation in rental values

on the basis of the various factors determining rental value itself (i.e. physical, location and neighbourhood characteristics).

Kim et al (2016) carried out a study on Assessing the Rental Value of Residential Properties: An Abductive Learning Networks Approach examined various models used in determining rental value thereby adopting an ALN model to avoid errors. He attempts to estimate rental value of residential properties using Abductive Learning Networks (ALN), an artificial intelligence technique. The results indicate that the ALN model provides an accurate estimation of rents with only seven input variables, while other multivariate statistical techniques do not. The ALN model automatically selects the best network structure, node types and coefficients, and therefore it simplifies the maintenance of the model. Once the final model is synthesized, the ALN model becomes very compact, rapidly executable and cost-effective.

Nishani (2016) carried out a research on determinants of rental value for residential properties: A land owner's perspective for boarding homes in Malaysia. The study focused on housing as the most representative land use in any urban area. At present renting of houses instead of buying is a significant phenomenon in the housing market. The ultimate goal of owning a rental property is to make profits with little additional effort. With the absence of a guideline, land owners arbitrary evaluate the property and charges unaffordable values. Since there is no alternative, depending on the need, tenant has to accept it. On the other hand, as each piece of property is unique, it is difficult to fix a rent. This becomes worse in boarding homes. With this background the focus of this paper is on developing an index as a guideline to determine the rental value in housing market. The case study specifies the renting

based on higher education institute. Hence three types of renting units such as bed, room and annex selected. The data collection was completed through a structured questionnaire. The significant of each variable is evaluated through a multiple regression model. The findings categorized into levels on the basis of the coefficient values. The results indicate that distance to main junction is the most significant variable in the three types of properties.

Olalere (2016) opined that it has been established by various authors and scholars that variation exists in residential property rental values. He examined the determinants of spatial variation in residential property rental values in Minna, Nigeria. He also reviewed various literatures and identified knowledge gaps. The study distributed a total of 380 questionnaires to the occupants of tenanted residential properties in the study area proportionately by neighbourhoods. 274 questionnaires were completely filled and retrieved and subsequently used his analysis. Analysis of Variance was used to determine the variation in rental values and the Relative Importance Index was used to rank the factors influencing tenants' choice of accommodation across the various neighbourhoods of the study area. Spearman's Rank Order correlation analysis was also used to examine the relationship between the neighbourhoods with respect to the factors influencing tenants' choice of accommodation. The study revealed that there exist a statistically significant variation in rental values of tenements, one-bedroom flats, two-bedroom flats and three-bedroom flats across the 21 neighbourhoods understudy. The study also revealed that factors like condition of the building, size of the building, number of bedrooms, number of toilets and bathrooms, quality of neighbourhood, direct access to tarred road, and presence of tertiary institution, banks and public offices are the

dominant factors influencing tenant's choice of accommodation and consequently responsible for variation in residential rental values in the study area.

Olorunyomi (2018) carried out a research on Comparative Analysis of Rental Variation of Residential and Commercial Properties in Jos. Several Ethno-religious conflicts in Jos have caused a shift in population and businesses polarising the city into predominantly Christians in Jos South and Muslims in Jos North. This dynamics created a loop on the best type and suitable location for property investment without an expert's advice. The study comparatively analysed the rental variation in residential and commercial properties in Jos for the period 2007 to 2017. He adopted Stratified and random sampling techniques; resulting in the selection of eight (8) residential neighbourhoods out of the forty five (45) residential neighbourhoods and two (2) commercial hubs in the two Local Government Areas that made up Jos. He adopted a sample size of 367 tenants of both commercial and residential properties; and a total of 20 real estate firms were sampled. Rental values for the study period were collected from practicing Estate Surveyors & Valuers in Jos while structured questionnaires were administered to tenants. He used Descriptive and inferential statistical tools such as Co-efficient of Variation, ANOVA and Regression in analysing data. The study revealed the rental values of residential properties in Jos South performed better than that of Jos North. He also revealed that there is a statistical significant difference in the rental variation of both residential and commercial properties in the study area, with $F(11, 168)$ and $F(9, 72)$ respectively.

Betasha (2019) carried out a research on assessment of residential property rental value variations in peri-urban areas of Minna, Niger State. The researcher gathered

data and information through the use of structured questionnaires in which 157 were administered and 136 retrieved from the tenants in the study areas for the research objectives to be achieved. The population projection formula was used by the researcher to project the previous existing population after that, the simple sampling technique was also adopted to determine the sample size. Data collected for the study was analysed using the descriptive and inferential statistics. One sample test inferential statistics was used to get the statically significant difference in rental values in the peri-urban areas. The data collected was for the period of ten years (2009-2018).

2.10 The Gap in Knowledge

Findings from all previous empirical studies which have been reviewed suggest that different factors and determinants are responsible for variation in rental values. For instance, Ojetunde et al (2011) examined variation in rental values on the basis of internal aesthetics while Ajibola et al (2011) also examined rental variation on the basis of land use planning. Betasha (2019) carried out a research on assessment of residential property rental value variations in peri- urban areas of Minna, but enough researches have not being carried out on the determinants of variation in residential rental values holistically.

In other words, the gap in knowledge for this study is assessing factors that causes variation in rental values on the basis of determining factors affecting rental value itself

(i.e. physical, location and neighbourhood characteristics).

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Nature of Data Required for the Study

This study utilized both primary and the secondary sources of data. The primary data for the study comprise of rental data of residential properties in the study area across the neighbourhoods. These include annual data on rental trends for residential

properties under study for the period 2011-2020 and their specific characteristics, the rental growth rate and factors that causes variations in rental values and tenants' choice of residential accommodation. Secondary data for the study are mainly data on population figures from National Population Census (NPC), household figures from National Bureau of Statistics (NBS), published journals, textbooks, seminar papers and unpublished research works such as student's project and thesis.

3.2 Population and Sample Frame for the Study

The target population for this study consists of residential properties in Minna metropolis which are strictly for the purpose of investment and can generate income to the property owner in form of rent and are said to have income- earning potential or rent, tenants of residential properties and all firms of registered Estate Surveyors and Valuers in Minna that manages residential properties.

The number of registered Estate Surveyors and Valuers firm was obtained from the directory of Estate Surveyors and Valuers Registration Board of Nigeria (ESVABON) register.

Furthermore, based on the aim of this study, only residential investment properties were selected for the data collection for the study as they constitute the class of properties which rents are paid to occupy them and such rents undergo changes in form of rental adjustments or rental change.

Table 3.1: Neighbourhood and Number of Residential Properties in the Study Area

S/N	Neighbourhood	Number of rented residential properties
1.	Bosso Town	4,132

2.	Shango	612
3.	Sauka Kahuta	403
4.	Kpakungu	1,675
5.	Tudun Fulani	479
6.	Chanchaga	2,189
7.	Bosso Estate	477
8.	Tayi Village	134
9.	Tunga	614
10.	Maitumbi	1,673
11.	F-Layout	622
12.	Fadikpe	398
13.	GRA	401
14.	Dutsen Kura	622
15.	Jikpan	622
	Total	15,053

Source: Researcher's Field Data (2022).

3.3 Sampling Technique and Sample Size

Primary data for the study were collected through field survey. These stages included selection of Estate Surveying and Valuation firms involved in the management of residential properties, selection of tenants of residential property type such as two

bedroom and three bedroom flats for data collection. Purposive sampling technique was used in selecting estate surveying and valuation firms in Minna. This sampling technique was used due to fact that tenants staying in their respective residential properties may not give an accurate rental values. The number of registered firms of Estate Surveyors and Valuers in Minna is 12, the figure was obtained through the information provided in the current Directory of the Nigerian institution of Estate Surveyors and Valuers. Thus, all the 12 registered firms of Estate surveyors and Valuers involved in residential property management were selected for data collection. In selecting residential properties used for this study, the study area was delineated into sections. These sections were identified as the two bedroom and three bedroom flats for rental purpose. A total of fifteen neighbourhoods were selected which constitutes the neighbourhood with high demand for two and three bedrooms. Thus, a total of 250 residential properties across the 15 neighbourhoods in Minna were selected for the study. Research instrument used in data collection for the study were based on this sample size.

This is the aggregation of the sampled elements drawn from the entire population of the study. For this research, the sample size comprises 250 rented residential properties selected from the 15 neighbourhoods of the study area. This is arrived at by adopting the Smith and Strattek (2010) Sample size formula.

$$n = \frac{Z^2 \times \delta^2 \left(\frac{N}{n} + 1 \right)}{ME^2}$$

Where: n = sample size

δ = Standard Deviation put at 0.5 (depicting a safe decision enhancing large enough samples)

Z = standardized normal value for 95% confidence level which is 1.96

ME = Margin of error put at $\pm 5\%$

N = Number of residential properties in the study area estimated at 15,053.

Therefore, the sample size for the study is 250 rented residential properties. The distribution of the questionnaire across the neighbourhoods is presented.

Table 3.2: Number of Rented Residential Properties with required Data Sampled

S/No	Neighbourhood	Number of rented residential properties	Number of questionnaire administered in each neighbourhood
1	Bosso town	4,132	30
2	Shango	612	15
3	Sauka Kahuta	403	15
4	Kpakungu	1,675	30
5	Minna central	479	30
6	Chanchaga	2,189	10
7	Bosso estate	477	15
8	Tayi village	134	10
9	Tunga	614	10
10	Maitumbi	1,673	20
11	F-layout	622	20
12	Fadikpe	398	10
13	GRA	401	10
14	Dutsen Kura	622	10
15	Jikpan	622	15
	Total	15,053	250

Source: Researcher's Computation (2022)

3.4 Methods of Data Collection

Data for this study were collected through questionnaires and interviews. Structured questionnaire was designed for this study. The questionnaire was designed specifically to obtain property data and was completed by Estate Surveying and Valuation firms. The firms have a comprehensive data on residential property rents in the study areas for the period, 2011-2020. Tenants of the residential property in the study area were used to obtain the factors responsible for their choice of accommodation. These data are the annual rents for 2 bedroom and 3 bedroom flats in each year throughout the study period for the 15 neighbourhoods in the study area. Interviews were held with the tenants and also the Estate Surveyors and Valuers managing residential properties in the study area.

3.5 Methods of Data Analysis

Statistical techniques which are appropriate for the study were used for data analysis. These techniques are discussed as follows based on the objectives of the study:

Objective 1: Examine the Rental Trends in Residential Property Rental Value in Minna from 2011-2020.

Data required for analysis to achieve this objective include annual data on rental values for residential properties of 2 bedroom and 3 bedroom for the period 2011-2020.

The average rental values collected for the period and the type of property from Estate Surveying and Valuation firms calculated as:

$$X = \frac{\sum x}{n}$$

Where: X = Mean of the average annual rental value

x = Rent

n = Number of properties

Objective 2: Analyse the Rental Variation in Residential Property in Minna

To achieve this objective, data required for the analysis include annual data on rental values. This was utilised to obtain the level of rental variation. Annual Rental Growth

Rate Analysis of residential properties under study was established for the period 2011 to

2020. This was used to determine the annual change in rent of each property types in the selected neighbourhoods. It is obtained by expressing the ratio of the variation in rental value of the present year and the preceding year to the rental value of the preceding year expressed as a percentage. Given as:

$$r = \frac{a_b - a_{b-1}}{a_{b-1}} \times 100$$

Where: r = Rental Growth rate

a_b = Rent of the current

year a_{b-1} = Rent of

preceding year.

The geometric mean was adopted to determining the average growth rate for rents in all selected neighbourhoods over the study period calculated as;

$$G = \sqrt[n]{(1 + g) \times (1 + g) \times (1 + g) \times (1 + g) \times \dots \times (1 + g) - 1}$$

Where: G = Geometric mean

g = Growth rate for rent

n = Period

Standard Deviation was used to check the level of variation of rental values of properties in the study area. Thus, it is represented mathematically as:

$$\beta = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}}$$

Where: β = Standard Deviation x = Rent commanded by properties in each neighbourhood

\bar{x} = Mean rent commanded by properties in each neighbourhood

N = Period

Objective 3: Evaluate Factors Responsible for Rental Variation in Residential Property Values in Minna.

To achieve this objective, data required for analysis include factors that causes variation in rental values and simple descriptive statistics that is relative importance index (RII) was used in achieving the objective.

Objective 4: Assess Factors Influencing Accommodation Choice of Tenants across the Neighbourhoods of Minna

Data required for the analysis include data on factors influencing choice of accommodation from the tenants' perspective. Simple Descriptive Statistics Analysis was used in achieving the objective.

The summary of the nature of data analysis required for the study and statistical techniques appropriate for data analysis for the objectives of study and data required for analysis to achieve these objectives are presented in Table 3.3

Table 3.3: Data Required and Source of Data for the Study

S/N	Research objectives	Data required	Data source
1	Establish trends in rental values in residential property in minna from 2011 to 2020	Data on annual rental value	Questionnaire
2	Analyse rental variation in residential property in minna	Data on rental variation and rental growth rate	Questionnaire.
3	Evaluate the factors responsible for rental variation.	Data on factors that causes variation	Questionnaire.
4	Assess factors influencing accommodation choices of tenants across the various neighbourhood of minna.	Data on factors that influence choice of accommodation of tenants	Questionnaire

Source: Researcher's Computation (2022).

Table 3.4: Summary of Data Analysis Techniques

	Formulated Objectives	Data Analysis Techniques Used
Objective One	Examine rental trends in residential property in minna from 2011 to 2020	Rental growth rate analysis and geometric mean were used to achieve the objective.
Objective Two	Analyse the rental variation in residential property value in Minna	Standard Deviation and Coefficient of Variance were used in achieving the objective.
Objective Three	Evaluate the factors responsible for rental variation in residential property value in minna	Relative importance index (RII) were adopted in achieving the objective.
Objective Four	Assess the factors influencing accommodation choice of tenants across the neighbourhood in Minna.	Simple Descriptive Statistics were adopted in achieving the objective.

Source: Researcher's Computation (2022).

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Trend in rental Values of Residential Properties in the Study Area 2011-2020

The data utilized was retrieved explicitly from registered practicing Estate Surveying and Valuation firms managing residential properties in the study area through the use of questionnaire. The retrieved rental value for residential properties is measured in Naira (N.p.a.). The rental trend of residential properties in Minna was determined by finding the mean of rental values obtained from the study area using the arithmetic mean model as discussed in the previous chapter.

The rental trend of residential properties comprising of both two-bedrooms and threebedrooms flat for Minna were summarized by finding the average of the rental values of

rents provided by Estate Surveyors and Valuers as analysed in Appendix F₁ to G₈ to obtain a mean rental value which is presented in table 4.1

Residential property rents increased progressively in the study area during this period. In Minna, the fifteen neighbourhoods under study showed a significant increase in the rents for the period of study.

Table 4.1: Mean Rental Level of Two-Bedroom Flats in Minna

Location/Neighbourhood	Rental value in ₦' 000									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bosso Town	101,000	101,000	101,000	105,000	108,000	119,000	126,000	129,000	139,000	152,000
Shango	99,000	99,000	101,000	105,000	114,000	121,000	126,000	134,000	141,000	149,000
Sauka Kahuta	96,500	97,500	97,000	105,000	114,000	114,000	123,000	132,000	140,000	144,000
Kpakungu	103,000	103,000	103,000	109,000	116,000	118,000	126,000	135,000	146,000	152,000
Tudun Fulani	91,000	94,000	94,000	96,000	109,000	113,000	119,000	121,000	131,000	142,000
Chanchaga	98,000	100,000	100,000	101,000	108,500	114,500	113,500	124,500	132,000	141,000
Bosso Estate	172,000	172,000	187,000	192,000	204,000	211,000	223,000	223,000	248,000	253,000
Tayi Village	97,000	97,000	104,000	108,000	110,000	116,000	125,000	130,000	133,000	146,000
Tunga	161,000	165,000	170,000	180,000	198,000	208,000	218,000	233,000	233,000	240,000
Maitumbi	97,000	103,000	103,000	109,000	121,000	121,000	128,000	135,000	144,000	152,000
F-Layout	156,000	156,000	156,000	177,000	185,000	185,000	213,000	227,000	232,000	257,000
Fadikpe	116,000	118,000	118,000	144,000	149,000	152,000	180,000	193,000	195,000	218,000
GRA	193,000	198,000	200,000	221,000	235,000	245,000	257,000	280,000	285,000	290,000
Dutsen Kura	134,000	134,000	151,000	164,000	175,000	175,000	189,000	198,000	198,000	202,000
Jikpan	154,000	159,000	161,000	171,000	177,000	177,000	211,000	215,000	218,000	218,000
Mean	124,567	126,433	129,733	139,133	148,233	152,633	165,167	173,967	181,000	190,400

Source: Researcher's Computation (2022) from Data in Appendix F₁ to F₁₅

Table 4.1 shows the average annual rental value of two-bedroom flat in the 15 neighbourhoods of Minna from 2011 to 2020. It revealed that the average annual rental value of two-bedroom flat in Minna for year 2011 ranged from ₦91,000 to ₦156,000 with a mean rental value of ₦124,567 per annum, 2012 ranged from ₦94,000 to ₦198,700 with a mean rental value of ₦126,433 per annum, 2013 has a range from ₦194, 000 to ₦200,000 with a mean rental value of ₦129,733. In the year 2014, the rent ranged from ₦96,000 to ₦221,000 with a mean rental value of ₦139,133. This implies that there have been steady increments of rent in Minna considering the Mean Rental Values of each year generated from the various rent of individual neighbourhoods between 2011 and 2020.

Table 4.2: Mean Rental Level of Three-Bedroom Flats in Minna

Location/Neighbourhood	Rental value in ₦' 000									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bosso Town	148,000	150,000	154,000	158,000	169,000	169,000	191,000	211,000	216,000	225,000
Shango	128,000	130,000	132,000	138,000	156,000	162,000	168,000	194,000	204,000	210,000
Sauka Kahuta	134,000	138,000	142,000	148,000	157,000	161,000	171,000	190,000	190,000	214,000
Kpakungu	145,000	147,000	147,000	158,000	162,000	168,000	189,000	191,000	210,000	213,000
Tudun Fulani	126,000	131,000	134,000	152,000	157,000	159,000	181,000	183,000	199,000	215,000
Chanchaga	119,000	119,000	121,000	132,000	135,000	144,000	159,000	161,000	163,000	175,000
Bosso Estate	232,000	232,000	237,000	250,000	258,000	275,000	291,000	296,000	306,000	315,000
Tayi Village	139,000	145,000	145,000	153,000	156,000	156,000	177,000	183,000	183,000	192,000
Tunga	217,000	219,000	224,000	235,000	250,000	255,000	280,000	295,000	305,000	321,000
Maitumbi	139,000	140,000	146,000	155,000	157,000	162,000	178,000	183,000	185,000	194,000
F-Layout	219,000	219,000	225,000	241,000	249,000	246,000	265,000	270,000	285,000	296,000
Fadikpe	157,000	159,000	162,000	170,000	174,000	180,000	192,000	197,000	201,000	209,000
GRA	275,000	275,000	287,000	292,000	297,000	325,000	330,000	370,000	380,000	385,000
Dutsen Kura	191,000	191,000	198,000	207,000	209,000	218,000	232,000	241,000	247,000	254,000
Jikpan	218,000	230,000	224,000	245,000	263,000	266,000	278,000	282,000	302,000	310,000
Mean	172,467	175,000	178,533	188,933	196,600	203,067	218,800	229,800	238,400	248,533

Source: Researcher's Computation (2022) from Data in Appendix G₁ to G₁₅

Table 4.2 shows the average annual rental value of three-bedroom flat in the 15 neighbourhoods of Minna from 2011 to 2020. It revealed that the average annual rental value of three-bedroom flat in in Minna for year 2011 ranged from ₦119,000 to ₦232,000 with a mean rental value of ₦172,467 per annum, 2012 ranged from ₦130,000 to ₦232,000 with a mean rental value of ₦175,000 per annum. This implies that there have been steady increments of rent in Minna considering the Mean Rental Values of each year generated from the various rent of individual neighbourhoods between 2011 and 2020.

4.1.1 Rental Growth Rate of Residential Properties

The rental growth rate of residential properties in Minna is obtained from table 4.1 to 4.2 using the rental growth rate formula as discussed in the previous chapter and presented in table 4.3.

Table 4.3: Annual Rental Growth Rate of Two-Bedroom Flats in Minna in %

Location/Neighbourhood	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bosso Town	0.00	0.00	0.00	3.96	2.86	10.19	5.88	2.38	7.75	9.35
Shango	0.00	0.00	2.02	1.03	8.57	6.14	4.13	6.35	5.22	5.64
Sauka Kahuta	0.00	1.04	-0.51	8.25	8.57	0.00	7.89	7.32	8.00	2.86
Kpakungu	0.00	0.00	0.00	5.83	6.42	1.72	6.78	7.14	8.15	4.11
Tudun Fulani	0.00	3.29	0.00	2.13	13.54	3.67	5.31	1.68	8.26	8.39
Chanchaga	0.00	2.04	0.00	1.00	6.93	5.53	-0.88	9.69	6.02	6.82
Bosso Estate	0.00	0.00	8.72	2.67	6.26	3.43	5.69	0.00	11.21	2.02
Tayi Village	0.00	0.00	7.22	3.85	1.85	5.45	7.76	4.00	2.31	9.77
Tunga	0.00	2.48	3.03	5.88	10.00	5.05	4.81	6.88	0.00	3.00
Maitumbi	0.00	6.19	0.00	5.83	11.01	0.00	5.79	5.47	6.67	5.56
F-Layout	0.00	0.00	0.00	13.46	4.52	0.00	15.14	6.57	2.20	10.78
Fadikpe	0.00	1.72	0.00	22.03	3.47	2.01	18.42	7.22	1.03	11.79
GRA	0.00	2.59	1.01	10.50	6.33	4.26	4.89	8.95	1.78	1.75
Dutsen Kura	0.00	0.00	12.69	8.61	6.71	0.00	8.00	4.76	0.00	2.02
Jikpan	0.00	3.25	1.26	6.21	3.51	0.00	19.21	1.89	1.39	0.00
Mean	0.00	1.51	2.36	6.70	6.70	3.16	7.92	5.35	6.67	5.55

Source: Researcher's Computation (2022) from Table 4.1

Table 4.3 shows the annual rental growth rate for two-bedrooms in Minna. It revealed that there is fluctuations in the rental growth for all the neighbourhoods within the period of study. It also showed the highest point in the rental growth rates of two-bedroom flat in these neighbourhoods within the period of study with Maitumbi having 6.19% in 2012, Dutsen Kura having 12.69% in 2013, Fadikpe having 22.03% in 2014, Tudun Fulani with 13.54% in 2015, Bosso town marked 10.19% growth rate in 2016, in 2017 Fadikpe experienced rental growth of 18.42% while chanchaga is having a negative growth. Finally, it revealed that rental value for two-bedroom flat in Minna grew faster in 2017 with a mean rental growth of 7.92% which show the highest between 2011 and 2020.

Table 4.4: Annual Rental Growth Rate of Three-Bedroom Flats in Minna in %

Location/Neighbourhood	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bosso Town	0.00	1.35	2.67	2.59	6.96	0.00	13.02	10.47	2.37	4.17
Shango	0.00	1.56	1.54	4.55	13.04	3.85	3.70	15.48	5.15	2.94
Sauka Kahuta	0.00	2.99	2.89	4.23	6.08	2.55	6.21	11.11	0.00	12.63
Kpakungu	0.00	1.38	0.00	7.48	2.53	3.70	12.5	1.06	9.95	1.43
Tudun Fulani	0.00	3.97	2.29	13.43	3.29	1.27	13.84	1.10	9.95	8.04
Chanchaga	0.00	0.00	1.68	9.09	2.27	6.67	10.42	1.28	1.24	7.36
Bosso Estate	0.00	0.00	2.16	5.49	3.20	-0.39	5.82	1.72	3.38	2.94
Tayi Village	0.00	4.32	0.00	5.52	1.96	0.00	13.46	3.38	0.00	4.92
Tunga	0.00	0.92	2.28	4.91	6.38	2.00	9.80	5.36	3.39	5.25
Maitumbi	0.00	0.72	4.29	6.16	1.29	3.18	9.88	2.81	1.09	4.86
F-Layout	0.00	0.00	2.74	7.11	3.32	-1.20	7.72	1.89	5.55	3.86
Fadikpe	0.00	1.27	1.89	4.94	2.35	3.45	6.67	2.60	2.03	3.98
GRA	0.00	0.00	4.36	1.74	1.71	9.43	1.54	12.12	2.70	1.32
Dutsen Kura	0.00	0.00	3.66	4.55	0.97	4.31	6.42	3.88	2.49	2.83
Jikpan	0.00	5.51	2.61	9.38	7.35	1.14	4.51	1.44	7.09	2.65
Growth rate	0.00	1.59	1.98	6.08	4.18	2.66	8.37	5.05	3.76	4.61

Source: Researcher's Computation (2022) from Table 4.2

Table 4.4 shows the annual rental growth rate for three-bedrooms in Minna. It revealed that there is fluctuations in the rental growth for all the neighbourhoods within year of study. It also showed the highest point in the rental growth rates of three-bedroom flat in these neighbourhoods within the period of study with Jikpan having 5.51% in 2011, GRA having 4.36% in 2012.

Finally, it revealed that rental value for three-bedroom flat in Minna grew faster in 2017 with a mean rental growth of 8.37% which show the highest between 2011 and 2020.

Table 4.5: Mean Rental Growth Rate of Residential Properties in Minna (2011-2020)

S/N	Year	Type of Residential Property	
		2-bedroom flat	3-bedroom flat
1	2011	0.00%	0.00%
2	2012	1.51%	1.59%
3	2013	2.36%	1.99%
4	2014	6.75%	6.08%
5	2015	6.70%	4.18%
6	2016	3.16%	2.66%
7	2017	7.92%	8.36%
8	2018	5.35%	5.05%
9	2019	4.67%	3.76%
10	2020	5.59%	4.61%

Source: Researchers computation (2022) Summarized from Table 4.1 to 4.4

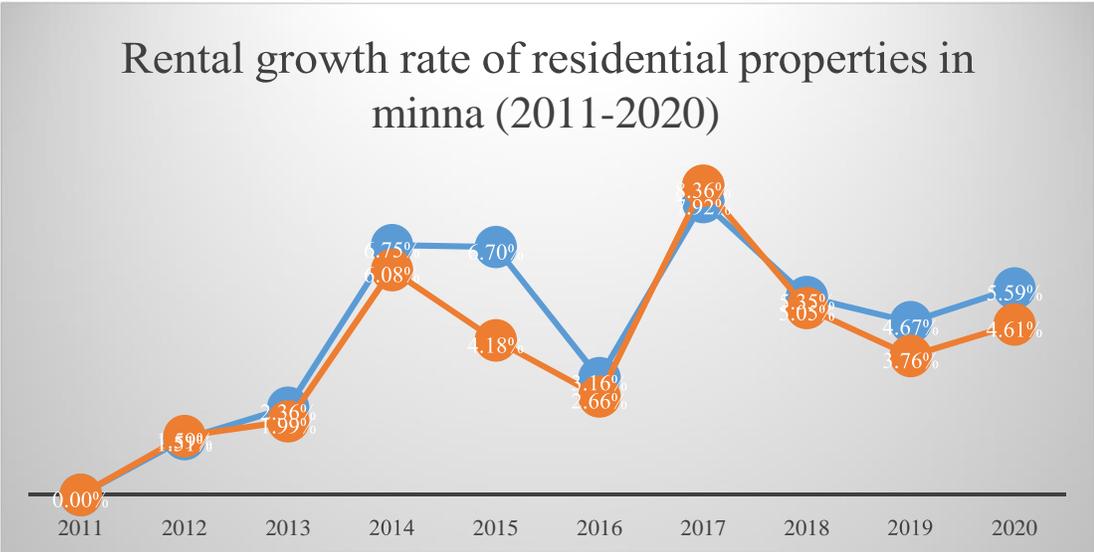


Figure 4.1: Graphical presentation of Rental growth rate

Source: Researchers' computation (2022).

Table 4.5 and figure 4.1 presents the rental growth rate of two bedroom and three bedroom residential property in Minna for the study period (2011-2020). For the year 2011, there was no growth. For the year 2012, the growth rate was 1.5% and 1.59% for two bedroom and three bedrooms respectively. For the year 2014, there was an increase in rent which indicated the growth to be 6.75% and 6.08% for the two bedroom and three bedrooms respectively. The trend as presented showed that in the year 2020, the rental growth is put at 5.59% and 4.61% for the two bedroom and three bedroom flats.

In summary, the study area witnessed a high rental growth rate in 2017 at 7.92% and 8.36% for two bedroom and three bedroom flats respectively. This growth rate was

due to high demand for residential accommodation across the neighbourhood and low supply of residential accommodation within the period of study.

4.2 Analysis of Rental Variation in Residential Property Values in Minna

The analysis of rental growth rate implies that there is a significant change in the rental value of residential property across the neighbourhood within the study area. The level of variation is therefore analysed in Table 4.6 using standard deviation to obtain the level of variation.

Table 4.6: Variation in Annual Rental Value of Two-Bedroom Flat in Minna

Location	Sum	Mean	Std. Dev.	Co-efficient of Variation.
Bosso Town	1,181,000	118100	28823.21595	24.4058
Shango	1,189,000	118900	17912.59644	15.0653
Sauka Kahuta	1,163,000	116300	17467.82757	15.0196
Kpakungu	1,211,000	121100	18003.08616	14.8663
Tudun Fulani	1,110,000	111000	16924.6697	23.2475
Chanchaga	1,133,000	113300	14773.2867	13.0391
Bosso Estate	2,085,000	208500	27171.2675	13.0318
Tayi Village	1,166,000	116600	15817.53598	13.5656
Tunga	2,006,000	200600	28438.5302	14.1767
Maitumbi	1,213,000	121300	17485.70845	14.4153
F-Layout	1,944,000	194400	35365.94407	18.1924
Fadikpe	1,583,000	158300	35295.18381	22.2964
GRA	2,404,000	240400	36178.1182	14.6332
Dutsen Kura	1,720,000	172000	23311.89491	13.5534

Jikpan	1,861,000	186100	25332.78508	13.6125
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Source: Researcher's Analysis of Field Data (2022).

Table 4.6 as presented shows the variation in rental value of two-bedroom flat in Minna showing the sum, mean, standard deviation and co-efficient of variation of rental value of residential properties across the neighbourhoods. The sum and mean of the average annual rental value of two-bedroom flat in the sampled neighbourhoods in Minna with

GRA having the highest sum of ₦2,404,000 and a mean of ₦204,400 while Tudun Fulani has the least sum of ₦ 1,110,000 and mean of ₦111,000 respectively. This implies that

GRA is the most expensive neighbourhood for two-bedroom flat in Minna while Tudun Fulani is the least. The table also revealed that GRA has the highest standard deviation of ₦36,178.1182 while Tudun Fulani has the highest co-efficient of variation of 23.24% which implies that rents for two-bedroom flat in GRA more volatile and change rapidly than any other neighbourhood in Minna but Tudun Fulani has the highest risk on rental income of two-bedroom flats in Minna.

Table 4.7: Variation in Annual Rental Value of Three-Bedroom Flat in Minna

Location	Sum	Mean	Std. Deviation	Co-efficient of Variation.
Bosso Town	1,791,000	179100	28823.21595	16.0934
Shango	1,622,000	162200	30659.41943	18.9022
Sauka Kahuta	1,645,000	164500	25590.25422	15.5564
Kpakungu	1,730,000	173000	25458.02646	14.7156
Tudun Fulani	1,637,000	163700	28607.01157	17.4753
Chanchaga	1,428,000	142800	19988.19096	13.9973
Bosso Estate	2,692,000	269200	30495.90136	11.3283
Tayi Village	1,629,000	162900	18111.53715	11.1182
Tunga	2,601,000	260100	36883.0735	14.1803
Maitumbi	1,639,000	163900	18934.09623	11.5522
F-Layout	2,515,000	251500	26016.55456	10.3446
Fadikpe	1,801,000	180100	17860.5711	9.91703
GRA	3,216,000	321600	42519.92997	13.2214
Dutsen Kura	2,188,000	218800	22519.12767	10.2921
Jikpan	2,618,000	261800	29870.55406	11.4097

Source: Researcher's Analysis of Field Data (2022)

Table 4.7 as presented shows the variation in rental value of three-bedroom flat in Minna showing the sum, mean, standard deviation and co-efficient of variation of rental value of residential properties. The table shows the sum and mean of the average annual rental value of two-bedroom flat in the sampled neighbourhoods in Minna with GRA having the highest sum of ₦3,216,000 and a mean of ₦321,600

while Chanchaga has the least sum of ₦ 1,428,000 and mean of ₦142,800 respectively. This implies that GRA is the most expensive neighbourhood for three-bedroom flat in Minna while Chanchaga is the least. The table also revealed that GRA has the highest standard deviation of ₦42,519.9299 while Bosso Town has the highest co-efficient of variation of 16.09% which implies that rents for three-bedroom flat in GRA change rapidly.

4.3 Factors Responsible for Rental Variation

Table 4.8: Physical and Structural Factors Affecting Rental Value

S/N	Factors	Weight					Total	RII
		5	4	3	2	1		
1	Number and Size of 3.954 bedrooms	75	52	34	20	4	185	
2	Age of the building 4.085	76	53	28	23	5	185	
3	Number of toilet and 4.300 bathroom	95	40	18	26	6	185	
4	Availability of security 4.138 personnel	84	42	36	19	4	185	
5	Size of land and building 3.915	55	60	25	18	1	185	
6	Availability of 4.0 recreational facility	40	36	43	28	38	185	2.885

Source: Researchers field survey (2022).

Analysis of structural factors affecting residential property rental values showed that the number of toilets and bathroom indicated by a relative importance index of 4.300 on the RII scale is the most important factor affecting value. This is closely followed by the Age of the building a RII of 4.085 as well as the size of land and building with a RII of 3.954.

Moreover, availability of security personnel and recreational facility has the minimum RII of 3.915 and 2.885 respectively meaning they have less influence on residential property value in the study area.

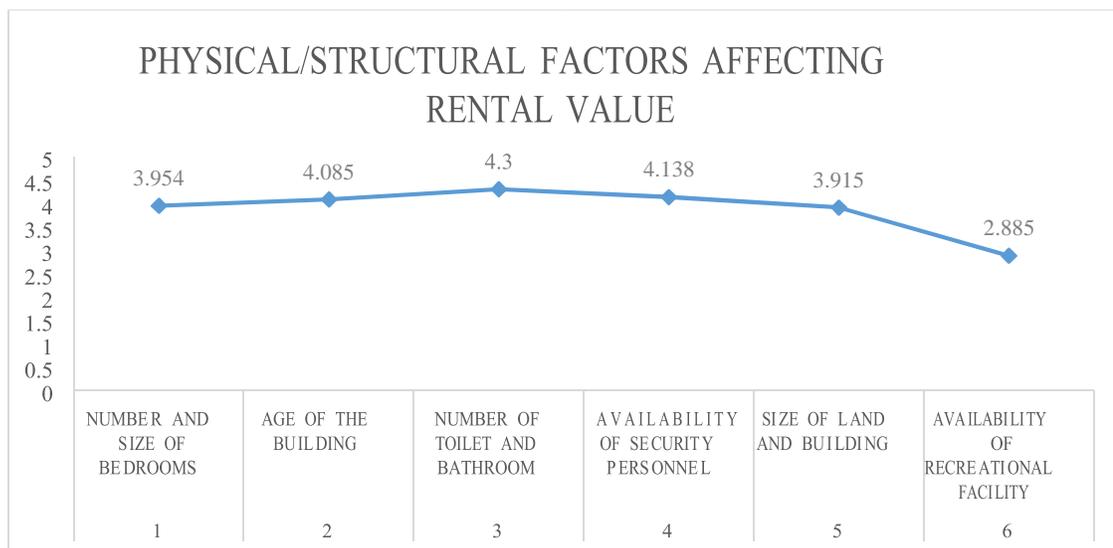


Figure 4.2: Physical/Structural Factors Affecting Rental Values Source: Researchers' Computation (2022).

Table 4.9: Locational Factors Affecting Rental Values

S/N	Factors	Weight	Total	RII
		5 4 3 2 1		

1	Proximity to Hospital 3.954	85	60	40	0	0	185
2	Proximity to stadium and 4.085 park	70	58	38	14	5	185
3	Nearness to school 4.300	55	46	44	28	12	185
4	Proximity to shopping 4.138 centres	55	52	33	29	16	185
5	Proximity to banks 3.915	40	64	48	14	19	185
6	Proximity to worship centres 185 2.885	75	44	27	24	15	
7	Proximity to place of work 185 3.331	60	46	33	28	18	

Source: Researchers field Survey, 2022.

The analysis showed that proximity or nearness to school whether tertiary or secondary rank highest among the listed locational factors affecting property value. This is closely followed by nearness to shopping centres and markets while nearness to the banks raked lowest on the relative importance index scale. It would be noted that nearness to place of work is ranked higher in RII scale than nearness to worship centres and this is because there are a lot of civil servants within or around the study area that reside in the neighbourhood.

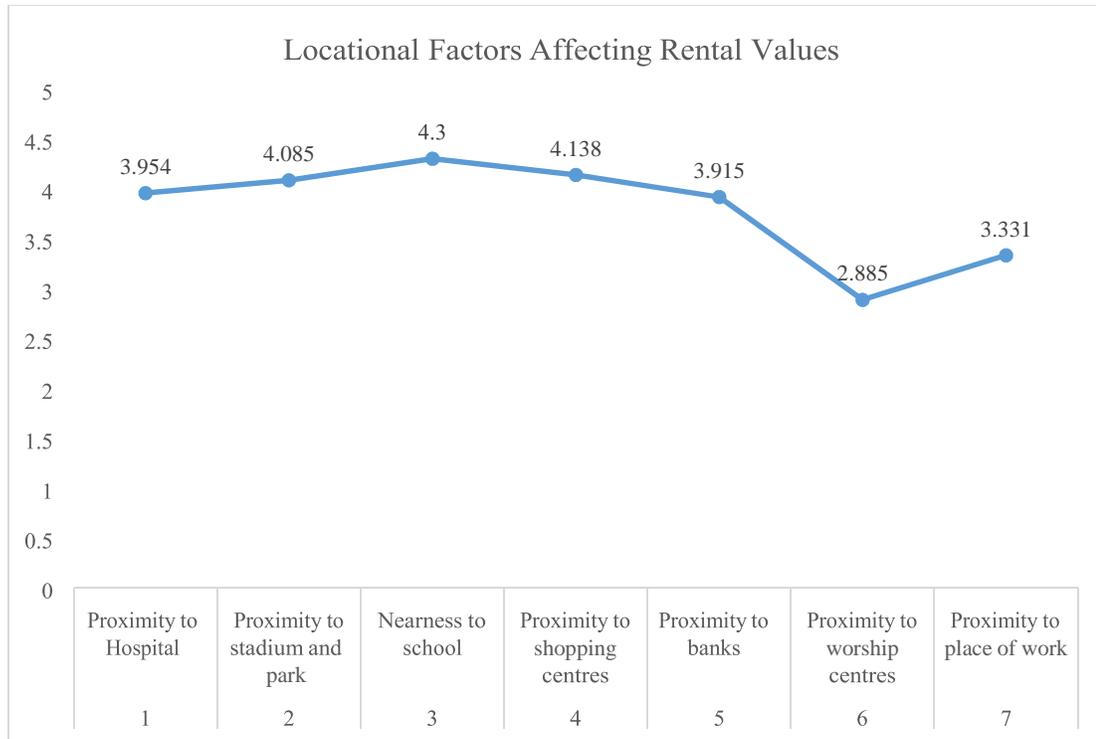


Figure 4.3: Locational Factors Affecting Rental Values

Source: Researchers' Computation (2022).

Table 4.10: Neighbourhood Factors Affecting Rental Values

S/N	Factors	Weight					Total	RII
		5	4	3	2	1		
1	Quality of Neighbourhood	95	68	0	16	6	185	4.062
2	Crime rate	75	52	30	24	4	185	4.423

3	Infrastructural Development	15	52	81	158	8	185	2.415
4	Ethnic mix	85	52	43	32	13	185	2.731
5	Security	135	152	33	38	15	185	3.638
6	Power supply	105	128	69	48	10	185	3.538
7	Water Supply	80	36	23	28	18	185	2.885
8	Refuge Disposal	73	44	37	19	12	185	3.331

Source: Researchers field survey (2022).

Analysis of responses about neighbourhood factors affecting residential property value revealed that the crime rate with a RII of 4.423 is the most important neighbourhood factor influencing property values followed by quality of the neighbourhood (Estate plan and quality designs) with RII of 4.062. Ethnic mix and owners/renters mix, infrastructural development are of less influence on property values when compared to others in this category. Most residents of the Estate are attracted to the security of the area not only because of the level of infrastructure development with RII of 2.415 such as road and drainages as well as good estate plan and quality designs.

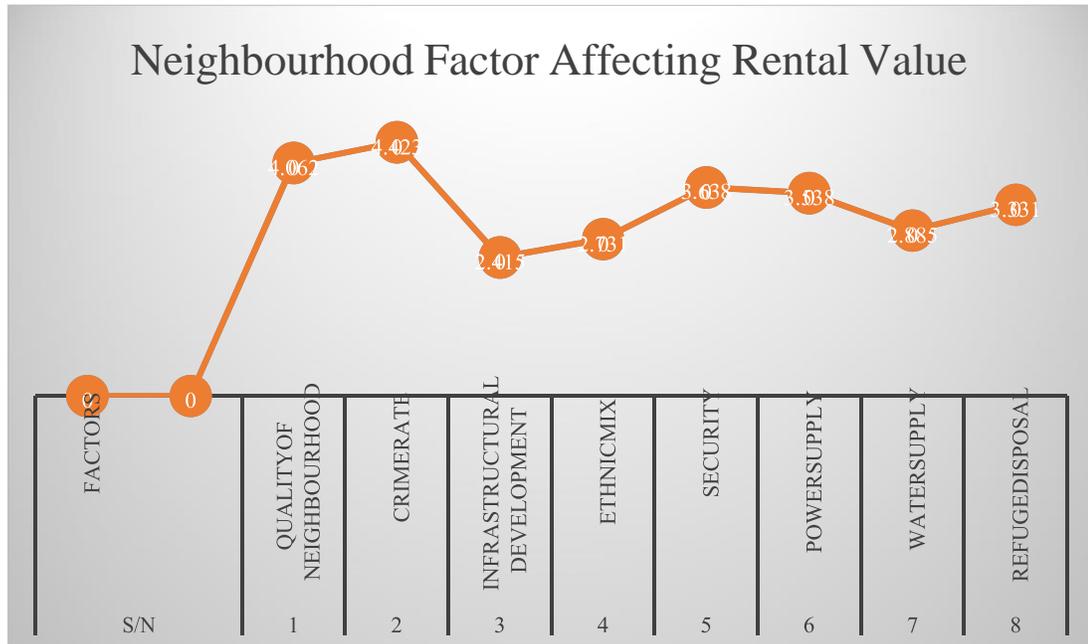


Figure 4.4: Neighbourhood Factors Affecting Rental Values

Source: Researchers' Computation (2022).

4.4 Assessing factors Influencing Accommodation Choice of Tenants across the Neighbourhood.

For the purpose of achieving the fourth objective of the study which is to assess factors influencing residential accommodation choices among tenants across the various neighbourhood in the Study Area. Some factors influencing tenants' choice of accommodation were used to determine the tenants choice in the study area and to indicate the level of influence of each factor on their decision to occupy the present accommodation based on a four points Likert Scale as stated in the methodology of the research. Their choices were analysed using the Relative Importance Index (RII) and the results are presented.

Table 4.11: Factors Influencing Tenants' Choice of Accommodation in Bosso Town

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	2.6667	0.6667	3rd
2	Direct Access to Tarred Road	2.6667	0.6667	3rd
3	Stable Electricity Supply	1.7778	0.4445	10 th
4	Quality of Neighbourhood	2.6667	0.6667	3rd
5	Adequate Water Supply	1.6667	0.4167	11 th
6	Number of Bedrooms	2.7778	0.6945	2nd
7	Number of Toilets and Bathrooms	2.8889	0.7225	1st
8	Size of the building	2.6667	0.6667	3rd
9	Presence of Tertiary Institutions, banks, public offices, etc.	2.0001	0.5	7th
10	Proximity to recreational facilities	1.8889	0.4725	8th
11	Presence of Recreational Amenities	1.7778	0.4448	9th
12	Availability of Day and Night Watch Security	1.5556	0.3889	12 th

Source: Researcher's Field Survey, 2022.

Table 4.11 Indicates factors that influence tenant choice of residential property in Bosso area. It indicates that number of toilets and bathrooms ranked first, number of bedrooms was ranked second, condition of the building, quality of neighbourhood, size of buildings and direct access to tarred road ranked third. Other factors played roles in influencing the choice of residential property but not as much as those identified in the first, second, and third ranking respectively and are found to be the uppermost in the choice of residential property in Bosso area.

Table 4.12: Factors Influencing Tenants' Choice of Accommodation in Shango

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	3.1000	0.7750	2nd
2	Direct Access to Tarred Road	2.4000	0.6000	8th
3	Stable Electricity Supply	1.8000	0.4500	9th
4	Quality of Neighbourhood	2.9000	0.7250	6th
5	Adequate Water Supply	3.1000	0.7750	2nd
6	Number of Bedrooms	3.3000	0.8250	1st
7	Number of Toilets and Bathrooms	3.1000	0.7750	2nd
8	Size of the building	3.1000	0.7750	2nd
9	Presence of Tertiary Institutions, banks, public offices, etc.	2.6000	0.6500	7th
10	Proximity to recreational facilities	1.7000	0.4250	10 th
11	Presence of Recreational Amenities	1.2000	0.3000	12 th
12	Availability of Day and Night Watch Security	1.4000	0.3500	11 th

Source: Researcher's Field Survey (2022).

Table 4.12 indicates that number of bedrooms ranked first, condition of the building, adequate water supply, number of toilets and bathrooms and size of building, jointly ranked second, followed by quality of neighbourhood. This implies that these factors are the dominant factors influencing tenants' choice of accommodation in Shango. Consequently presence of tertiary institution and quality of neighbourhood also constitute the demand for residential properties in the neighbourhood.

Table 4.13: Factors Influencing Tenants' Choice of Accommodation in Sauka

Kahuta

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	3.0000	0.7500	1st
2	Direct Access to Tarred Road	2.7143	0.6786	4th
3	Stable Electricity Supply	2.0000	0.5000	8th
4	Quality of Neighbourhood	2.5714	0.6429	6th
5	Adequate Water Supply	2.0000	0.5000	8th
6	Number of Bedrooms	3.0000	0.7500	1st
7	Number of Toilets and Bathrooms	2.4286	0.6071	7th
8	Size of the building	2.8571	0.7143	3rd
9	Presence of Tertiary Institutions, banks, public offices, etc.	2.0000	0.5000	8th
10	Proximity to recreational facilities	2.0000	0.5000	8th
11	Presence of Recreational Amenities	2.0000	0.5000	8th
12	Availability of Day and Night Watch Security	2.7143	0.6786	12th

Source: Researcher's Field Survey, 2022.

Table 4.13 shows that the condition of the building and number of bedrooms were ranked first while size of the building ranked third, direct access to tarred roads was ranked fourth. This implies that there are other dominant factors influencing tenants' choice of accommodation in Sauka-Kahuta and consequently constituting the demand for residential choice of accommodation in the neighbourhood.

Table 4.14: Factors Influencing Tenants' Choice of Accommodation in Kpakungu

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	2.9474	0.7368	3rd
2	Direct Access to Tarred Road	2.4211	0.6053	6th
3	Stable Electricity Supply	1.5789	0.3947	11 th
4	Quality of Neighbourhood	2.4737	0.6184	5th
5	Adequate Water Supply	2.2105	0.5526	8th
6	Number of Bedrooms	3.1053	0.7763	1st
7	Number of Toilets and Bathrooms	3.0526	0.7632	2nd
8	Size of the building	2.6318	0.5679	7th
9	Presence of Tertiary Institutions, banks, public offices, etc.	2.5263	0.6316	4th
10	Proximity to recreational facilities	1.8421	0.4605	9th
11	Presence of Recreational Amenities	1.5263	0.3816	12 th
12	Availability of Day and Night Watch Security	1.6842	0.4211	10 th

Source: Researcher's Field Survey, 2022.

Table 4.14 shows that number of bedroom was ranked first, number of toilets and bathrooms was ranked second and condition of building was ranked third. This implies that these three factors are the dominant factors with the uppermost choice of accommodation in Kpakungu hence constituting the demand for residential properties in the neighbourhood. The factors also played a vital role in the choice of

accommodation but not as much as those identified in the first, second and third rankings.

Table 4.15: Factors Influencing Tenants' Choice of Accommodation in GRA

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	2.000	0.5000	12 th
2	Direct Access to Tarred Road	3.6000	0.9000	1 st
3	Stable Electricity Supply	2.6000	0.6500	10 th
4	Quality of Neighbourhood	3.3000	0.8250	6 th
5	Adequate Water Supply	3.3000	0.8350	5 th
6	Number of Bedrooms	3.5000	0.8750	2 nd
7	Number of Toilets and Bathrooms	3.4000	0.8500	4 th
8	Size of the building	3.5000	0.8750	2 nd
9	Presence of Tertiary Institutions, banks, public offices, etc.	3.3000	0.8250	6 th
10	Proximity to recreational facilities	3.3000	0.8250	6 th
11	Presence of Recreational Amenities	2.1000	0.5250	11 th
12	Availability of Day and Night Watch Security	2.8000	0.7000	9 th

Source: Researcher's Field Survey, 2022.

Table 4.15 indicate the factors influencing tenants' choice of accommodation in GRA. It shows that direct access to tarred road was ranked first, number of bedrooms and size of building were both ranked second and number of toilets and

bathrooms was ranked fourth respectively. This implies that these four factors are the dominant factors influencing tenants' choice of accommodation in GRA. Other factors played a great role but not as much as those factors identified in the first, second and third rankings in the area.

Table 4.16: Factors Influencing Tenants' Choice of Accommodation in Tudun

Fulani

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	2.6667	0.6667	3rd
2	Direct Access to Tarred Road	2.6667	0.6667	3rd
3	Stable Electricity Supply	1.7778	0.4445	10 th
4	Quality of Neighbourhood	2.6667	0.6667	3rd
5	Adequate Water Supply	1.6667	0.4167	11 th
6	Number of Bedrooms	2.7778	0.6945	2nd
7	Number of Toilets and Bathrooms	2.8889	0.7225	1st
8	Size of the building	2.6667	0.6667	3rd
9	Presence of Tertiary Institutions, banks, public offices, etc.	2	0.5	7 th
10	Proximity to recreational facilities	1.8889	0.4725	8th
11	Presence of Recreational Amenities	1.7778	0.4448	9th
12	Availability of Day and Night Watch Security	1.5556	0.3889	12 th

Source: Researcher's Field Survey, 2022.

Table 4.16 indicates the factors influencing tenants' choice of accommodation in Tudun Fulani. Number of toilets and bathrooms was ranked first, number of bedrooms ranked second and quality of neighbourhood, condition of building, direct access to tarred road and size of building ranked third. This implies that these factors are the dominant factors influencing tenants' choice of accommodation in Tudun Fulani and formed the uppermost factors influencing the tenants' choice of residential accommodation in the area.

Table 4.17: Factors Influencing Tenants' Choice of Accommodation in Chanchaga

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	2.7826	0.6957	3rd
2	Direct Access to Tarred Road	2.2609	0.5652	7th
3	Stable Electricity Supply	2.0000	0.5000	8th
4	Quality of Neighbourhood	2.8261	0.7065	2nd
5	Adequate Water Supply	3.3478	0.8370	1st
6	Number of Bedrooms	2.6957	0.6739	4th
7	Number of Toilets and Bathrooms	2.6087	0.6522	6th
8	Size of the building	2.6959	0.6739	4th
9	Presence of Tertiary Institutions, banks, public offices, etc.	1.9565	0.4891	9th
10	Proximity to recreational facilities	1.9130	0.4783	10 th
11	Presence of Recreational Amenities	1.7391	0.4348	12 th
12	Availability of Day and Night Watch Security	1.9130	0.4783	10 th

Source: Researcher's Field Survey, 2022.

Table 4.17 indicates the factors influencing tenants' choice of accommodation in Chanchaga. It indicates that adequate water supply was ranked first, quality of neighbourhood and condition of the building ranked second and third respectively. This implies that these are the dominant factors influencing tenants' choice of accommodation in Chanchaga while other factors played a significant role but not as much as those identified in the first, second and third rankings in the neighbourhood.

Table 4.18: Factors Influencing Tenants' Choice of Accommodation in Bosso Estate

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	3.1000	0.7750	4th
2	Direct Access to Tarred Road	3.0000	0.7500	1 st
3	Stable Electricity Supply	2.2000	0.5500	9th
4	Quality of Neighbourhood	3.3000	0.8250	6 th
5	Adequate Water Supply	2.5000	0.6250	7th
6	Number of Bedrooms	3.2000	0.8000	2nd
7	Number of Toilets and Bathrooms	3.0000	0.7500	5th
8	Size of the building	3.2000	0.8000	2nd
9	Presence of Tertiary Institutions, banks, public offices, etc.	2.0000	0.5000	10 th
10	Proximity to recreational facilities	1.6000	0.4000	12 th

11	Presence of Recreational Amenities	1.7000	0.4250	11 th
12	Availability of Day and Night Watch Security	2.4000	0.6000	8 th

Source: Researcher's Field Survey, 2022.

Table 4.18 indicates factors influencing tenants' choice of accommodation in Bosso Estate. It shows that direct access to tarred road was ranked first, size of building and number of bedrooms was ranked second while the condition of building was ranked forth. The implication of this is that these factors are the dominant factors influencing tenants' choice of accommodation in Bosso Estate and consequently other factors played a significant roles in influencing residential choice of accommodation in the area.

Table 4.1.9: Factors Influencing Tenants' Choice of Accommodation in Tayi village

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	3.1429	0.7857	5 th
2	Direct Access to Tarred Road	2.5714	0.6429	7 th
3	Stable Electricity Supply	3.4286	0.8571	1 st
4	Quality of Neighbourhood	3.4286	0.8571	1 st
5	Adequate Water Supply	2.5714	0.6429	7 th
6	Number of Bedrooms	3.4286	0.8571	1 st
7	Number of Toilets and Bathrooms	3.2857	0.8214	4 th
8	Size of the building	3.1429	0.7857	5 th

9	Presence of Tertiary Institutions, banks, public offices, etc.	2.1429	0.5357	9th
10	Proximity to recreational facilities	1.8571	0.4643	12 th
11	Presence of Recreational Amenities	2.0000	0.5000	11 th
12	Availability of Day and Night Watch Security	2.1429	0.5357	9th

Source: Researcher's Field Survey, 2022.

Table 4.19 shows the factors influencing tenants' choice of accommodation in Tayi village. It indicates that stable electricity supply, quality of neighbourhood and number of bedrooms were all ranked first, followed by number of toilets and bathrooms which was ranked forth. Other factors also played a significant role which influence tenants' choice of accommodation in Tayi village.

Table 4.20: Factors Influencing Tenants' Choice of Accommodation in Tunga

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	3.3636	0.8409	2nd
2	Direct Access to Tarred Road	2.5454	0.6364	7th
3	Stable Electricity Supply	2.8182	0.7045	6th
4	Quality of Neighbourhood	3.5455	0.8864	1st
5	Adequate Water Supply	2.5454	0.6364	7th
6	Number of Bedrooms	3.3636	0.8409	2nd

7	Number of Toilets and Bathrooms	3.1818	0.7955	4rd
8	Size of the building	3.1818	0.7955	4th
9	Presence of Tertiary Institutions, banks, public offices, etc.	2.4545	0.6136	9th
10	Proximity to recreational facilities	0.7273	0.1818	11 th
11	Presence of Recreational Amenities	0.7275	0.1818	11 th
12	Availability of Day and Night Watch Security	2.0000	0.5000	10 th

Source: Researcher's Field Survey, 2022.

Table 4.20 shows the factors influencing tenants' choice of accommodation in Tunga. It indicates that quality of neighbourhood was ranked first, condition of the building and number of bedrooms were both ranked second, number of toilets and bathrooms was ranked forth. This indicates that these are the dominant factors influencing tenants' choice of accommodation in Tunga while other factors played a great role in influencing choice of residential accommodation in the neighbourhood.

Table 4.21: Factors Influencing Tenants' Choice of Accommodation in Maitumbi

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	3.3043	0.8261	1st
2	Direct Access to Tarred Road	3.1739	0.7934	3rd
3	Stable Electricity Supply	2.2609	0.5652	9th
4	Quality of Neighbourhood	2.9565	0.7391	4th
5	Adequate Water Supply	2.2609	0.5652	9th

6	Number of Bedrooms	2.6957	0.6739	5th
7	Number of Toilets and Bathrooms	2.4783	0.6196	6th
8	Size of the building	3.2174	0.8043	2nd
9	Presence of Tertiary Institutions, banks, public offices, etc.	2.4348	0.6083	8th
10	Proximity to recreational facilities	2.4783	0.6196	6th
11	Presence of Recreational Amenities	1.6521	0.4130	12 th
12	Availability of Day and Night Watch Security	2.1739	0.5435	11 th

Source: Researcher's Field Survey, 2022.

Table 4.21 shows the factors influencing tenants' choice of accommodation in Maitumbi. It indicates that condition of building was ranked first, size of the building was ranked second while direct access to tarred road was ranked third. This implies that these four factors are the dominant factors influencing tenants' choice of accommodation in the area.

Table 4.22: Factors Influencing Tenants' Choice of Accommodation in F-layout

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	2.6250	0.6563	6th
2	Direct Access to Tarred Road	3.3750	0.8438	1st

3	Stable Electricity Supply	2.5000	0.6250	8th
4	Quality of Neighbourhood	3.2500	0.8125	3rd
5	Adequate Water Supply	1.8750	0.4688	10 th
6	Number of Bedrooms	2.8750	0.7186	4th
7	Number of Toilets and Bathrooms	2.7500	0.6875	5th
8	Size of the building	3.3750	0.8438	1st
9	Presence of Tertiary Institutions, banks, public offices, etc.	2.1250	0.5313	9th
10	Proximity to recreational facilities	1.7500	0.4375	11 th
11	Presence of Recreational Amenities	1.7500	0.4375	11 th
12	Availability of Day and Night Watch Security	2.6250	0.6563	6th

Source: Researcher's Field Survey, 2022.

Table 4.22 shows the factors influencing tenants' choice of accommodation in F-Layout. It indicates that size of the building and direct access to tarred road jointly ranked first, quality of neighbourhood was ranked third and number of bedrooms ranked fourth. It is evident that these factors are the dominant factors influencing tenants' choice of accommodation in F-layout while other factors played roles in influencing the choice of residential accommodation but not as much as those identified in the first, second, third and fourth rankings.

Table 4.23: Factors Influencing Tenants' Choice of Accommodation in Fadikpe

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	3.2222	0.8056	2nd
2	Direct Access to Tarred Road	1.6667	0.4167	10 th

3	Stable Electricity Supply	2.0000	0.5000	6th
4	Quality of Neighbourhood	3.0000	0.7500	4th
5	Adequate Water Supply	1.8889	0.4722	7th
6	Number of Bedrooms	3.4444	0.8611	1st
7	Number of Toilets and Bathrooms	3.2222	0.8056	2nd
8	Size of the building	3.0000	0.7500	4th
9	Presence of Tertiary Institutions, banks, public offices, etc.	1.4444	0.3611	11 th
10	Proximity to recreational facilities	1.7778	0.4444	9th
11	Presence of Recreational Amenities	1.4444	0.3611	11 th
12	Availability of Day and Night Watch Security	1.8889	0.4722	7th

Source: Researcher’s Field Survey, 2022.

Table 4.23 indicates the factors influencing tenants’ choice of accommodation in Fadikpe. From the table, number of bedrooms was ranked first, number of toilets and bathrooms and condition of building ranked second and the size of the building and quality of neighbourhood jointly ranked forth. This indicates that these factors are the dominant factors influencing tenants’ choice of accommodation in Fadikpe because they ranked uppermost in the choice of residential accommodation. Other factors played roles but not as the factors identified in the first, second third and fourth rankings.

Table 4.24: Factors Influencing Tenants’ Choice of Accommodation in Dutsen Kura

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	3.222	0.8056	2nd

2	Direct Access to Tarred Road	1.6667	0.4167	9th
3	Stable Electricity Supply	2.0000	0.5000	6th
4	Quality of Neighbourhood	3.0000	0.7500	4th
5	Adequate Water Supply	1.8889	0.4722	7th
6	Number of Bedrooms	3.4444	0.8611	1st
7	Number of Toilets and Bathrooms	3.2222	0.8056	2nd
8	Size of the building	3.0000	0.7500	4th
9	Presence of Tertiary Institutions, banks, public offices, etc.	1.4444	0.3611	10 th
10	Proximity to recreational facilities	1.7778	0.4444	8th
11	Presence of Recreational Amenities	1.4444	0.3611	10 th
12	Availability of Day and Night Watch Security	0.7778	0.1944	12 th

Source: Researcher's Field Survey, 2022.

Table 4.24 indicates the factors influencing tenants' choice of accommodation in Dutsen Kura. Number of bedrooms ranked first, number of toilets and bathrooms together with condition of building ranked second and size of the building and quality of neighbourhood jointly ranked forth. This indicates the factors that dominant in influencing tenants' choice of accommodation. Other factors played roles but not as much as the factors identified in the first, second and forth rankings.

Table 4.25: Factors Influencing Tenants' Choice of Accommodation in Jikpan

S/N	Reason for Occupying Property	Mean	RII	Rank
1	Condition of the Building	2.8182	0.7045	2nd
2	Direct Access to Tarred Road	1.8182	0.4545	8th

3	Stable Electricity Supply	1.7273	0.4318	9th
4	Quality of Neighbourhood	2.1818	0.5455	6th
5	Adequate Water Supply	1.9091	0.4773	7th
6	Number of Bedrooms	2.6364	0.6591	3rd
7	Number of Toilets and Bathrooms	2.5455	0.6364	4th
8	Size of the building	2.3636	0.5909	5th
9	Presence of Tertiary Institutions, banks, public offices, etc.	3.2727	0.8182	1st
10	Proximity to recreational facilities	1.5455	0.2864	12 th
11	Presence of Recreational Amenities	1.7273	0.4318	9th
12	Availability of Day and Night Watch Security	1.6364	0.4091	11 th

Source: Researcher’s Field Survey, 2022.

Table 4.25 indicates the factors influencing tenants’ choice of accommodation in Jikpan. It shows that the Presence of Tertiary Institutions, banks, public offices, etc. ranked first, condition of the building ranked second and number of bedrooms ranked third. This implies that the three factors are the dominant factors influencing tenants’ choice of accommodation in Jikpan and ranked uppermost. Other factors played roles but not as much as the factors identified in the first, second and third rankings.

The dominant factors influencing tenants’ choice of accommodation in the various neighbourhoods of the study area can be summarized and presented in table 4.26

Table 4.26: Dominant Factors Influencing Tenants’ Choice of Accommodation in the Study Area

S/N	Name of Neighbourhood	Factors Influencing Tenants Choice of Accommodation
1	Tudun-Fulani	Number of toilets and bathrooms, number of bedrooms, condition of the building, direct access to tarred road, quality of neighbourhood and size of the building.
2	Bosso Town	Presence of tertiary institution, banks, public offices, etc., condition of the building, and size of the building
3	Bosso Estate	Quality of neighbourhood, number of bedrooms, and size of the building
4	Jikpan	Presence of tertiary institution, banks, public offices, etc., condition of the building and number of bedrooms.
5	GRA	Direct access to tarred road, number of bedrooms and size of the building.
6	F-layout	Direct access to tarred road, size of the building, and quality of neighbourhood.
7	Dutsen Kura	Number of bedrooms, condition of the building and number of toilets and bathrooms.
8	Fadikpe	Number of bedrooms, condition of the building and number of toilets and bathrooms.
9	Maitumbi	Condition of the building, size of the building and direct access to tarred road.
10	Tayi village	Quality of neighbourhood, direct access to tarred

		road, stable electricity supply, and presence of tertiary institutions, banks, public offices, etc.
11	Kpakungu	Number of bedrooms, number of toilets and bathrooms and condition of the building.
12	Sauka-kahuta	Condition of the building, number of bedrooms and size of the building.
13	Tunga	Quality of neighbourhood, condition of the building and number of bedrooms.
14	Shango	Number of bedrooms, condition of the building, adequate water supply, number of toilets and bedrooms and size of the building.
15	Chanchaga	Adequate water supply, quality of neighbourhood and condition of the building.

Source: Researcher's field survey, 2022.

Table 4.26 indicates the dominant factors common to all the fifteen(15) locations studied, and these factors are; number of bedrooms, number of toilets and bathrooms, size of the buildings, condition of the buildings, quality of neighbourhood and direct access to tarred roads were found to be ranked uppermost while other factors such as proximity to recreational facilities, availability of day and night watch security, stable electricity among others played a significant role in the choice of residential accommodation but not as much as the other factors identified as the uppermost.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This study aimed at examining the Determinants of Variation in Residential Property Rental Values in Minna, Nigeria. Both primary and secondary sources of data were collected through the various means of data collection including questionnaire administration and interview were used for the analyses at different stages of the research.

The following findings were made.

1. The study revealed that the trend in rental values of residential properties in the study area with the predominant ones being two-bedroom flats and three bedroom flats for the period of study from 2011 to 2020 varies across the neighbourhood and commanding different rental value ranging from 120,000 to 300,000. This is explained by the analysis of rental values of the residential property types across the neighbourhoods of the study area. The rental trend for three bedroom flat within the study period changed from 1.59% in 2011 to 8.36% in 2017 and later in 2020 dropped to 4.61%. For two bedroom flat within the study period changed from 1.51% in 2012 to 7.92% in 2017 and later dropped to 5.59% in 2020. This indicates that the variation was more in 2017 across the neighbourhood.
2. The study analysed the rental variation and revealed that there is fluctuation in rental value. Studying the rental variation of residential property, the rental

value of residential property across the neighbourhood within the study period changed. The variation showed the average rental value of two bedroom flats within the study period having 24.4% for Bosso town ranking the highest while Chanchaga is having 13.03% as the lowest level of variation. For three bedroom, Shango has the highest with 18.9% while Fadikpe has the lowest with 9.9% level of variation.

3. The study revealed that various factors played a major role influencing tenants' choice of accommodation in the various neighbourhoods across the study area. The study went further to reveal the dominant factors influencing tenants' choice of accommodation in each neighbourhood of the study area which include condition of the building, size of the building, number of bedrooms, number of toilets and bathrooms, quality of the neighbourhood, direct access to tarred road and presence of tertiary institution, banks and public offices.

5.2 Conclusion

In conclusion, the research indicates that there is variation in residential property rental values in Minna, Nigeria. This variations are attributed primarily to factors that determine residential property rental values of which the condition of the building, size of the building, number of bedrooms, number of toilets and bathrooms, quality of the neighbourhood, presence of tertiary institutions, banks and public offices proved to be the dominants factors. Also these factors influence tenants' choice of accommodation in the study area.

This is explained by the result of the analysis of rental growth rate of the various property types across the selected neighbourhoods in the study area.

The study also indicates that the various factors relating to the physical, location and neighbourhood characteristics of residential property which determine the rental values of residential property influence tenants' choice of accommodation in the various neighbourhoods across the study area and consequently determines variation in residential property rental values in the study area.

Although majority of the residents in the study area have their workplaces in relatively distant locations, the distance travel and cost of getting there is not a significant factor that affect property value contrary to the propositions of rent theory. This invariably implies that residents are indirectly paying more to live in the study area. It was further discovered that proximity to direct access to tarred road that connect various facilities to the residential areas, number and size of bedrooms, conveniences, proximity to shopping centres and markets as well as security and crime rate are the leading factors affecting property values in the study area.

5.3 Recommendations

The essences of research is to fill knowledge gap in order to advance the frontier of knowledge and makes relevant recommendations that are applicable to existing and or emerging issues with respect to the field of enquiry. Therefore, the following recommendations are hereby made based on the findings of this research.

1. Existing investors seeking to diversify their residential property investment portfolio are advised to avoid investing in neighbourhoods with similar locational characteristics with respect to factors influencing residential property rental values.

2. Also, potential investors contemplating residential property investment should consider the quality of neighbourhood, presence of tertiary institutions banks and public offices in their potential choice of location for their property investment as properties in neighbourhoods with these neighbourhoods attributes tends to command higher rental values than others.
3. There is the need for government to harness development potential within the study area to develop mass houses for the civil servants in the study area. To sustain property market in the study area, it is suggested that prospective property developers to take cognisance of locational, structural and neighbourhood factors that significantly affect property value.

5.4 Contribution to Knowledge

The study identified the various factors that are responsible for the variation in rental value but not limited to the factors, these are the physical, location and neighbourhood characteristics of residential property which determine the rental values of residential property in the study area.

Also, Landlords seeking to secure optimum return from their residential property investment are advised to concentrate on improving the physical characteristics of their properties like the condition of the building, size of the building, number of bedrooms and number of toilets and bathrooms as these factors proved to be the dominant factors influencing tenants choice of accommodation in many neighbourhoods of the study area.

5.5 Areas for Further Research

It is hoped that this study will generate greater interest among real Estate academics and practitioners to undertake further research on the emerging variables responsible for rental change in the property market. Such studies should focus on:

- a. The relationship between the residential property rental dynamics and the residential property price adjustments and the implications of such relationship on residential property investments.
- b. Residential property rental movements in situations where rents are paid more than once per annum such as monthly, bi-monthly, quarterly and semi-annual rental payments.
- c. Emerging trends should be considered in the determination of factors responsible for rental dynamics not necessarily the physical, structural and neighbourhood characteristics.

REFERENCES

- Adebisi, O.S., Ezeokoli, N.B., Oletubo, A.A., & Alade, T.J. (2015). Rental analysis of residential properties in close proximity to the Federal University of Technology, Akure, Nigeria. *Journal of Economics and Sustainable Development*. ISSN 22221700 (Paper) ISSN 2222-2855 Vol.6, No.10.
- Ajayi, M. T. A., Jimoh, O. J., & Jimoh R. A. (2014). Effect of Infrastructural development on Residential Property Values in Minna. *Ethiopian Journal of Environmental Studies & Management* 7(4): 452 – 459, 2014. ISSN: 1998-0507.
- Ajibola, M. O., Olaniyan A. M., & Simon, R. F. (2011). Assessing the Effects of Urban Planning on Residential Property Values in Agege, Lagos. *European Scientific Journal*. May edition vol. 8, no.11 ISSN: 1857 – 7881 (print) e - ISSN 1857- 7431.
- Anthony, O. (2012). Examination of the Determinants of Housing Values in Urban Ghana and Implications for Policy Makers. Paper presented at the African

Real Estate Society Conference in Accra, Ghana from 24 -27 October.
Foundation for Africa real estate research.

- Anushree, B. (2013). Determinant of Property Values in Jaipur City, India. *International Journal of Scientific and Research Publications*. Volume 3, Issue 9, September 2013 1 ISSN 2250-3153.
- Betasha, F.C. (2019). Assessment of residential property rental value Variations in PeriUrban areas of Minna Niger State. Unpublished B.Tech Project), Federal University of Technology, Minna. Nigeria.
- DAP (2007). Development Action Plan of Niger State 2007-2011. Niger state
- Dugeri, T. T. (2011). An evaluation of the Maturity of the Nigerian property Market. (Unpublished Doctorate Thesis) retrieved online from the department of Estate Management, University of Lagos.
- Gwamna, E., Yusoff, W.Z., & Ismail, M.F. (2015). Determinants of land use and property value. *Article of advanced science letters*. Vol. 31, 4: pp 123-146.
- Igbinsosa, S. O. (2011.) Determinants of Residential Property Value in Nigeria – A Neural Network Approach. *International Multidisciplinary Journal, Ethiopia* Vol. 5 (5), Serial No. 22, October, 2011 ISSN 1994-9057 (Print) ISSN 2070-0083.
- Isa, A. (2011). Effect of Slum on Residential Property Value in Minna. (A case study of Limawa and F-Layout areas). (Unpublished B.Tech. Project), Federal University of Technology Minna, Nigeria.
- Ivy, D. A., & Ernest, A. F. (2013). Factors Determining Residential Rental Prices. *Asian Economic and Financial Review*, 3(1):39-50.
- Jide, B. (2003). *Modern Techniques of Property Valuation*. Jitaset Publishers Ltd. Wuse Zone 3, Abuja Nigeria. Pg. 4.
- Julius, A. B. O., & Mustapha, O. B. (2009). Effects of Infrastructural Facilities on the Rental Values of Residential Property. *Journal of Social Sciences* 5(4): 332-341, ISSN 1549-3652 © 2009 Science Publications.
- Julius, A. B. O. (2010). Analysis of the Relationships of Infrastructural Facilities in the Determination of Rental Values of Residential Properties in Akure, Nigeria. *Arts and Social Sciences Journal*, Volume 2010: ASSJ-10.
- Kemiki, O.A., Ojetunde, I., & Ayoola, A. B. (2014). The impact of Noise and dust level on rental price of residential tenements around Lafarge cement factory in Ewekoro town, Nigeria. *Ethiopian Journal of Environmental Studies & Management* 7(2): 108 – 116, 2014. ISSN: 1998-0507.

- Kim, S.K., & Nelson, W. (2016). Assessing the rental value of residential properties: an abductive learning network approach. *Journal of real estate research* vol. 12(1), pp 63-78. Doi 10:1080/10835547.12090832.
- Kuye, O. (2003). *Property Valuation, Principles and Practice*, Lagos: Olusegun Kuye and Associates.
- National Bureau of Statistics (NBS). (2016). *Nigeria-General Housing Survey-Panel Wave 3(Post Planting) 2015-2016, Third Round*. Nigeria. Retrieved From: <http://www.nigerianstat.gov.ng/nada/index.php>.
- Nishani, W. (2016). Determinants of rental value for residential properties. Vol. 12, issue 1, February, 2016. *Research journal of the Sri Lanka institute of architects*. Pp 10- 22. Department of estate management and valuation, faculty of management studies and commerce.
- Nwosu, A.E., & Olofa, S.A. (2015). Effects of Waste dumpsites on proximate Residential Property Value in Ibadan, Oyo State, Nigeria. *Ethopian journal of environmental studies and management* 8(suppl.2):976-982, 2015. ISSN: 1998-0507 DOI.
- Ojetunde I., Fabunmi F., Abdulkareem S., & Iyanda A. (2012). Rent structure of residential Property: do the quality of internal aesthetics really count. *Journal SSRN* 2139131, 2012.
- Olalere, W.A. (2016). *Determinants of Spatial Variation in Residential Property Rental Values in Minna*. (Unpublished B.Tech. Project), Federal University of Technology Minna, Nigeria.
- Oloke, C. O., Simon F. R., & Adesulu, A.F. (2013). An Examination of the Factors Affecting Residential Property Values in Magodo Neighbourhood, Lagos State. *International Journal of Economy, Management and Social Sciences*. 2(8) August Edition, Pages: 639-643.
- Oyebanji, O. A. (2003). *Principles of Land Use Economics*, Mushin, Lagos Sam otu Nigeria co.
- Olorunyomi, O.J. (2018). *Comparative Analysis of Rental Variation of Residential and Commercial Properties in Jos*. (Unpublished B.Tech. Project), Federal University of Technology, Minna. Nigeria.
- Timothy, J.F., David, C.L., & Gordon, F.M. (2003). Modelling spatial variation in housing prices: A variable Interaction approach. *Article in real estate economics*, vol. 31 pp 623-646.
- Tom, K. (2003). Residential property value and locational externalities on the complementally and sustainability approaches. An article in *Journal of property investment and finance*. June 2013. Pp 251-261.

Udoekanem, B.A. (2015). Determinants of spatial variation in residential property rental values in minna. (Unpublished PhD thesis), Federal University of Technology Minna, Nigeria.

Appendix A:

Number of Estate Surveying Firms in Minna Sampled

S/N	Name of Firm	Firm's Office	Firm's Staff Strength	Academic Qualification	Professional Qualification of Firm	Firm's Years of Experience
1	A.U. Salihu & Associates	Head	5	M. Sud.	Associate <10 years	5-10 years
2	Adamu Muhmmmed & Partners	Branch	8	M. Sc.	Fellow	15 years
3	Alagbe & Partners	Head	5	HND	Fellow	15 years
4	Babatunde & Co.	Head	7	Ph.D.	Fellow	15 years
5	M.B. Nuhu & Co	Head	5	Ph.D.	Fellow	16 years
6	Thomas Diko & Co	Head	8	B. Sc./Tech.	Associate >10 years	16 years
7	Shehu & Partners	Head	3	HND	Associate <10 years	10-11 years
8	Timi Kemiki & Co	Head	8	Ph.D.	Fellow	16-20 years
9	David Adoga & Partners	Head	6	B. Sc./M.Tech	Associate >10 years	11-15 years
10	Aliyu Y.M. & Partners	Head	6	B. Sc./Tech.	Associate > 10years	10-15 years

Source: Researcher's Field Data (2022).

AppendixG ₁ : Average Rental Values of 3 Bedrooms Apartments in Bosso Town, 2011 – 2020											
S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	200,000	200,000	200,000	220,000	220,000	220,000	250,000	250,000	300,000	300,000
2	Adamu Muhmmmed & Partners	200,000	200,000	200,000	200,000	200,000	200,000	250,000	250,000	250,000	250,000

3	Alagbe & Partners	100,000	100,000	100,000	100,000	100,000	100,000	120,000	120,000	120,000	150,000
4	Babatunde & Co.	100,000	100,000	100,000	120,000	120,000	120,000	180,000	180,000	180,000	200,000
5	M.B. Nuhu & Co	150,000	150,000	150,000	150,000	150,000	150,000	150,000	200,000	200,000	200,000
6	Thomas Diko & Co.	230,000	250,000	250,000	250,000	300,000	300,000	300,000	350,000	350,000	350,000

7	Shehu & Partners	100,000	100,000	120,000	120,000	150,000	150,000	180,000	180,000	180,000	200,000
8	Timi Kemiki & Co	150,000	150,000	150,000	150,000	150,000	150,000	150,000	200,000	200,000	200,000
9	David Adoga & Partners	150,000	150,000	150,000	150,000	150,000	150,000	150,000	200,000	200,000	200,000
10	Aliyu Y.M. & Partners	100,000	100,000	120,000	120,000	150,000	150,000	180,000	180,000	180,000	200,000
	Mean Rental Value	148,000	150,000	154,000	158,000	169,000	169,000	191,000	211,000	216,000	225,000

Appendix G2: Average Rental Values of 3 Bedrooms Apartments in Shango, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	120,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000	200,000	200,000
2	Adamu Muhmmmed & Partners	100,000	100,000	100,000	120,000	120,000	150,000	150,000	180,000	180,000	200,000
3	Alagbe & Partners	150,000	150,000	150,000	170,000	170,000	170,000	170,000	200,000	200,000	200,000
4	Babatunde & Co.	100,000	100,000	100,000	120,000	120,000	120,000	180,000	180,000	180,000	200,000
5	M.B. Nuhu & Co	120,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000	200,000	200,000
6	Thomas Diko & Co.	230,000	250,000	250,000	250,000	280,000	280,000	280,000	300,000	300,000	300,000
7	Shehu & Partners	120,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000	200,000	200,000
8	Timi Kemiki & Co	120,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000	200,000	200,000
9	David Adoga & Partners	100,000	100,000	120,000	120,000	120,000	150,000	150,000	180,000	180,000	200,000

10	Aliyu Y.M. & Partners	120,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000	200,000	200,000
	Mean Rental Value	128,000	130,000	132,000	138,000	156,000	162,000	168,000	194,000	204,000	210,000

Appendix G3: Average Rental Values of 3 Bedrooms Apartments in Sauka Kahuta, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	120,000	120,000	120,000	120,000	120,000	120,000	120,000	150,000	150,000	200,000
2	Adamu Muhmmmed & Partners	150,000	150,000	150,000	180,000	180,000	200,000	200,000	200,000	200,000	220,000
3	Alagbe & Partners	100,000	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	150,000
4	Babatunde & Co.	120,000	120,000	120,000	150,000	150,000	150,000	250,000	250,000	250,000	300,000

5	M.B. Nuhu & Co	120,000	120,000	120,000	120,000	120,000	120,000	120,000	150,000	150,000	200,000
6	Thomas Diko & Co.	180,000	200,000	200,000	200,000	230,000	230,000	230,000	250,000	250,000	250,000
7	Shehu & Partners	100,000	100,000	110,000	110,000	120,000	120,000	120,000	150,000	150,000	150,000
8	Timi Kemiki & Co	120,000	120,000	120,000	120,000	120,000	120,000	120,000	150,000	150,000	200,000
9	David Adoga & Partners	180,000	200,000	200,000	200,000	230,000	230,000	230,000	250,000	250,000	250,000
10	Aliyu Y.M. & Partners	150,000	150,000	180,000	180,000	180,000	200,000	200,000	200,000	200,000	220,000
	Mean Rental Value	134,000	138,000	142,000	148,000	157,000	161,000	171,000	190,000	190,000	214,000

Appendix G4: Average Rental Values of 3 Bedrooms Apartments in Kpakungu , 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	150,000	150,000	150,000	180,000	180,000	180,000	200,000	200,000	200,000	200,000
2	Adamu Muhmmmed & Partners	200,000	200,000	200,000	200,000	200,000	200,000	250,000	250,000	250,000	250,000

3	Alagbe & Partners	120,000	120,000	120,000	150,000	150,000	150,000	180,000	180,000	200,000	200,000
4	Babatunde & Co.	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000
5	M.B. Nuhu & Co	120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	200,000	200,000
6	Thomas Diko & Co.	200,000	220,000	220,000	220,000	230,000	230,000	230,000	250,000	250,000	250,000
7	Shehu & Partners	120,000	120,000	120,000	150,000	150,000	150,000	180,000	180,000	200,000	200,000
8	Timi Kemiki & Co	120,000	120,000	120,000	120,000	150,000	150,000	150,000	150,000	200,000	200,000
9	David Adoga & Partners	120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	200,000	200,000
10	Aliyu Y.M. & Partners	200,000	200,000	200,000	200,000	200,000	200,000	250,000	250,000	250,000	250,000
	Mean Rental Value	145,000	147,000	147,000	158,000	162,000	168,000	189,000	191,000	210,000	213,000

Appendix G5: Average Rental Values of 3 Bedrooms Apartments in Tudun Fulani, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	150,000	150,000	180,000	180,000	200,000	200,000	250,000	250,000	300,000	300,000
2	Adamu Muhmmmed & Partners	120,000	120,000	120,000	150,000	150,000	150,000	180,000	180,000	180,000	200,000

3	Alagbe & Partners	150,000	150,000	150,000	180,000	180,000	200,000	200,000	200,000	250,000	250,000
4	Babatunde & Co.	100,000	100,000	100,000	110,000	110,000	110,000	120,000	120,000	120,000	150,000
5	M.B. Nuhu & Co	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	180,000	200,000
6	Thomas Diko & Co.	200,000	250,000	250,000	250,000	280,000	280,000	280,000	300,000	300,000	300,000
7	Shehu & Partners	120,000	120,000	120,000	150,000	150,000	150,000	180,000	180,000	180,000	200,000
8	Timi Kemiki & Co	120,000	120,000	120,000	150,000	150,000	150,000	180,000	180,000	180,000	200,000
9	David Adoga & Partners	100,000	100,000	100,000	110,000	110,000	110,000	120,000	120,000	120,000	150,000
10	Aliyu Y.M. & Partners	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	180,000	200,000

	Mean Rental Value	126,000	131,000	134,000	152,000	157,000	159,000	181,000	183,000	199,000	215,000

Appendix G6: Average Rental Values of 3 Bedrooms Apartments in Chanchaga, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	120,000	120,000	120,000	150,000	150,000	150,000	180,000	180,000	180,000	180,000
2	Adamu Muhmmmed & Partners	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000
3	Alagbe & Partners	110,000	110,000	110,000	110,000	130,000	130,000	130,000	130,000	150,000	150,000
4	Babatunde & Co.	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000
5	M.B. Nuhu & Co	120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	150,000	150,000
6	Thomas Diko & Co.	200,000	200,000	220,000	220,000	230,000	230,000	230,000	250,000	250,000	250,000
7	Shehu & Partners	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000
8	Timi Kemiki & Co	120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	150,000	150,000
9	David Adoga & Partners	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000
10	Aliyu Y.M. & Partners	120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	150,000	150,000
	Mean Rental Value	119,000	119,000	121,000	132,000	135,000	144,000	159,000	161,000	163,000	175,000

Appendix G7: Average Rental Values of 3 Bedrooms Apartments in Bosso Estate, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	200,000	200,000	250,000	250,000	250,000	300,000	300,000	350,000	350,000	400,000
2	Adamu Muhmmmed & Partners	250,000	250,000	250,000	250,000	300,000	300,000	300,000	300,000	300,000	300,000
3	Alagbe & Partners	300,000	300,000	300,000	300,000	300,000	350,000	350,000	350,000	350,000	350,000

4	Babatunde & Co.	200,000	200,000	200,000	250,000	250,000	250,000	280,000	280,000	280,000	300,000
5	M.B. Nuhu & Co	150,000	150,000	150,000	150,000	150,000	150,000	200,000	200,000	200,000	200,000
6	Thomas Diko & Co.	350,000	350,000	350,000	380,000	380,000	400,000	400,000	400,000	450,000	450,000
7	Shehu & Partners	150,000	150,000	150,000	150,000	150,000	150,000	200,000	200,000	200,000	200,000
8	Timi Kemiki & Co	220,000	220,000	220,000	220,000	250,000	250,000	250,000	250,000	300,000	300,000
9	David Adoga & Partners	300,000	300,000	300,000	300,000	300,000	350,000	350,000	350,000	350,000	350,000
10	Aliyu Y.M. & Partners	200,000	200,000	200,000	250,000	250,000	250,000	280,000	280,000	280,000	300,000
	Mean Rental Value	232,000	232,000	237,000	250,000	258,000	275,000	291,000	296,000	306,000	315,000

Appendix G8: Average Rental Values of 3 Bedrooms Apartments in Tayi Village, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	130,000	130,000	130,000	150,000	150,000	150,000	180,000	180,000	180,000	180,000
2	Adamu Muhmmmed & Partners	200,000	220,000	220,000	220,000	230,000	230,000	230,000	250,000	250,000	250,000
3	Alagbe & Partners	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000
4	Babatunde & Co.	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000
5	M.B. Nuhu & Co	120,000	120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	150,000
6	Thomas Diko & Co.	200,000	220,000	220,000	220,000	230,000	230,000	230,000	250,000	250,000	250,000
7	Shehu & Partners	100,000	100,000	100,000	120,000	120,000	120,000	150,000	150,000	150,000	180,000
8	Timi Kemiki & Co	120,000	120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	150,000
9	David Adoga & Partners	120,000	120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	150,000
10	Aliyu Y.M. & Partners	200,000	220,000	220,000	220,000	230,000	230,000	230,000	250,000	250,000	250,000
	Mean Rental Value	139,000	145,000	145,000	153,000	156,000	156,000	177,000	183,000	183,000	192,000

Appendix G9: Average Rental Values of Bedrooms Apartments in Tunga, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	200,000	200,000	200,000	250,000	250,000	250,000	300,000	300,000	300,000	350,000
2	Adamu Muhmmmed & Partners	250,000	250,000	250,000	250,000	250,000	300,000	300,000	300,000	300,000	300,000
3	Alagbe & Partners	200,000	200,000	200,000	200,000	250,000	250,000	250,000	250,000	300,000	300,000
4	Babatunde & Co.	180,000	180,000	180,000	200,000	200,000	200,000	250,000	250,000	250,000	280,000
5	M.B. Nuhu & Co	150,000	150,000	150,000	150,000	150,000	150,000	200,000	200,000	200,000	200,000
6	Thomas Diko & Co.	380,000	400,000	400,000	400,000	450,000	450,000	450,000	500,000	500,000	500,000
7	Shehu & Partners	180,000	180,000	180,000	200,000	200,000	200,000	250,000	250,000	250,000	280,000
8	Timi Kemiki & Co	180,000	180,000	180,000	200,000	200,000	200,000	250,000	250,000	250,000	300,000
9	David Adoga & Partners	250,000	250,000	300,000	300,000	300,000	300,000	300,000	400,000	400,000	400,000
10	Aliyu Y.M. & Partners	200,000	200,000	200,000	200,000	250,000	250,000	250,000	250,000	300,000	300,000
	Mean Rental Value	217,000	219,000	224,000	235,000	250,000	255,000	280,000	295,000	305,000	321,000

Appendix G10: Average Rental Values of 3 Bedrooms Apartments in Maitumbi, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	150,000	150,000	150,000	180,000	180,000	180,000	200,000	200,000	200,000	200,000

2	Adamu Muhmmmed & Partners	120,000	120,000	150,000	150,000	150,000	180,000	180,000	180,000	200,000	200,000
3	Alagbe & Partners	150,000	150,000	180,000	180,000	180,000	200,000	200,000	200,000	200,000	200,000
4	Babatunde & Co.	120,000	120,000	120,000	130,000	130,000	130,000	150,000	150,000	150,000	180,000
5	M.B. Nuhu & Co	120,000	120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	150,000
6	Thomas Diko & Co.	220,000	230,000	230,000	230,000	250,000	250,000	250,000	300,000	300,000	300,000
7	Shehu & Partners	150,000	150,000	150,000	180,000	180,000	180,000	200,000	200,000	200,000	200,000

8	Timi Kemiki & Co	120,000	120,000	120,000	130,000	130,000	130,000	150,000	150,000	150,000	180,000
9	David Adoga & Partners	120,000	120,000	120,000	130,000	130,000	130,000	150,000	150,000	150,000	180,000
10	Aliyu Y.M. & Partners	120,000	120,000	120,000	120,000	120,000	120,000	150,000	150,000	150,000	150,000
	Mean Rental Value	139,000	140,000	146,000	155,000	157,000	162,000	178,000	183,000	185,000	194,000

Appendix G11: Average Rental Values of 3 Bedrooms Apartments in F-Layout, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	250,000	250,000	250,000	300,000	300,000	300,000	350,000	350,000	400,000	400,000
2	Adamu Muhmmmed & Partners	300,000	300,000	300,000	300,000	350,000	300,000	300,000	300,000	300,000	300,000
3	Alagbe & Partners	150,000	150,000	180,000	180,000	180,000	200,000	200,000	200,000	250,000	250,000
4	Babatunde & Co.	200,000	200,000	200,000	220,000	220,000	220,000	250,000	250,000	250,000	280,000
5	M.B. Nuhu & Co	140,000	140,000	140,000	140,000	140,000	140,000	150,000	150,000	170,000	170,000
6	Thomas Diko & Co.	400,000	400,000	430,000	430,000	450,000	450,000	450,000	500,000	500,000	500,000
7	Shehu & Partners	200,000	200,000	200,000	220,000	220,000	220,000	250,000	250,000	250,000	280,000
8	Timi Kemiki & Co	200,000	200,000	200,000	250,000	250,000	250,000	280,000	280,000	280,000	300,000

9	David Adoga & Partners	200,000	200,000	200,000	220,000	220,000	220,000	250,000	250,000	250,000	280,000
10	Aliyu Y.M. & Partners	150,000	150,000	150,000	150,000	160,000	160,000	170,000	170,000	200,000	200,000
	Mean Rental Value	219,000	219,000	225,000	241,000	249,000	246,000	265,000	270,000	285,000	296,000

Appendix G12: Average Rental Values of 3 Bedrooms Apartments in Fadikpe, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	150,000	150,000	150,000	180,000	180,000	180,000	180,000	200,000	200,000	200,000
2	Adamu Muhmmmed & Partners	180,000	180,000	180,000	180,000	200,000	200,000	200,000	200,000	200,000	200,000
3	Alagbe & Partners	150,000	150,000	150,000	150,000	150,000	180,000	180,000	180,000	180,000	180,000
4	Babatunde & Co.	120,000	120,000	120,000	130,000	130,000	130,000	130,000	130,000	130,000	180,000
5	M.B. Nuhu & Co	150,000	150,000	150,000	150,000	150,000	150,000	200,000	200,000	200,000	200,000

6	Thomas Diko & Co.	300,000	300,000	300,000	300,000	320,000	320,000	320,000	350,000	350,000	350,000
7	Shehu & Partners	120,000	120,000	150,000	150,000	150,000	180,000	180,000	180,000	200,000	200,000
8	Timi Kemiki & Co	150,000	150,000	150,000	180,000	180,000	180,000	200,000	200,000	200,000	200,000
9	David Adoga & Partners	100,000	120,000	120,000	130,000	130,000	130,000	130,000	130,000	150,000	180,000
10	Aliyu Y.M. & Partners	150,000	150,000	150,000	150,000	150,000	150,000	200,000	200,000	200,000	200,000
	Mean Rental Value	157,000	159,000	162,000	170,000	174,000	180,000	192,000	197,000	201,000	209,000

Appendix G13: Average Rental Values of 3 Bedrooms Apartments in GRA, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	250,000	250,000	250,000	300,000	300,000	300,000	350,000	350,000	350,000	350,000

2	Adamu Muhmmmed & Partners	300,000	300,000	300,000	300,000	350,000	350,000	350,000	350,000	350,000	350,000
3	Alagbe & Partners	300,000	300,000	300,000	300,000	300,000	350,000	350,000	400,000	400,000	400,000
4	Babatunde & Co.	200,000	200,000	200,000	200,000	200,000	250,000	250,000	250,000	300,000	300,000
5	M.B. Nuhu & Co	200,000	200,000	200,000	200,000	200,000	200,000	200,000	300,000	300,000	350,000
6	Thomas Diko & Co.	500,000	500,000	600,000	600,000	600,000	650,000	650,000	700,000	700,000	700,000
7	Shehu & Partners	300,000	300,000	300,000	300,000	300,000	350,000	350,000	400,000	400,000	400,000
8	Timi Kemiki & Co	300,000	300,000	320,000	320,000	320,000	350,000	350,000	400,000	400,000	400,000
9	David Adoga & Partners	200,000	200,000	200,000	200,000	200,000	250,000	250,000	250,000	300,000	300,000
10	Aliyu Y.M. & Partners	200,000	200,000	200,000	200,000	200,000	200,000	200,000	300,000	300,000	300,000
	Mean Rental Value	275,000	275,000	287,000	292,000	297,000	325,000	330,000	370,000	380,000	385,000

Appendix G14: Average Rental Values of 3 Bedrooms Apartments in Dutsen Kura, 2011 – 2020

S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	200,000	200,000	200,000	220,000	220,000	220,000	250,000	300,000	300,000	350,000
2	Adamu Muhmmmed & Partners	250,000	250,000	270,000	270,000	270,000	270,000	270,000	280,000	280,000	280,000
3	Alagbe & Partners	250,000	250,000	250,000	250,000	250,000	270,000	270,000	270,000	300,000	300,000
4	Babatunde & Co.	130,000	130,000	130,000	150,000	150,000	150,000	170,000	170,000	170,000	180,000
5	M.B. Nuhu & Co	150,000	150,000	150,000	150,000	150,000	150,000	200,000	200,000	200,000	200,000
6	Thomas Diko & Co.	250,000	250,000	300,000	300,000	320,000	320,000	320,000	350,000	350,000	350,000
7	Shehu & Partners	150,000	150,000	150,000	150,000	150,000	200,000	200,000	200,000	200,000	200,000
8	Timi Kemiki & Co	150,000	150,000	150,000	180,000	180,000	180,000	200,000	200,000	200,000	200,000
9	David Adoga & Partners	250,000	250,000	250,000	250,000	250,000	270,000	270,000	270,000	300,000	300,000

10	Aliyu Y.M. & Partners	130,000	130,000	130,000	150,000	150,000	150,000	170,000	170,000	170,000	180,000
	Mean Rental Value	191,000	191,000	198,000	207,000	209,000	218,000	232,000	241,000	247,000	254,000
Appendix G15: Average Rental Values of 3 Bedrooms Apartments in Jikpan, 2011 – 2020											
S/N	ESV Firms	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	A.U. Salihu & Associates	200,000	200,000	200,000	220,000	220,000	220,000	250,000	250,000	300,000	300,000
2	Adamu Muhmmmed & Partners	250,000	250,000	250,000	280,000	280,000	280,000	280,000	300,000	300,000	300,000
3	Alagbe & Partners	250,000	250,000	250,000	250,000	300,000	300,000	300,000	300,000	350,000	350,000
4	Babatunde & Co.	200,000	200,000	200,000	250,000	250,000	280,000	280,000	280,000	280,000	300,000
5	M.B. Nuhu & Co	200,000	220,000	220,000	250,000	250,000	250,000	280,000	280,000	280,000	300,000
6	Thomas Diko & Co.	180,000	280,000	200,000	200,000	230,000	230,000	230,000	250,000	250,000	250,000
7	Shehu & Partners	250,000	250,000	250,000	250,000	300,000	300,000	300,000	300,000	350,000	350,000
8	Timi Kemiki & Co	250,000	250,000	250,000	250,000	300,000	300,000	300,000	300,000	350,000	350,000
9	David Adoga & Partners	200,000	200,000	200,000	250,000	250,000	250,000	280,000	280,000	280,000	300,000
10	Aliyu Y.M. & Partners	200,000	200,000	220,000	250,000	250,000	250,000	280,000	280,000	280,000	300,000
	Mean Rental Value	218,000	230,000	224,000	245,000	263,000	266,000	278,000	282,000	302,000	310,000

Appendix B

Spearman's Correlation Matrix of Factors Influencing Tenants' Choice of Accommodation across Neighbourhoods

	TdF	B.T	B.E	Jik	GR A	F.L	D.K	Fad	Kpa	B.S	S.K	Tun	Sha	Cha
TdF	1.00	.570*	.643*	.642*	.505*	.635*	.735	.593*	.836	.420	.552*	.668	.656*	.388
B.T	.570*	1.00	.482	.928	.290	.340	.528*	.416	.792	.553*	.390	.559	.795	.568*
B.E	.643*	.482	1.00	.520*	.425	.847	.705	.749	.625*	.709	.771	.908	.736	.789
Jik	.642*	.928	.520*	1.00	.194	.347	.540*	.432	.837	.570*	.401	.619	.759	.524*
GR A	.505*	.290	.425	.194	1.00	.608*	.250	.165	.430	.140	.274	.217	.487	.315
F.L	.635*	.340	.847	.347	.608*	1.00	.443	.510*	.503*	.373	.748	.681	.479	.464
D.K	.735	.528*	.705	.540*	.250	.443	1.00	.913	.678	.807	.518	.857	.832	.690
Fad	.593*	.416	.749	.432	.165	.510*	.913	1.00	.609*	.802	.660	.846	.756	.633*
Mak	.840	.449	.826	.527*	.446	.845	.735	.756	.694	.484	.728	.824	.614*	.426
Kpa	.836	.792	.625*	.837	.430	.503*	.678	.609*	1.00	.626*	.553	.683	.804	.544*
B.S	.420	.553*	.709	.570*	.140	.373	.807	.802	.626*	1.00	.487	.834	.844	.889
S.K	.552*	.390	.771	.401	.274	.748	.518*	.660	.553*	.487	1.00	.625	.528*	.405
Tun	.668	.559*	.908	.619*	.217	.681	.857	.846	.683	.834	.625	1.00	.774	.804
Sha	.656*	.795	.736	.759	.487	.479	.832	.756	.804	.844	.528	.774	1.00	.827
Cha	.388	.568*	.789	.524*	.315	.464	.690	.633*	.544*	.889	.405	.804	.827	1.00

*. Correlation is significant at the 0.05 level (1-tailed).
Source: Researcher's computation (2022).

APPENDIX C

RESPONSES USED FOR RELATIVE IMPORTANCE INDEX ANALYSIS WITH RESPECT TO FACTORS RESPONSIBLE FOR RENTAL VARIATION IN VARIOUS NEIGHBOURHOODS OF THE STUDY AREA

Tudun Fulani

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0 (0)	4 (8)	4 (12)	1 (4)	9 (24)
2	Direct Access to Tarred Road	0 (0)	3 (6)	6 (18)	0 (0)	9 (24)
3	Stable Electricity Supply	3 (3)	5 (10)	1 (3)	0 (0)	9 (16)
4	Quality of Neighbourhood	0 (0)	3 (6)	5 (15)	1 (4)	9 (24)
5	Adequate Water Supply	3 (3)	6 (12)	0 (0)	0 (0)	9 (15)
6	Number of Bedrooms	0 (0)	4 (8)	3 (9)	2 (8)	9 (25)
7	Number of Toilets and Bathrooms	0 (0)	3 (6)	4 (12)	2 (8)	9 (26)
8	Size of the building	0 (0)	4 (8)	4 (12)	1 (8)	9 (24)
9	Presence of Tertiary Institutions, banks, public offices, etc.	0 (0)	9 (18)	0 (0)	0 (0)	9 (18)
10	Proximity to recreational facilities	1 (1)	8 (16)	0 (0)	0 (0)	9 (17)
11	Presence of Recreational Amenities	2 (2)	7 (14)	0 (0)	0 (0)	9 (16)
12	Availability of Day and Night Watch Security	4 (4)	5 (10)	0 (0)	0 (0)	9 (14)

Bosso Town

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	1 (1)	10 (20)	36 (108)	13 (52)	60 (181)
2	Direct Access to Tarred Road	5 (5)	27 (54)	18 (54)	10 (40)	60 (153)
3	Stable Electricity Supply	14 (14)	35 (70)	8 (24)	3 (12)	60 (120)
4	Quality of Neighbourhood	9 (9)	15 (30)	26 (78)	10 (40)	60 (157)
5	Adequate Water Supply	15 (15)	27 (54)	15 (45)	3 (12)	60 (126)
6	Number of Bedrooms	6 (6)	13 (26)	33 (99)	8 (32)	60 (163)
7	Number of Toilets and Bathrooms	1 (1)	16 (32)	35 (105)	8 (24)	60 (162)
8	Size of the building	2 (2)	20 (40)	28 (84)	10 (40)	60 (166)
9	Presence of Tertiary Institutions, banks, public offices, etc.	4 (4)	5 (10)	30 (90)	21 (84)	60 (180)
10	Proximity to recreational facilities	25 (25)	18 (36)	9 (27)	8 (32)	60 (120)
11	Presence of Recreational Amenities	29 (29)	22 (44)	4 (12)	5 (20)	60 (105)
12	Availability of Day and Night Watch Security	29 (29)	21 (42)	3 (9)	7 (27)	60 (107)

Bosso Estate

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0 (0)	2 (4)	5 (15)	3 (12)	10 (31)
2	Direct Access to Tarred Road	0 (0)	3 (6)	4 (12)	3 (12)	10 (30)
3	Stable Electricity Supply	1 (1)	7 (14)	1 (3)	1 (4)	10 (22)
4	Quality of Neighbourhood	0 (0)	0 (0)	7 (21)	3 (12)	10 (33)
5	Adequate Water Supply	1 (1)	5 (10)	2 (6)	2 (8)	10 (25)
6	Number of Bedrooms	0 (0)	1 (2)	6 (18)	3 (12)	10 (32)
7	Number of Toilets and Bathrooms	0 (0)	2 (4)	6 (18)	2 (8)	10 (30)
8	Size of the building	0 (0)	2 (4)	4 (12)	4 (16)	10 (32)
9	Presence of Tertiary Institutions, banks, public offices, etc.	1 (1)	8 (16)	1 (3)	0 (0)	10 (20)
10	Proximity to recreational facilities	4 (4)	6 (12)	0 (0)	0 (0)	10 (16)
11	Presence of Recreational Amenities	3 (3)	7 (14)	0 (0)	0 (0)	10 (17)
12	Availability of Day and Night Watch Security	1 (1)	5 (10)	3 (9)	1 (4)	10 (24)

Jikpan

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0 (0)	3 (6)	7 (21)	1 (4)	11 (31)

2	Direct Access to Tarred Road	4 (4)	6 (12)	0 (9)	1 (4)	11 (20)
3	Stable Electricity Supply	5 (51)	4 (8)	2 (6)	0 (0)	11 (19)
4	Quality of Neighbourhood	4 (4)	2 (4)	4 (12)	1 (4)	11 (24)
5	Adequate Water Supply	5 (5)	2 (4)	4 (12)	0 (0)	11 (21)
6	Number of Bedrooms	2 (2)	2 (4)	5 (15)	2 (8)	11 (29)
7	Number of Toilets and Bathrooms	0 (0)	5 (10)	6 (18)	0 (0)	11 (28)
8	Size of the building	0 (0)	5 (10)	5 (15)	1 (1)	11 (26)
9	Presence of Tertiary Institutions, banks, public offices, etc.	0 (0)	0 (0)	4 (12)	7 (24)	11 (36)
10	Proximity to recreational facilities	5 (5)	6 (12)	0 (0)	0 (0)	11 (17)
11	Presence of Recreational Amenities	3 (3)	8 (16)	0 (0)	0 (0)	11 (19)
12	Availability of Day and Night Watch Security	6 (6)	3 (6)	2 (6)	0 (0)	11 (18)

GRA

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0 (0)	1 (2)	9 (18)	0 (0)	10 (20)
2	Direct Access to Tarred Road	0 (0)	1 (2)	2 (6)	7 (28)	10 (36)
3	Stable Electricity Supply	0 (0)	5 (10)	4 (12)	1 (4)	10 (26)
4	Quality of Neighbourhood	0 (0)	0 (0)	7 (21)	3 (12)	10 (33)

5	Adequate Water Supply	0 (0)	1 (2)	5 (15)	4 (16)	10 (33)
6	Number of Bedrooms	0 (0)	0 (0)	5(15)	5 (20)	10 (35)
7	Number of Toilets and Bathrooms	0 (0)	0 (0)	6 (18)	4 (16)	10 (34)
8	Size of the building	0 (0)	0 (0)	5 (15)	5 (20)	10 (35)
9	Presence of Tertiary Institutions, banks, public offices, etc.	0 (0)	1 (2)	5 (15)	4 (16)	10 (33)
10	Proximity to recreational facilities	0 (0)	1 (2)	5 (15)	4 (16)	10 (33)
11	Presence of Recreational Amenities	0 (0)	9 (18)	1 (3)	0 (0)	10 (21)
12	Availability of Day and Night Watch Security	1 (1)	0 (0)	9 (27)	0 (0)	10 (28)

F-Layout

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0 (0)	3 (6)	5 (15)	0 (0)	8 (21)
2	Direct Access to Tarred Road	0 (0)	0 (0)	5 (15)	3 (12)	8 (27)
3	Stable Electricity Supply	0 (0)	5 (10)	2 (6)	1 (4)	8 (20)
4	Quality of Neighbourhood	0 (0)	1 (2)	4 (12)	3 (12)	8 (26)
5	Adequate Water Supply	3 (3)	5 (10)	0 (0)	0 (0)	8 (15)
6	Number of Bedrooms	0 (0)	2 (4)	5 (15)	1 (4)	8 (23)
7	Number of Toilets and Bathrooms	0 (0)	4 (8)	2 (6)	2 (8)	8 (22)
8	Size of the building	0 (0)	0 (0)	5 (15)	3 (12)	8 (27)
9	Presence of Tertiary Institutions, banks, public offices, etc.	0 (0)	7 (14)	1 (3)	0 (0)	8 (17)

10	Proximity to recreational facilities	2 (2)	3 (6)	2 (2)	1 (4)	8 (14)
11	Presence of Recreational Amenities	2 (2)	6 (12)	0 (0)	0 (0)	8 (14)
12	Availability of Day and Night Watch Security	1 (1)	2 (4)	4 (12)	1 (4)	8 (21)

Dutsen Kura

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0 (0)	2 (4)	3 (9)	4 (16)	9 (29)
2	Direct Access to Tarred Road	3 (3)	6 (12)	0 (0)	0 (0)	9 (15)
3	Stable Electricity Supply	2 (2)	5 (10)	2 (6)	0 (0)	9 (18)
4	Quality of Neighbourhood	0 (0)	0 (0)	9 (27)	0 (0)	9 (27)
5	Adequate Water Supply	3 (3)	5 (10)	0 (0)	1 (4)	9 (17)
6	Number of Bedrooms	0 (0)	0 (0)	5 (15)	4 (16)	9 (31)
7	Number of Toilets and Bathrooms	0 (0)	0 (0)	7 (21)	2 (8)	9 (29)
8	Size of the building	0 (0)	1 (2)	7 (21)	1 (4)	9 (27)
9	Presence of Tertiary Institutions, banks, public offices, etc.	5 (5)	4 (8)	0 (0)	0 (0)	9 (13)
10	Proximity to recreational facilities	3 (3)	5 (10)	1 (3)	0 (0)	9 (16)
11	Presence of Recreational Amenities	5 (5)	5 (10)	1 (3)	0 (0)	9 (13)
12	Availability of Day and Night Watch Security	3 (3)	4 (8)	2 (6)	0 (0)	9 (7)

Fadikpe

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0 (0)	2 (4)	3 (9)	4 (16)	9 (29)
2	Direct Access to Tarred Road	3 (3)	6 (12)	0 (0)	0 (0)	9 (15)
3	Stable Electricity Supply	2 (2)	5 (10)	2 (6)	0 (0)	9 (18)
4	Quality of Neighbourhood	0 (0)	0 (0)	9 (27)	0 (0)	9 (27)
5	Adequate Water Supply	3 (3)	5 (10)	0 (0)	1 (4)	9 (17)
6	Number of Bedrooms	0 (0)	0 (0)	5 (15)	4 (16)	9 (12)
7	Number of Toilets and Bathrooms	0 (0)	0 (0)	7 (21)	2 (8)	9 (29)
8	Size of the building	0 (0)	1 (2)	7 (21)	1 (4)	9 (27)
9	Presence of Tertiary Institutions, banks, public offices, etc.	5 (5)	4 (8)	0 (0)	0 (0)	9 (13)
10	Proximity to recreational facilities	3 (3)	5 (10)	1 (3)	0 (0)	9 (16)
11	Presence of Recreational Amenities	5 (5)	4 (8)	0 (0)	0 (0)	9 (13)
12	Availability of Day and Night Watch Security	3 (3)	4 (8)	2 (6)	0 (0)	9 (17)

Maitumbi

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0 (0)	3 (6)	10 (30)	10 (40)	23 (76)

2	Direct Access to Tarred Road	0 (0)	7 (14)	5 (15)	11 (44)	23 (73)
3	Stable Electricity Supply	3 (3)	11 (22)	9 (27)	0 (0)	23 (52)
4	Quality of Neighbourhood	1 (1)	7 (14)	7 (21)	8 (32)	23 (58)
5	Adequate Water Supply	7 (7)	5 (10)	9 (27)	2 (8)	23 (52)
6	Number of Bedrooms	4 (4)	5 (10)	8 (24)	6 (24)	23 (62)
7	Number of Toilets and Bathrooms	7 (7)	2 (4)	10 (30)	4 (16)	23 (57)
8	Size of the building	2 (2)	3 (6)	6 (18)	12 (48)	23 (74)
9	Presence of Tertiary Institutions, banks, public offices, etc.	3 (3)	9 (18)	9 (27)	2 (8)	23 (56)
10	Proximity to recreational facilities	3 (3)	6 (12)	14 (42)	0 (0)	23 (57)
11	Presence of Recreational Amenities	11 (11)	9 (18)	3 (9)	0 (0)	23 (38)
12	Availability of Day and Night Watch Security	8 (8)	6 (12)	6 (18)	3 (12)	23 (50)

Kpakungu

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	1(1)	4(8)	9(27)	5(20)	19(56)
2	Direct Access to Tarred Road	3(3)	9(18)	3(9)	4(16)	19(46)
3	Stable Electricity Supply	9(9)	9(18)	1(3)	0(0)	19(30)
4	Quality of Neighbourhood	4(4)	3(6)	11(33)	1(4)	19(47)
5	Adequate Water Supply	5(5)	7(14)	5(15)	2(8)	19(42)

6	Number of Bedrooms	0(0)	2(4)	13(39)	4(16)	19(59)
7	Number of Toilets and Bathrooms	0(0)	2(4)	14(42)	3(12)	19(58)
8	Size of the building	0(0)	7(14)	12(36)	0(0)	19(50)
9	Presence of Tertiary Institutions, banks, public offices, etc.	3(3)	7(14)	5(15)	4(16)	19(48)
10	Proximity to recreational facilities	6(6)	10(20)	3(9)	0(0)	19(35)
11	Presence of Recreational Amenities	9(9)	10(20)	0(0)	0(0)	19(29)
12	Availability of Day and Night Watch Security	8(8)	9(18)	2(6)	0(0)	19(32)

Sauka Kahuta

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0(0)	3(6)	1(3)	3(12)	7(21)
2	Direct Access to Tarred Road	1(1)	3(6)	0(0)	3(12)	7(19)
3	Stable Electricity Supply	0(0)	7(14)	0(0)	0(0)	7(14)
4	Quality of Neighbourhood	0(0)	3(6)	4(12)	0(0)	7(18)
5	Adequate Water Supply	0(0)	7(14)	0(0)	0(0)	7(14)
6	Number of Bedrooms	0(0)	2(4)	3(9)	2(8)	7(21)
7	Number of Toilets and Bathrooms	0(0)	2(4)	4(12)	1(4)	7(17)
8	Size of the building	0(0)	3(6)	2(6)	2(8)	7(20)
9	Presence of Tertiary Institutions, banks, public offices, etc.	2(2)	4(8)	0(0)	1(4)	7(14)
10	Proximity to recreational facilities	2(2)	4(8)	0(0)	1(4)	7(14)

11	Presence of Recreational Amenities	2(2)	4(8)	0(0)	1(4)	7(14)
12	Availability of Day and Night Watch Security	0(0)	3(6)	3(9)	1(4)	7(19)

Tung
a

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0(0)	1(2)	5(15)	5(20)	11(37)
2	Direct Access to Tarred Road	0(0)	7(14)	0(0)	4(14)	11(28)
3	Stable Electricity Supply	0(0)	4(8)	5(15)	2(8)	11(31)
4	Quality of Neighbourhood	0(0)	2(4)	1(3)	8(32)	11(39)
5	Adequate Water Supply	1(0)	6(12)	2(6)	2(8)	11(28)
6	Number of Bedrooms	0(0)	0(0)	7(21)	4(16)	11(37)
7	Number of Toilets and Bathrooms	0(0)	2(4)	5(15)	4(16)	11(35)
8	Size of the building	1(0)	0(0)	5(15)	5(20)	11(35)
9	Presence of Tertiary Institutions, banks, public offices, etc.	2(0)	2(4)	5(15)	2(8)	11(27)
10	Proximity to recreational facilities	7(0)	4(8)	0(0)	0(0)	11(8)
11	Presence of Recreational Amenities	7(0)	4(8)	0(0)	0(0)	11(8)
12	Availability of Day and Night Watch Security	3(0)	2(4)	6(18)	0(0)	11(22)

Shango

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0(0)	1(2)	7(21)	2(8)	10(31)
2	Direct Access to Tarred Road	0(0)	7(14)	2(6)	1(4)	10(24)
3	Stable Electricity Supply	3(3)	6(12)	1(3)	0(0)	10(18)
4	Quality of Neighbourhood	0(0)	3(6)	5(15)	2(8)	10(29)
5	Adequate Water Supply	0(0)	2(4)	5(15)	3(12)	10(31)
6	Number of Bedrooms	0(0)	0(0)	7(21)	3(12)	10(33)
7	Number of Toilets and Bathrooms	0(0)	2(4)	5(15)	3(12)	10(31)
8	Size of the building	0(0)	2(4)	5(15)	3(12)	10(31)
9	Presence of Tertiary Institutions, banks, public offices, etc.	2(2)	3(6)	2(6)	3(12)	10(26)
10	Proximity to recreational facilities	6(6)	1(2)	3(9)	0(0)	10(17)
11	Presence of Recreational Amenities	8(8)	2(4)	0(0)	0(0)	10(12)
12	Availability of Day and Night Watch Security	6(6)	4(8)	0(0)	0(0)	10(14)

Chanchaga

S/N	Reason for Occupying Property	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Total
1	Condition of the Building	0(0)	8(16)	12(36)	3(12)	23(64)
2	Direct Access to Tarred Road	2(2)	14(28)	6(18)	1(4)	23(52)
3	Stable Electricity Supply	5(5)	6(12)	9(27)	3(12)	23(56)
4	Quality of Neighbourhood	0(0)	8(16)	11(33)	4(16)	23(65)
5	Adequate Water Supply	0(0)	2(4)	11(33)	10(40)	23(77)

6	Number of Bedrooms	3(3)	7(14)	7(21)	6(24)	23(62)
7	Number of Toilets and Bathrooms	2(2)	10(20)	6(18)	5(20)	23(60)
8	Size of the building	1(1)	10(20)	7(21)	5(20)	23(62)
9	Presence of Tertiary Institutions, banks, public offices, etc.	4(4)	17(34)	1(3)	1(4)	23(45)
10	Proximity to recreational facilities	7(7)	13(26)	1(3)	2(8)	23(44)
11	Presence of Recreational Amenities	7(7)	15(30)	1(3)	0(0)	23(49)
12	Availability of Day and Night Watch Security	7(7)	12(24)	3(9)	1(4)	23(44)

APPENDIX D

CRONBACH RELIABILITY TEST OF RESPONSES GOTTEN ON THE FACTORS INFLUENCING TENANTS' CHOICE OF ACCOMMODATION

S/N	NEIGHBOURHOOD	CRONBACH ALPHA COEFFICIENT
1	Tundun Fulani	0.18
2	Bosso town	0.70
3	Bosso estate	0.60
4	Jikpan	0.16
5	GRA	0.55
6	F-layout	0.41
7	Dutsen kura	0.48
8	Fadikpe	0.40
9	Maitumbi	0.75
10	Kpakungu	0.48
11	Sauka-kahuta	0.81
12	Tunga	0.69
13	Shango	0.71

14	Chanchaga	0.84
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Key for the Correlation Matrix

TdF	Tundun
	Fulani
B.T	Bosso
	town
B.E	Bosso
	estate
Jik	Jikpan
GRA	GRA
F.L	F-layout
D.K	Dutsen
	kura
Fad	Fadikpe
Mai	Maitumbi
Kpa	Kpakungu
S.K	Sauka
	kahuta
Tun	Tunga
Sha	Shango
Cha	Chanchaga

APPENDIX E



DEPARTMENT OF ESTATE MANAGEMENT AND VALUATION
 FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE

RESEARCH QUESTIONNAIRE
(ESTATE SURVEYORS AND VALUERS)

Dear Sir/Ma,

I am a post graduate student of the above-named Department in the above-named Institution. I am carrying out a research on the “Determinants of Variation in Residential Property Rental Values in Minna” in partial fulfillment of the requirements for the award of Master’s Degree (M.Tech) in Estate Management and Valuation. I hereby solicit for your assistance in filling this questionnaire.

All information supplied shall be strictly used for the research purpose and be treated with utmost confidentiality.

Thank you.

BALA, Maimuna Kuta.
(Researcher)
08033806952

Section A
(Respondent’s Profile)
(Please fill or tick as appropriate)

1. Name of firm or Establishment

2. Firm’s office in Minna (a) Head Office [] (b) Branch Office []
3. Firm’s staff strength _____
4. Academic qualification of Principal Partner or Branch Manager (a) OND []
(b) HND [] (c) B.Sc. /Tech. [] (d) M.Sc. /Tech. [] (e) Ph. D [] (f) others
(Please specify) _____
5. Professional qualifications of Principal Partner or Branch Manager (a) Associate below 10 years [] (b) Associate above 10 years (c) Fellow [] (d) Others (Please specify) _____
6. Firm’s years of experience (a) Less than 5 years (b) 5-10 years [] (c) 11-15 years

- (d) 16-20 years (e) 21 years and above []
7. What type of properties do your firm manage in Minna? (a) Residential [](b) Commercial [] (c) Both Residential and Commercial []
8. Rent received _____
9. How long have you been managing the Property?

10. Property Type: (a) single-room tenement (b) one-bedroom House (c) twobedroom flat (d) three-bedroom flat (e) four-bedroom Bungalow (f) others, please specify _____
11. How do you collect your rent? (a) Annually (b) Monthly (c) Quarterly (every 3 months) (d) Twice a year (e) others, please specify _____
12. What is the interval of the rent review? (a) 2years (b) 3years (c) 5years (d) more than 5years
13. How is your Rent compared with other Neighborhoods? (a) High (b) Moderate (c) Low

Section B

(Average Annual Rental Values of Residential Properties in Minna)

(Please fill as appropriate)

1. Kindly fill the average Annual Rental Values for 2 (TWO) BEDROOM APARTMENTS in the listed neighbourhoods in minna from 2011 to 2020

Year	Bosso Town	Shango	Sauka Kahuta	Kpakungu	Tudun Fulani	Chanchaga	Bosso Estate	Tayi Village
2011								
2012								
2013								
2014								
2015								
2016								
2017								
2018								
2019								
2020								

Year	Tunga	Maitumbi	F-Layout	Fadikpe	GRA	Dutsen Kura	Jikpan
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							

2. Kindly fill the average annual rental values for 3 (THREE) BEDROOM APARTMENTS in the listed neighbourhoods in minna from 2011 to 2020

Year	Bosso Town	Shango	Sauka Kahuta	Kpakungu	Tudun Fulani	Chanchaga	Bosso Estate	Tayi Village
2011								
2012								

2013								
2014								
2015								
2016								
2017								
2018								
2019								
2020								

Year	Tunga	Maitumbi	F-Layout	Fadikpe	GRA	Dutsen Kura	Jikpan
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							

3. Are there variations in the rent paid by occupiers of the residential areas in the selected locations? (a) Yes [] (b) No []
4. The following factors have been outlined to cause residential rental variation in Minna. Kindly tick as applicable to properties you are managing.

S/N	Factors	V. Good	Good	Fair	Poor
1	Security				
2	Water supply				
3	Road network				
4	Drainage network				
5	Physical condition of house				
6	Sanitary condition of neighbourhood				
7	Location in relation to market				
8	Location in relation to police station				

9	Location in relation to school				
10	Location in relation to recreation facility				
11	Location in relation to healthcare facility				
12	Proximity to place of worship				
13	Affordable rent				
14	Proximity to place of work				
15	Stable electricity supply				

Thank You.

APPENDIX F



DEPARTMENT OF ESTATE MANAGEMENT AND VALUATION
 FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE
 RESEARCH QUESTIONNAIRE
 MINNA RESIDENTS

Dear Sir/Ma,

I am a post graduate student of the above-named Department in the above-named Institution. I am carrying out a research on the “Determinants of Variation in Residential Property Rental Values in Minna” in partial fulfillment of the requirements for the award of Master’s Degree (M.Tech) in Estate Management and Valuation. I hereby solicit for your assistance in filling this questionnaire.

All information supplied shall be strictly used for the research purpose and be treated with utmost confidentiality.

Thank you.

BALA, Maimuna Kuta.

(Researcher)
08033806952

To be administered to the residents

A. Socio-demographic Characteristics of Respondent

1. Name of Neighborhood:

(a) Tundun Fulani (b) Bosso Town (c) Bosso Estate (d) Jikpan (e) Tayi Village
(f) GRA (g) F-Layout (h) Dutsen Kura Hausa (i) Dutsen kura Gwari (j) Fadikpe
(k) Limawa (l) Nassarawa (m) Angwan Daji (n) Maitumbi (o) Sabon Gari (p)
Tundun Wada (q) Makera (r)Kpakungu (s) Barkin-Sale (t) Sauka Kauta (u)
Tunga (v) Shango (w) Minna Central (x)Chanchaga (y) others, please
specify_____

2. Gender (a) Male (b) Female

3. Age (a) 20-35years (b) 36-40years (c) 41years and
above

4. Marital Status (a) Single (b) Married (c) Divorced
(d)

Widow/er (e) Others, please specify

5. Occupation Family head (a) Civil Servant (b) self-employed (c)
others_____ 6. Occupation of spouse (a) Civil Servant (b) House
Wife (c) self-employed (d) others_____

7. Average Monthly Income of Family head (a) Below 30,000 (b) 30,
000-50,000 (c)
51,000-75,000 (d) 76,000-100,000 (e) Above 100,000

8. Average Monthly Income of Spouse (a) Below 30,000 (b) 30, 000-50,000 (c)
51,000-75,000 (d) 76,000-100,000 (e) Above 100,000

9. Family size/household number (only people presently living with you in your
house, excluding your children living on their own)

Male	Female	Children

10. How long have you occupied this Property?

B. PHYSICAL AND STRUCTURAL CHARACTERISTICS OF THE PROPERTY

11. Property Type: (a) single-room tenement (b) one-bedroom House (c) two-bedroom flat

(d) three-bedroom flat (e) four-bedroom Bungalow (f) others, please specify

12. Type of material of property construction (a) Sandcrete (b) (cement) Block

Mud Blocks

(c) Others, please specify.....

13. When was the property constructed?

14. Number of Bedroom (a) 1 (b) 2 (c) 3 (d) 4 (e) 5 (f) others, please state____

15. Number of Toilet (a) 1 (b) 2 (c) 3 (d) 4 (e) 5 others, please (f) state____

16. Number of Bathroom (a) 1 (b) 2 (c) 3 (d) 4 (e) 5 others, please (f) state____

17. Do you have Dining room (a) Yes (b) No

18. Do you have a Garage? (a) Yes (b) No

REMOVE

19. Do you have any recreational facility like swimming pool, tennis court, (a) and so on

Yes (b) No

20. Do you have Security personnel/Maiguard? (a) Yes (b) No

21. Condition of the Building (a) Good (b) Bad

C. LOCATIONAL CHARACTERISTICS OF THE PROPERTY

22. Accessibility to your house (a) Footpath (b) Untarred Road (c) Tarred Road

23. Distance from your house to your place of work? (a) 0-1km (b) 2-3km (c) 4-5km (d) others please specify-----
24. Distance from your house to a school? (a) 0-1km (b) 2-3km (c) 4-5km (d) others please specify-----
25. Distance from your house to a hospital? (a) 0-1km (b) 2-3km (c) 4-5km (d) others please specify-----
26. Distance from your house to any facility like Stadium, Parks and Gardens, etc.? (a) 0-1km (b) 2-3km (c) 4-5km (d) others please specify-----
27. Distance from your house to the Market (a) 0-1km (b) 2-3km (c) 4-5km (d) others please specify-----

D. NEIGHBORHOOD CHARACTERISTICS

28. Quality of Neighborhood (a) Very good (b) Good (c) Fair (d) Poor
29. How is the Crime rate in your Neighborhood? (a) High (b) Low
30. Do you have electricity supply? (a) Yes (b) No
31. Source of Electricity Supply (a) Main/public (b) Private (c) Both
32. Do you have Water Supply? (a) Yes (b) No
33. Source of Water Supply (a) Main/Public (b) Private/Borehole (c) Both
34. How do you dispose your refuse/waste (a) Burning (b) Dumpsite (c) Government Agency (d) Private Agency
35. Which of the following is present in your neighborhood? (Multiple responses allowed)
- (a) Banks (b) Market (c) Tertiary Institution (d) General Hospital (e) Government/Public office

E. RENTAL INFORMATION

36. How much do you pay as rent? _____

37. How do you pay your rent? (a) Annually (b) Monthly (c) Quarterly (every 3 months) (d) Twice a year (e) others, please specify_____
38. What is the interval of the rent review? (a) 2years (b) 3years (c) 5years (d) more than 5years
39. Who is responsible for carrying out repair (a) Landlord (b) Tenant (c) Both
40. How is your Rent compared with other Neighborhoods? (a) High (b) Moderate (c) Low
41. Please tick your reasons for occupying this property

S/N	Factors	Strongly Agree	Agree	Disagree	Strongly Disagree
1	Condition of the Building				
2	Direct Access to tarred road				
3	Stable electricity supply				
4	Quality of the neighborhood				
5	Adequate Water Supply				
6	Number of Bedrooms				
7	Number of Toilets and Bathrooms				
8	Size of the Building				
9	Presence of Tertiary institution, banks, public offices, etc)				
10	Proximity to Recreational Facilities (stadium, parks, gardens, etc.)				
11	Presence of recreational amenities (swimming pool, tennis court, etc.)				
12	Availability of Day and night Watch Security				
13	Good neighbourhood security				
14	Proximity to place of work				
15	Proximity to children school				
16	Proximity to market				

17	Proximity to place of worship				
18	Affordable rent				