

Road Construction and Property Values in Peri-Urban Areas in Ibadan, Nigeria

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Certification

This is to certify that this thesis titled “Road Construction and Property Value in Peri-Urban Areas in Ibadan, Nigeria”, was carried out by Oluwatobi Omoyemi AYODELE with matric no LCU/PG/003244, in the Department of Estate Management, Faculty of Environmental Design and Management, Lead City University, Ibadan, Oyo State, Nigeria and that this work had not been previously submitted.

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Dedication

This thesis is dedicated to God, the author and finisher of my faith, who has been the source of my strength throughout to the completion of this project work.

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Acknowledgement

It is an utmost privilege to study at this prestigious institution. I want to express my profound appreciation to my supervisor the HOD of the department Dr. Igbo Fayomi who is such a rare gem in human form. She is so wonderful, intelligent, and meticulous in managing the affairs of the department and for her contribution in this research.

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“Even though the above-mentioned institution and persons have assisted in the process of this research work, I stand responsible for the errors, if any is found in the work.

Abstract

This research investigated road construction and property value in peri-urban areas located in Ibadan, Nigeria. The study scrutinized the morphological features of the selected roads construction and the factors that influence the effect of road construction on property values. These were done to provide information that would aid prospective investors in making decisions. The research utilized primary data sources using self-administered questionnaires. A purposeful sampling technique was used. Findings revealed that 35(14%) of the respondents affirmed that the present state of the road is poor, 49 (19.60 %) thought that it is fair, 75(30%) of the respondents assumed that it is good, 91(36.40 %) of the respondents condemned that it is very good. On the trend in value of properties; the study found that the price for both rental and capital value was grossly increasing, of 3- bedroom flats over 11 years at 50%, that the renting price for 3-bedroom flats rose across the years (2013 – 2023). The upward trajectory of rental values for 3bedroom flats indicates a consistent and sustained increase over the studied period and 2bed flats apartments as well, it also found out that the demand for 2-bedroom flats has also increased trajectory at 50% due to growing demand for residential properties in the selected areas this is potentially driven by factors such as population growth and the availability of good road network in the study area. Findings revealed that value of properties increased because of high demand which is due to constructed roads in the study areas, highlighting concerns about functionality and property impacts. The study underscores a dynamic real estate market with rising values but stresses the need for balanced development to ensure affordability and address environmental and social impacts. Finally, the findings suggested a mixed perception of the road construction in the selected peri-urban area.

Keywords: Property, Property value, Road, Road Construction, Value

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List of Acronyms

Abbreviation	Meaning
ROW	Right of way

SO	Service Objective
OYTMA	Oyo State Road Traffic Management Agency
IVSC	International valuation Standard and committee
REITS	Real Estate Investment Trusts
LTV	Loan- to -Value

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Chapter One

Introduction

1.1 Background to the Study

The primary objective of investing in real estate properties is to acquire assets that ideally, generate a consistent and satisfactory income stream while also appreciating in capital value. The rationale behind such investments is to avoid undertaking projects that are neither feasible nor viable¹. Real estate properties often congregate along well-mentioned roads to capitalize on the benefits of agglomeration. Intense competition in these areas drives the locations along these roads to their peak and best use, consequently leading to higher rental and capital values compared to locations lacking such essential road infrastructure¹.

Property values can be influenced by both intrinsic and extrinsic factors². Example of intrinsic factors that can affect property value are, type of house, property size, property condition among others, while extrinsic factors such as accessibility, locational factors, security among others do affect property value. Other factors have to do with adequacy or inadequacy of infrastructural facilities in the property such as drainage system, electricity supply i.e., adequate infrastructure facilities on property and area makes the property to command higher value and inadequate infrastructural facilities deter return on the properties which makes the income accruable on the property to be lower². Other related factors include increase in demand for residential and commercial properties, location, nearness to park and leisure, local and national economic conditions. factors arise from within the nature of the property itself and relate to the physical attributes³. Other factors that influence the amount users are willing and able to pay in an open market transaction include the Physical features of the structure, shifts in sense of taste and demand, impacts of Nearby operations, economic conditions, price rises, and Legal reforms⁴.

The significance of transportation cannot be overstated. As urban populations expand, the need for efficient and sustainable urban mobility solutions becomes more pressing¹. It plays a central role in shaping the dynamic association between physical space and society, and any vicissitudes in transference profoundly impact the societal arrangement of activities within inner-city and regional spaces⁶. In the contemporary landscape, businesses, industries, trades, and overall societal functions rely heavily on transportation and its infrastructure. The movement of goods and services from one location to another has become a critical and intimate component of global and urban economic sustainability. It was observed that while transportation systems clearly enhance neighborhood accessibility, they negatively affect estate values⁷. This is manifested in the production of noise, pollution, crime, and, in the case of properties located directly in their path via stigma. These factors, both positive and negative, capitalized into the values of homes in the same way that extra bathrooms, swimming pools and/or desirable locations do.

Transportation and property perform critical roles in the physical and economic growth of towns and cities universally². In actual fact, transportation is the major factor to consider when choosing property. Property values typically rise in regions with expanding transportation networks, while they tend to increase at a slower pace in areas lacking such infrastructure enhancements³. Mostly in peril urban area transportation helps to improve livelihood. Rapid and continued rise in housing and land prices are expected in cities with transportation improvements and rapid economic and population growth⁴. This is because when an area is accessible, people will be willing to move their families to that area for residential purpose or businesses for commercial purpose.

Ibadan stands out as one of Nigeria's major cities that have undergone extensive growth and development, primarily propelled by urbanization and the provision of various social amenities such as roads and electricity. Commercial property, alternatively termed

commercial real estate, investment property, or income property, refers to real estate strategically designed to yield a profit, either through capital gains or rental income. This category encompasses diverse structures like offices, retail spaces (including stores, shopping centers, and shops), industrial facilities (warehouses and factories), leisure establishments (hotels, pubs, restaurants, cafes, and sports facilities), and healthcare facilities (medical centers, hospitals, and nursing homes)¹.

Rapid and continued rise in housing and land prices are expected in cities with transportation improvements and rapid economic and population growth. Road is any nation's greatest investment where every citizen is a shareholder. However, the burden of road construction, road caring or management is seen as the sole responsibility of the government⁵.

It has been identified that accessibility is a direct consequence of a good road, in turn, leads to increase capital and rental values of locations with greatest accessibility advantages. In a situation where all land and properties are accessible via motorable road network or easily accessible by pedestrians, such land will enjoy land or rental value conferred by virtue of accessibility⁵. Accessibility is a major player when it comes to value change of an environment, property's location and value are strongly interrelated.

Road constitutes an important element in urban development as roads provide accessibility to the different land uses in the urban area. Thus, the proper functioning of an urban area depends on an efficient transportation network³. The presence of major road access offers significant advantages, leading to the strategic placement of commercial entities to capitalize on these benefits. In the contemporary landscape, businesses, industries, trades, and overall activities rely extensively on transportation and associated infrastructure. The movement of goods and services has evolved into a critical and integral component of both global and urban economic sustainability⁹. The development of diverse transportation

modes, encompassing human portage, railways, ropeways, cableways, pipelines, inland waterways, sea routes, air travel, and road networks, has become indispensable to both physical and economic progress. Road transportation is a form of land transport that involves the movement of people and goods by motor cars, trucks, buses, motorcycles, and bicycles. Furthermore, they refer to road transportation as the most popular means of transport, even though their various means of transportation such as railways, airplanes, water, and roads are the most prominent because it is cheap and easy to access. The purpose of this research work is to examine the relationship between good road availability and property value for investment decision making.

1.2 Statement of the Problem

The impact of road on property value has been studied from many perspectives, including analyses of different types of systems, of residential versus commercial impacts, and studies that have attempted to isolate both positive and negative effects. The varied approaches create difficulty in comparing the results of one study to another. Further, some of the contradictory results over the years have often been due to differing methods of analysis, data quality, and regional differences. Some research findings have affirmed that there is a strong relationship between location and value of a property and improved accessibility is expected to increase property values¹⁰. It also stands to reason that investment in transportation system will bring economic benefits into urban areas. These benefits can range from user benefits to employment, income growth, social and urbanization benefits. Urban areas all over the world offer a number of advantages in terms of concentration of people followed by demand for commercial properties and transportation. Ikeja is a classic example of a city that has developed rapidly when it became the Lagos State capital¹¹.

Earlier theorists generally believed that sites adjacent to main transportation routes and key location attributes enjoy relative advantages compared to those situated at a distance, and other sites located at route connections possess relative advantages, with even greater benefits accruing to sites situated at the focal point of the transport system. These advantages are determined based on accessibility, which exhibits varying characteristics depending on the individual site's location. Road development projects are expansive and they exert a significant impact on the environment, landscape, spatial planning, and land management⁸. This study evaluates changes in the spatial structure of plots resulting from the construction of a city bypass. It shows that the writer focuses on the spatial planning, the land scape for the construction of the bypass road, failing to shed lighter to the revenue that will be generated from the morphology of the environment which is more important to the intending residence and even investor⁹. Another researcher examined the fluctuation and prospects of values appreciation on properties, which is due to population increases urbanization, in his research, it shows that there are many factors that determined trends in rental value of residential properties¹¹. These factors include location of the property, changes in building costs, the national situation change, change in population. These examined the trends in rental value of residential property in Osogbo in which the increase has brought about great improvement on the socio-economic life of the people at Osogbo. This research could be biased because the research work was done in small city so this conclusion cannot be used to draw fact in peri-urban areas in Ibadan Oyo State.

As much as the road construction effect on the properties, there are some factors that influencing it effect on the property value¹². The research problem adduced in the road construction project always Trans Amadi industrial road includes a decline in the economic activities due to flooding/erosion of the road, resulting to closure of business enterprises in the Trans Amadi industrial road on real property investment. Also, includes loss of revenue

on real property investment in Trans Amadi Industrial Road due to noise/vibration of the road and its environs. The inherent water/flooding of the business, commercial, residential premise due to poor design of the road and high level of the road that led most of the premise to be far below the pavement and without drainage affected the properties. Even though, the research work was highly dealt with, but it was carried out at Trans Amadi industrial road whereas road construction has effect on other properties such as residential, commercial, agricultural even special purpose property, so the effect is not limited to industrial property alone. More so, the research was done in Trans Amadi is in port Harcourt which cannot be applicable to what this research work will find out due to distance¹³.

Many of the aforementioned studies focused on the effects of various factors on property values, generally overlooking the impact of road construction on property values¹³. The research was done in Lagos Nigeria but cannot be use to justified factors affecting property value in Oyo State even thou in the same country which could be due some factors such as location and so on. The potential relationships among road systems, location attributes, demand and supply dynamics, and accessibility, as well as the complementary nature of road construction to various human activities in the study area, have captured the researcher's interest. However, this work is adding other value that can be gotten from road construction on property, so to this end this study will access the effect of road construction on property value.

1.3 Aim and Objectives of the Study

The aim of this study is to examine the effect of road construction on property value in selected peri-urban areas in Ibadan, Nigeria with a view to providing information that could enhance investment decision making

The specific objectives are to

- i. examine the morphological characteristics of the road construction in selected peri urban area in Ibadan. Oyo state.
- ii. examine trend in value of properties in the selected areas in the study area of the study area
- iii. evaluate the effect of road construction on property value in the study, and
- iv. investigate factors influencing the effect of road construction on property value in the study area.

1.4 Research Questions

1. What are the morphological characteristics of the Road construction in selected peri urban area in Ibadan Oyo state?
2. What is the trend in values of properties in the selected areas of the study area?
3. What are the effects of Road construction on property value in the study area?
4. What are the factors influencing the effect of Road on property value in the study area?

1.5 Justification of the Study

The study will be useful to property developers, property owners, estate surveyors and valuers particularly to government parastatals, because this research will evaluate the positive and negative effect of road construction on property value to guide investment

decision making. This will ensure that, the quality of life of people will improve and adequate measures are given to care for the increase in population. Furthermore, it will also ensure that the level of property value in the study will improve with the right availability of access road.

This research will also serve as guide to other researchers and help professionals in the built environment in making recommendation for clients in the choice of investment in real estate, the government in environmental development decision making and the private developers/property owners, as well as the Estate surveyors and valuers in charge of the property maintenance.

1.6 Scope of the Study

This study therefore, will be dealing with Oluyole local government and Ido Local government as the case study and the major roads within Oluyole local government are Akala Road, 7up road, Rehoboth Road, New Garage Road while the major roads serving Ido Local government are Eruwa road, Apete-Awotan road, Omi Adio Road, BCJ-Gbekuba-Nihort road, Nihort- Elenusonso.

But for the purpose of this study Akala Road and Ologuneru- Eruwa road will be considered based on the recent construction/development on the roads. Study revealed that there are several types of properties in the study areas such as commercial, residential, industrial. The research work will be focusing on the impact on residential and commercial property. The research therefore, will help to reveal the positive and the negative impact the road have on various types of properties in the study area in which the rental value and capital value of the properties will be considered as well.

1.7 Study Area

Oluyole Local Government is one of the oldest Local Government councils in Oyo State. The Local Government has its headquarters at Idi-Ayunre Old Lagos/Ibadan Road. It shares boundaries with four Local Government Area i.e; Ibadan South-West, Ibadan South-East, Ona-Ara and Ido all within Ibadan Metropolis. While it shares borders with Ogun State through Egbeda-Obafemi, Odeda and Ijebu-North Local Government Areas. Oluyole Local Government was established in 1976 and the Council occupies about 4,000 square kilometers. Based on 2006 population Census its population is 202,725. There were 10 wards in Oluyole Local Government and these wards were divided into two sectors. Namely; Idi-Ayunre Sector and Olode Sector. Idi-Ayunre Sector comprises of: Ward 2 – Orita/Odo Ona-Elewe, Ward 5 – Odo Ona-Nla/Idi Ayunre, Ward 8 – Abanla/Olonde, Ward 9 – Onipe/Busogboro, Ward 10 – Orisunbare. Olode Sector Comprises of: Ward 1 – Ayegun, Ward 3 – Pegba/Egbeda Tuba, Ward Muslim/Ifelodun, Ward 6 – Latunde, Ward 7 – Olomi/Olunde. However, this Olode Sector is now Akorede Local Council Development Area. It was established in January, 2017 by Governor Abiola Ajimobi Administration. The Urban Section of the Local Government comprises such area like Lagos/Ibadan Express Road, Old Lagos Road, New Garage, Orita Odo Ona Elewe where many big companies were sited. Companies like; British America Tobacco (BAT), ROM Oil, Agrited Company, Black-Hors plastic company, Jubaili Agro-Limited, KAMAR Industries, Oriented foods and many others. Some Quarry companies flourishing in the area were⁶.

According to research, Ido Local Government was created from the former Akinyele Local Government. Covering an area of 986km², Ido Local Government has a total population of

103,261 based on the 2006 National Population Census. It encompasses regions including Apata, Ijokodo, Omi Adio, Akufo, and Apete. Ido Local Government shares boundaries with Oluyole, Ibarapa East, Akinyele, Ibadan South-West, and Ibadan North-West Local Governments in Oyo State, as well as Odeda Local Government in Ogun State. Despite the rapid urbanization of Ido Local Government, there are still agrarian regions where farmers cultivate crops. The area boasts extensive fertile soil, making agriculture the primary occupation of the residents. A variety of cash crops, including cocoa, kola nut, palm oil, and timber, are grown alongside staple food crops like maize and rice. Additionally, industrialization has significantly benefited the area, with several industries now present. Notably, the Ibadan terminus of the revived Nigerian Railway Corporation was recently established in Ido Local Government, further contributing to its development.

1.7 Limitation of the Study

In the course of carrying out this thesis some constraints were encountered which acted as limitation to the study and these include the following.

- i. Insufficient fund.
- ii. Lack of corporation from the respondents to fill the research instrument on time.
- iii. Time constraints. However, these limitations does not affect the validity of data or the reliability of the findings.

1.8 Operational Definition of Terms

In conducting this research, certain terms have been defined to facilitate a clearer comprehension of the study.

Road: It is an interconnected long narrow piece of ground especially prepared with a hard level surface which aid easy movement of people (pedestrian) or vehicles, from one place to the other, which can be from state to state or within the state or geopolitical zones or local government etc.

Road Construction: means the establishment of any new sub-grade including widening, realignment, or modification of an existing road prism, with the exception of replacing or installing drainage structures, for the purposes of managing forest land under.

Property: Property is anything that is capable of ownership. In estate management practice properties are either land or any structure built on land for various purposes which can be residential, commercial, industrial, agricultural even special properties.

Value: Is the worth of something in terms of money or other goods for which it can be exchanged or quality of being useful or important. In real estate value is the price that can be place on land and landed property either for lease or sale. It could also be in form of social, economic, political worth of the properties.

Peri-Urban Area: Peri-urban areas are developing areas in the state, they are also zones of transition from rural to urban land uses located between the outer limits of urban and regional centres and the rural environment.

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Chapter Two

Literature Review

In this chapter, relevant literature was reviewed in relation to the study which is effect of road construction on property value in selected Peri-urban areas in Ibadan, Nigeria. Which would serve as guide in case one plan to buy a new one or sell an existing one or even let out or rent an apartment for residential, commercial or any other purpose as the need arises. To also know factors that can affect property values, which will be useful in decision making at a particular time. Literatures were reviewed based on the objectives.

2.1 Conceptual Review

2.1.1 Property and Property Values

Earlier studies have yielded mixed results regarding the relationship between transportation and property values. For example, a study examining the connection between rail travel costs and residential property values found that replacing a streetcar with a subway led to an increase in site rent for locations vertical to the facility within a one-third mile walk to the station. Additionally, positive effects were observed for permanent transportation improvements on land values. The study also revealed a statistically significant relationship between the distance of a parcel of land to the nearest Metro station and land price. However, there was evidence indicating that residential property prices tended to decrease in the immediate vicinity of the transport investment, offset by the value uplift through changes in land values¹.

Real estate property has no value if it has no usefulness, if is not scarce and if is not scarce an if it is not effectively demanded. Real property has significance only as it satisfies man`s needs and desires. It is this man`s collective desire for real property that give rise to value².

Thus, the ability of a property object to satisfy man`s needs and desires together with its degree of scarcity and utility compared with other makes man to ascribe value to it.

2.1.1.1 Determinants of Property Values

Property value, is the worth a property could command in market, it is the money obtainable from a person(s) willing and able to purchase property when it is offered for sale by a willing seller, allowing for reasonable time for conciliation and with the full knowledge of the nature and uses which the property is capable put, on the other hand it could be inform of rent place on a property in case of lease which could be annual or long lease. Value of a property is created and its value varies with the changing factors in relationship to with its owners, the end users, and the locality within which the property is located⁵.

Real estate is a heterogeneous good that is comprised of a bundle of unique characteristics reflecting not only its location, but equally affected by other amenities such as the quality of neighborhood and infrastructure⁶ for example study shows that the continued increase in housing prices in Malaysia are commonly associated with several issues which can be categorized into three main areas. Firstly, land issues. This includes acquisition issues which increases the value of land, the lack of coordination in Land Act since the judiciary belongs to the state government rather than the Federal government, categorization, conditions and restrictions on land use and acquisition, land conservation, surrender and alienation and finally, geographical issues. Secondly is financing issues. Though financing is abundant, the requirements are quite stringent which prohibit young home buyers` especially low-income earners from owning houses. Thirdly is developers` issues which centers on complicated procedures and bureaucracy which slows down completion and escalate costs, the study show that increase in value of houses is not only affected by infrastructures in Malesia too⁷ Other scholar, argued that property value is a vital aspect of property markets worldwide

and determined by a variety of factors and the determination of those reasons is a significant part of property valuation⁸. By and large many research has come up with many determinants of value. Some of the determinants for property value could grouped as environmental variables, area variables, accessibility (location) variables and property variables. Others can be classified as income, scarcity, prospects of growth, economy, physical attributes, government and political factors, taxation, roads, improved social amenities, more industries, expanded educational institutions and more commercial centers and many more⁹.

2.1.1.2 Urban Infrastructure and Property Values Application of the Concept to the Study

It has been identified that one of the determinants of property values is infrastructural facilities, the presence of which leads to appreciation in property value. Its absence affects neighborhood properties adversely. According to researcher provision of good and adequate infrastructure is central to property values². A residential user may be prepared to pay a high value for a property depending on his consideration for basic facilities such as accessibility, water and electricity³. Other researcher also observed that areas with basic facilities such as accessibility such as access roads, good drainage, electricity, public water supply and telephone would attract high property values³. This is in contrary to areas without any of these facilities. There is a direct relationship between urban infrastructure and property values because they complement each other.

Accessibility which is a direct consequence of a good road network, in turn leads to high rental values of locations with greatest accessibility advantages. In a situation where all properties are accessible via motorable road networks, such properties will enjoy rental

values conferred by virtue of accessibility. Other important determinants of property values are provision of good communication network, electricity and drainage⁴.

2.1.2 Components of Roads

All roads that have good plan should consist of the following components. Components of a road or parts of a road plays an important part in ensuring the safety and service life of a road to also ensure run-off water has easy flow in order to avoid flood which can damage the road in no time. Components of a road is designed to meet the design requirements, functional requirements and to also ensure that the road has all the necessary features that can help to ensure smooth usage of the road¹⁰.

Components of a Road

- Carriage way or pavement
- Road way or formation width
- Camber or cross slope
- Kerbs
- Medians
- Road margins
- Right of way (ROW)

Pavement or Carriageways: The structural design of pavement aims to protect the subgrade from traffic loads, by providing pavement layers which will achieve a chosen level of service. When the need for accessibility or traffic capacity improvement in a certain area has been identified by the responsibility authority, two basic decisions need to be taken by the management in order to provide the necessary directive and inputs for the design process

which are (a) the functional service level of the road or facility improvement (b) The analysis period over which the service is anticipated. These inputs and directives are called Service Objective (SO) of the project taking into account such aspects as the importance of the road link, riding quality, safety, traffic capacity, funding etc. The SO largely determines the stander of the geometrical and structural designs for that particular road link¹¹.

Road Way or Formation Width: Width of the carriage way or the width of the pavement depends on the width of the traffic lane and number of lanes. Width of a traffic lane depends on the width of the vehicle and the clearance. Side clearance improves operating speed and safety. The maximum permissible width of a vehicle is 2.44 m and the desirable side clearance for single lane traffic is 0.68 m. This requires minimum of lane width of 3.75 m for a single lane road. However, the side clearance required is about 0.53 m, on both side and 1.06 m in the centre. Therefore, a two-lane road require minimum of 3.5 meter for each lane¹².

Shoulders Pavement or Carriageways: The term "shoulder" refers to the graded or surfaced area of the roadway, on the side of and adjacent to the pavement, which gives lateral support to the road surface and can be used by traffic in an emergency. The shoulder must be capable of sustaining the weight of the average vehicle using the highway, and its surface must be kept properly maintained for safe deceleration of traffic. Shoulders that are properly sloped and maintained at all times aid in the quick removal of surface water from the roadway into the drainage system¹³.

2.1.2.1 Types of Roads

The path over which vehicles and other traffic may lawfully pass is called road because all human activities take place on land. It includes pathway, other related structures like culverts, bridges and land required for future widening. The entire area required and

reserved for road along its alignment is called right of Way¹¹. Starting point for road design is definition of the road type. It needs to be decided at the planning stage, whether the road will be single carriageway, all-purpose dual carriageway or motorway and how many lanes would be there this will help to make proper planning such as land portion required for the road, costing, duration of construction, seeking for approval from the authorities, notices to the residence of the area¹².

Roads may be classified as:

- Private drive pathways
- Two-lane highways
- Dual carriageways
- Expressway

Private Drive Pathways:

These are roads owned, maintained or controlled by an individual, agency or organization.

These types of roads are usually low-density road because they are service a small area.

Example is OYTMA agent in Oyo state

Two-Lane Highways:

These are the usual single carriageways. Traffic on two-lane highways normally flow in opposite direction on single lane. Two-lane, highways may be rural, urban, intra or intercity roads.

Dual Carriageway:

This is a road which has multiple lanes with traffic going in opposite direction. They may or may not be physically separated by non-passable dividers such as concrete barrier.

Typical example of this type of road can be found along New garage express way towards toll-gate.



Figure 2.1: Akala Express Road

Source: Author Reconnaissance Survey, 2023

Lead City University.

Expressways:

This is a specially designed and restricted highway divided with barriers which make traffic in opposite directions completely separated from each other.

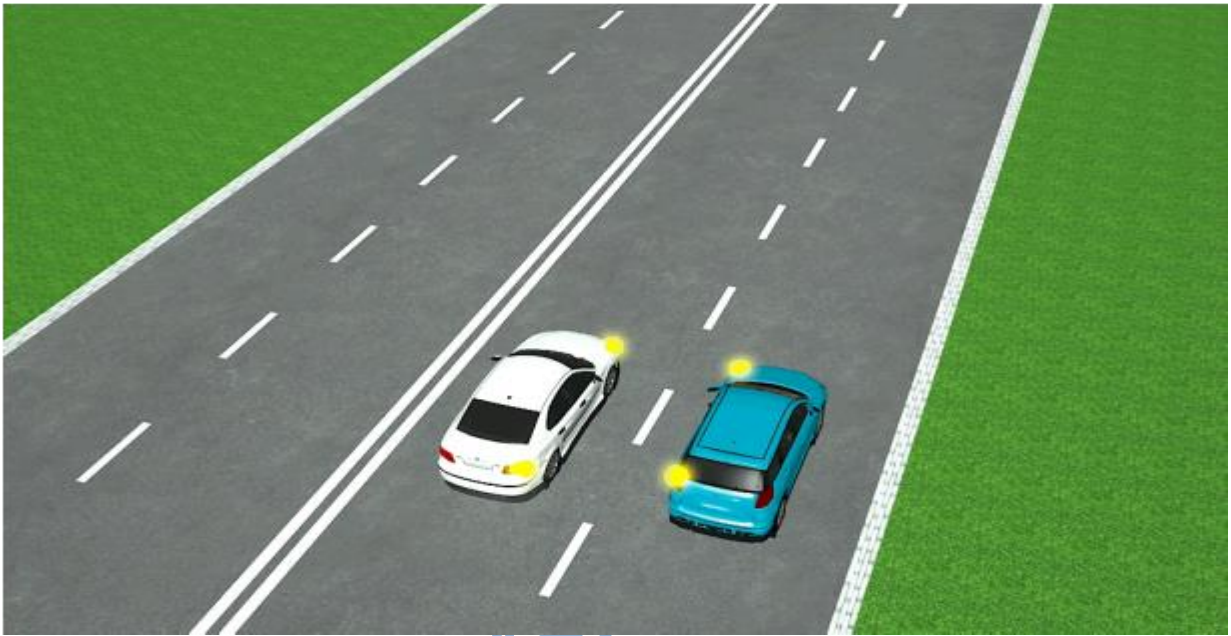


Figure 2.2 Akala Express Way

Source¹¹

2.1.2.2 Type of Roadway Pattern

When the road is constructed in patterns like rectangular, radial, hexagonal, etc for the proper management of traffic and also to interconnect the branch roads with main roads then it is called road pattern. Road system can be laid in various designs. The patterns in which the road network is laid could be

- Rectangular or block pattern
- Radial or Star block pattern

- Radial or Star and Circular Pattern
- Radial or Star and Grid pattern
- Hexagonal Pattern
- Minimum Travel Pattern

2.1.2.3 Rectangular or Block Pattern: in this design, the whole area is divided into rectangular blocks or plots, with interesting at right angles. The main road which passes through the centre of area should be sufficiently wide and other branch roads may be completely narrow. The main road is provided a direct approach to outside the city. This is the type of roadway pattern in New garage.

Advantages of Rectangular or Block Pattern

The rectangular plots maybe further into small rectangular blocks for construction of buildings placed back-to-back, having roads on their front, also this pattern has been adopted for the city roads, similarly, construction and maintenance of roads of this pattern is comparatively easier

Limitation of Rectangular or Block Pattern

This pattern is not very convenient because at the intersections, the vehicles face each other

Rectangular or block pattern

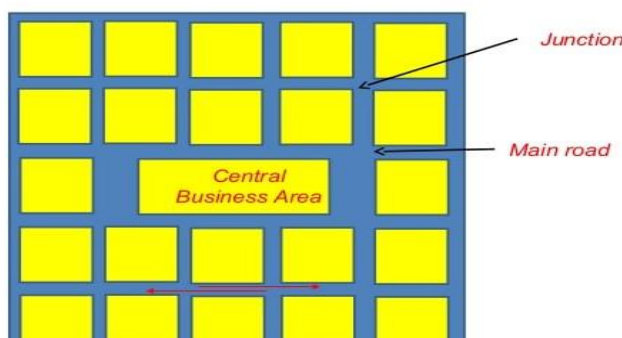


Figure 2.3: Rectangular or Block Pattern

Source¹¹

2.1.2.4 Radial or Star and Block Pattern: In this pattern, the entire area is divided into a network of roads radiating from the business outwardly, in between radiating main roads, the built-up area may be planned with rectangular block. The typical example of this can be found at New garage. The advantage derives from this road type is numerous it reduces level of congestion at the primary bottleneck location it also Prevents traffic from accessing local flow routes in the direction of the event venue that operate in favor of engross traffic flow more so, if one is block then side traffic can move and vehicle face each other less than block pattern. The limitation are Proves particularly effective if two-lane ramp traffic does not have to merge at downstream end of ramp. And Safety appurtenance such as guiderail transitions, crash attenuators and post, support bases have not been designed to provide adequate protection at hazardous locations from the opposite direction of travel.

Radial or Star and Block Pattern

Radial or star & block pattern

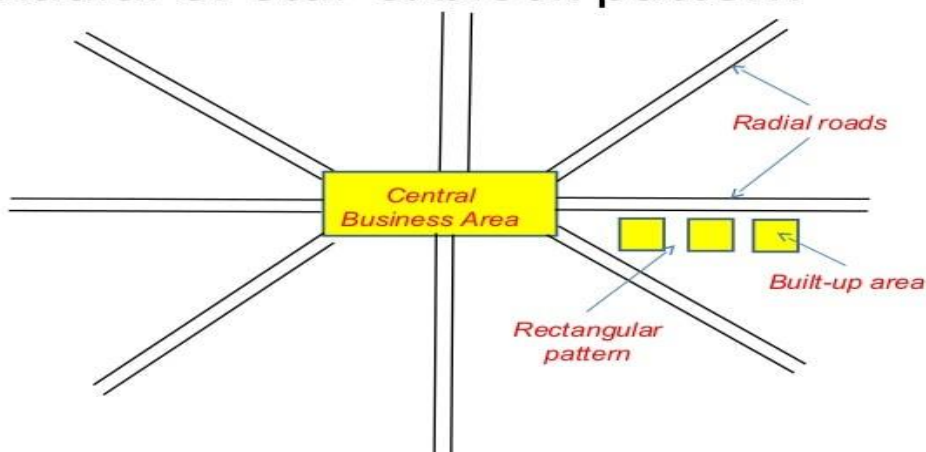


Figure 2.4 Radial or Star and Block Pattern

Source¹¹

2.1.2.5 Radial or Star and Circular Pattern:

In this system, the main radial roads radiating from central business area are connected together with concentric roads. In these areas, boundary by adjacent radial roads and corresponding circular roads, the build-up area is planned with a curved block system.

Advantages of radial or star and circular pattern are traditional intersections with stop signs of traffic signals, some of the most common types of impacts can be severe because vehicles may be traveling through the intersection at high speeds. With circular pattern, these types of potentially serious crashes essentially are eliminated because vehicles travel in the same direction and it also aid, Installing Circular pattern in place of traffic signals can also reduce the like hood of re-rend crashes, it helps in removing the reasons from drivers to speed up as they approach green lights and by reducing abrupt steps at red lights, likewise, the roundabouts improve the efficiency of traffic flow, they also reduce vehicle emissions and fuel consumption.

Limitations of Radial or Star and Circular Pattern

Centre lines or roads leading to Circular pattern should be properly aligned with the central island.

- i. Approach roads should be sufficiently curved, far enough in advance of circular pattern, to reduce vehicle speeds of entering drivers.
- ii. Islands separating the approach and exist lanes, known as splitter islands, should extend

far enough to provide pedestrian refuge and to delineate the roundabout.
- iii. Traffic signs, pavement marketing, and lighting should be adequate so that drivers are aware that they are approaching a roundabout and they should reduce their level speed.
- iv. For older drivers declines in vision, hearing and cognitive functions as well as physical
- v. impairments, may affect some older adult driving ability. Intersections can be especially challenging for older drivers.
- vi. Improve traffic flow in both directions using savannah cellular structure.
- vii. Improve land use efficiency and unit density.

Advantage of Radial or Star and Circular Pattern

- i. Island separating the approach and exit lanes, known as slitter islands, should extend far enough.
- ii. Traffic signs, pavement markings and lighting should be adequate so that drivers are aware they should reduce their travel speed.

Radial or Star Grid Pattern

Radial or star & Grid pattern

Fig2.3: Source Google (2023)

Figure 2.5 Radial or Star Grid Pattern
Source¹¹

2.1.2.6 Hexagonal Pattern

In this pattern, the entire area is provided with a network of roads forming hexagonal figures. At each corner of the hexagonal, three road meet the built-up area boundary by the sides of the hexagons is further divided in suitable sizes.

Radial or Star and Circular Pattern

Radial or star & Circular pattern



Figure 2.6: Radial or Star and Circular Pattern

Source¹³

Radial or Star and Grid pattern

Change in direction, and because street patterns are the most enduring physical element of any layout, it could potentially contribute to systemic site planning and, consequently, deserves a closer look. Though the network is entirely interconnected, north-south movement becomes circuitous, indirect and inconvenient, making an unlikely choice and vividly illustrating that interconnectedness by itself is insufficient to facilitate movement.

This is the type of road way pattern in.

Advantages of Radial or Star and Grid pattern

- i. Keep vehicular traffic safe with a high proportion of 3-way intersections

- ii. Reduce cut-through traffic by similar of other means.
- iii. Three roads meet the built-up area boundary by the side of hexagons.

Limitations of Radial or Star and Grid pattern

Traffic signs pavement markings and lighting should be adequate so that drivers are aware that they should reduce their travel speed

Hexagonal Pattern

Hexagonal pattern

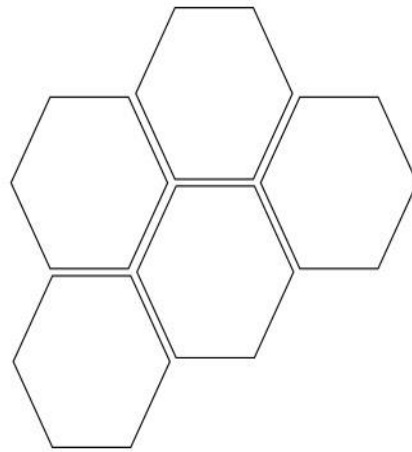


Figure 2.4 Hexagonal Pattern, 2023

Source¹⁴

2.1.2.7 Minimum Travel pattern: in this road patter, city is contended by sector center, suburban, centre and neighborhood center by the road which required minimum to connect the city centre

Advantages of Minimum Travel pattern

These types of potentially serious crashes essentially are eliminated.

Limitations of Minimum Travel pattern

- Traffic signs, pavement markings, and lighting should be adequate so that drivers are aware they should reduce their travel speed.
- Intersections can be especially challenging for other drivers.

2.1.2.8 Hierarchy of Roads

The hierarchy of roads categorizes roads according to their functions and capacities. While sources differ on the exact nomenclature, the basic hierarchy comprises freeways, arterials, collectors and local roads. In reality, streets (named or natural) are found to demonstrate scaling hierarchy statically that there are far shorter (or less connected) Streets than long (or well-connected) ones, and subsequently minority of streets account for a majority of traffic. The hierarchy can be simply derived through applying head/tail Breaks, a new clustering scheme for data with a heavy-tailed distribution such as power laws and lognormal.

The related concept of access management aims to provide access to land development, while ensuring traffic flows and safely on surrounding roads.

The following are hierarchy of roads according to United State and Canada:

1. **Freeways:** at the top of the hierarchy are limited access roads freeways or motorways including most toll roads. These roads provide largely uninterrupted travel, often using partial or full access control, and are designed for high speeds. Some freeways have collector or distributor lanes (also known as local lanes) which reduce the number of access ramps that directly interface with the freeways; rather, the freeway periodically interfaces with these parallel roadways, which themselves have friction at an even

higher speed and with higher flow. Often freeways are included in the next category, arterials.

2. **Arterials:** arterials are major through roads that are expected to carry large volumes of traffic are often divided into major and minor arterials, and rural and urban arterials. In some places there are large divided roads with few or no drive ways that cannot be called freeways because they have occasional at grade intersections with traffic lights that stop traffic (expressways in California, dual carriage ways in Britain) or they are just too short (super arterials in Nevada). Such roads are usually classified as arterials. Frontage roads are often used to reduce the conflict between the high-speed nature of an arterial and property access concerns
3. **Collectors:** Collectors (not to be confused with collector/distributor roads, which reduce weaving on freeways), collect traffic from local roads, and distribute it to arterials. Traffic using a collector is usually going to or coming from somewhere nearby.
4. **Local Roads:** At the bottom of the hierarchy are local streets and roads. These roads have the lowest speed limit, and carry low volumes of traffic. In some areas, these roads may be unpaved.

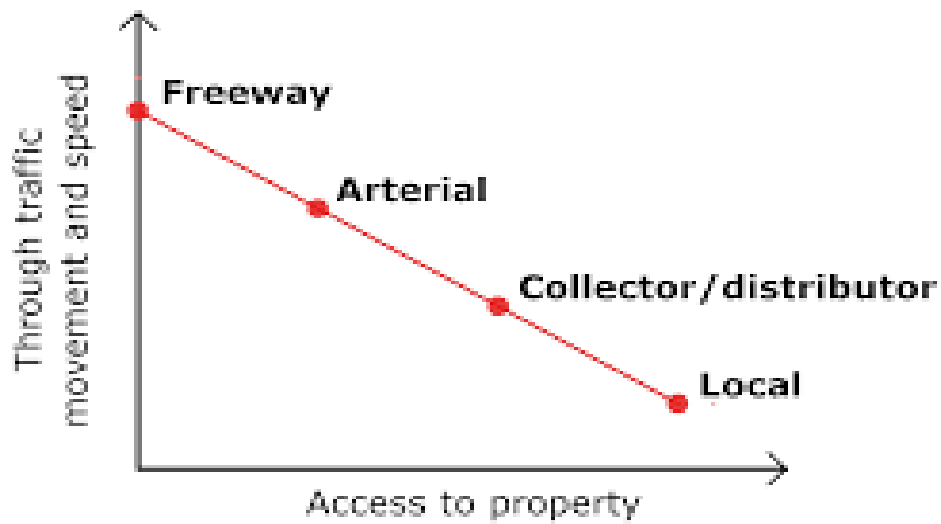


Figure 2.5 Hierarchy of Road

Source¹⁵

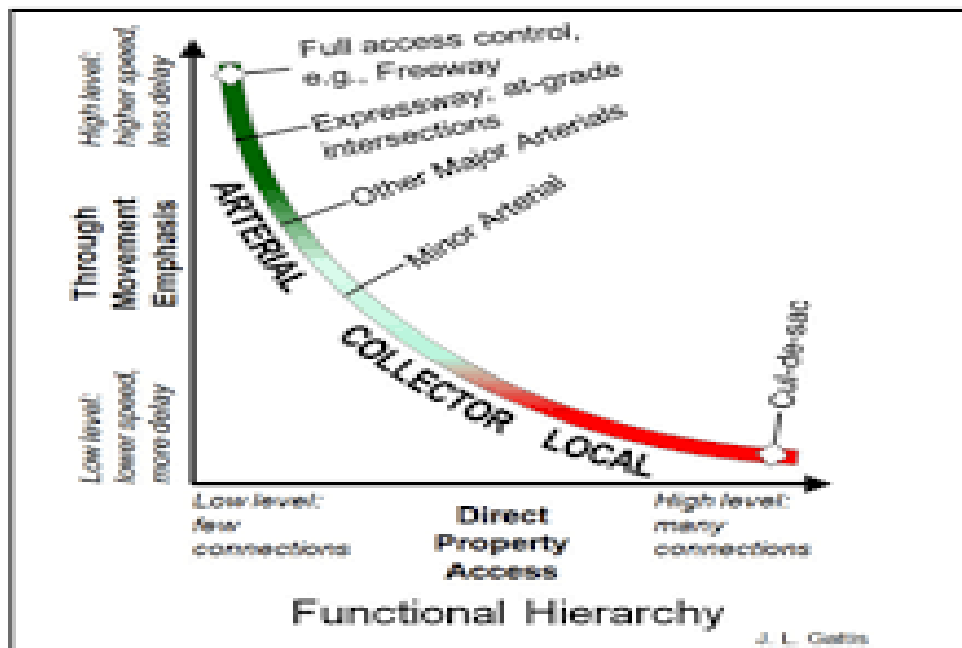


Figure 2.6: Functional Hierarchy

Source¹⁶

Road Facility Classification

Road can be classified based on the several reasons. ¹⁴ Road facilities could be classified according to the administrative jurisdiction roads are under, namely the central government, municipal government and district government, but national roads of the Metropolitan Road System are under the jurisdiction of the Metropolitan Municipality of Lima or the Municipality of Callao.¹⁴ the classification can be administration or by function. The researcher narrowed the finds to Lima which make the opinion of findings limited.

Classification by Function the Metropolitan Institute of Planning of Lima has classified roads according to four functions as shown below. 1) Local Roads Local Road serves to districts and their main function is to allow the access to urban properties. Mainly, local roads have two lanes for both directions and are usually called Calle or Jiron.

The Nigeria Road system is classified into four broad categories. These are: -

- i. **Trunk A Roads:** This forms the major network around which other categories of roads are built. They run through the length and breadth of the country. They connect ports, capital of various states and also provide international links with neighboring countries. A trunk road, trunk highway, or strategic road is a major road, usually connecting two or more cities, ports, airports and other places, which is the recommended route for long-distance and freight traffic. Many trunk roads have segregated lanes in a dual carriageway, or are of motorway standard.¹⁵ From Observation, there is no trunk in the study area.

- ii. **Trunk B Road:** these are the highway withing the states, as they connect important towns and cities of the states. They also connect the cities of the state to federal highways and serve as the main arterial of traffic to and from the district roads. This type of road classification can be found at Ologuneru-Ido-Eruwa Road.
- iii. **Trunk C Road:** these are also called local government roads. They are constructer with nearby the same specification as those of the state highways. They are intended to connect areas of production and market with state highways and railways. Example of this can be seen at Apete- Awotan road.
- iv. **DFRRI Roads:** these are the least in Nigerian classifying system and they are connected to major district roads and railways. They are intended to serve the interior rural population of the district. This is around Elenusonson area.

2.1.3 Concept of Road Construction

Before now, Apete Awotan road was neglected by succeeding governments. The layout before 2007 lacked basic infrastructural facilities. Within that period, roads within the layout deteriorated into deplorable situations. Pot-holes existed in all the roads thus causing traffic problems. Drainages were badly destroyed and run-off water from drains devastated roads. Effluents from shared public houses collected in drains and flow into roads creating breeding places for mosquitoes. The whole environment was defaced by these situations thus affecting rental value of residential properties within the layout. In 2006, a new administration led by Barrister Sullivan Iheanacho Chime came in and became purposeful. Within a relatively short period basic infrastructure such as roads and drainages were provided in the layout. The environment which hitherto was a death-trap improved tremendously. But immediately the road was constructed story change completely investors

were willing to invest in real estate for businesses like shops, office complex, schools, hotels residential apartments and so on. The story is the same at Oluyole local government Akala road precisely, investors were running away from the area, those that managed to have investment there were not encouraged with returns they are getting, because the road was very bad before the construction. This study therefore, tries to examine the effect of road construction on property rental and capital value in the study areas¹⁶.

Road constitutes an important element in urban development as roads provide accessibility required by different land uses and the proper functioning of such urban areas depends on efficient transport network, which is a backbone to their very existence. The analysis of the road involves the recognition of the patterns and qualities of the roads, which can be emphasized through process of abstraction and symbolization.

A road network is comprised of nodes representing spatial locations and illustrates the topological structure and connectivity of nodes and links within the network. It typically consists of primary and secondary roads, known respectively as arterial and minor roads.

Arterial roads are characterized by their moderate to high capacity and serve as vital conduits for traffic within urban centers. These roads facilitate the movement of large volumes of vehicles between different areas, often connecting neighborhoods and commercial districts. Along arterial roads, one can find intersections with collector and local streets, as well as various amenities such as shopping centers, petrol stations, and other businesses^{2,17}.

2.1.3.1 Roadway Pattern Accessibility

Accessibility is an important variable under the concept of road network. Accessibility is a fundamental concept in theories of metropolitan spatial structure. The standard urban model explains urban structure as a function of trade-offs between access to jobs (by assumption

located at the center of the city) a housing cost. which gives rise to a city from with the highest population density and land values at the centre, and with constantly decreasing density and price gradients¹⁶. Accessibility, in broad terms, refers to the extent to which a system is usable by a wide range of individuals. It encompasses the ease with which people can reach specific locations from others and is often seen as the capacity to access functionality and potential benefits. In transportation, accessibility means being able to reach many activities or destinations quickly, whereas people in inaccessible places can reach fewer places in the same amount of time³. Accessibility is a complex concept, often used colloquially but challenging to precisely define and measure. It is a term commonly employed in various contexts by people of diverse backgrounds, leading to multiple interpretations. In transportation, accessibility primarily pertains to the ease of reaching destinations. Roadway patterns are very essential in the development of the settlement of a city However, recent development in cities does not give importance to the study of the road patterns that give rise to numerous roads that are not interconnected, housing schemes and commercial development built far away roads are very distant from the centre of the town. Road network consists of several patterns⁴. The concept of events as objects suggests that patterns themselves are tangible entities confined in space, arranged hierarchically, and identifiable by specific characteristics. These characteristics can be highlighted through abstraction and symbolization, wherein a pattern is perceived as a composite of fundamental objects and the relationships between them. This approach attributes shape, extent, orientation, density, topology, and configuration as inherent properties of patterns. The increasing distance between the residential and commercial hub of the city increases the dependency upon cars from the daily travel chores each household member makes frequently. The roadway patterns also increase the response time to emergency response vehicle to take to reach a certain place¹⁸.

2.1.4 Concept of Value

Value in monetary terms as the power of a commodity to commend other commodities in exchange. There are various kinds of values, they include: aesthetic values, sentimental value, political value, probate value, psychin and social values. The value of a commodity may be determined by the use to which it is put and varies with the profitability of that present or anticipated use Value is the estimates of the parameters of the possible price distribution for the subject property as of a given date.

International valuation Standard and committee (IVSC) defined value as the estimated amount for which an asset should exchange on the date of appraisal between a willing buyer and a willing seller in an arm's length transaction after proper marketing wherein the parties had each acted knowledgeably prudently and without compulsion.

From the above definition value can be seen as the worth a property or assets should fetch the owner on the date of transaction between a prospective buyer and seller at given time.

However, in relation to property and real estate, it is called "Market Value". Market value of a property is a function of the factors of demand and supply. Property value is defined as the highest price in terms of money which a particularly property will fetch in the open market under a free market condition¹⁷.

Open Market Value is the best price a property may be sold by mutual agreement at the date of valuation. Values of properties are seldom constant for a long time; they fluctuate with changing situation of demand and supply and more importantly shifts in business and group psychology.

When discussing the pattern of property values, it is observed that the center of an urban area represents a locus of heightened accessibility, where transport routes and systems intersect. This centrality fosters competition among firms, particularly those whose revenue is contingent upon such advantageous positioning. Consequently, rents and land values in this central area are driven upwards, surpassing those found elsewhere within the urban landscape¹⁸. There are factors that determine values of individual properties and those that affect property collectively. Individual property value determinants as identified are accessibility, location, state of repair, accommodation details, service. The factors that dictate the prevailing level of collective property value in a neighborhood at a particular point in time range from physical topography, configuration and features of the surroundings, socio political factors, infrastructural facilities and services, government presence class status, of residents in the area, economic and legal factor. They all often affect value of properties. Several factors can cause property value to appreciate among which are infrastructural development such as road, electricity, water supply, telecommunication. On the other hand, depreciation may occur in property value due to infrastructural degradation and negative changes in neighborhood properties¹⁸.

2.1.4.1 Forms of Value

Property management involves various forms of value that property managers strive to create and protect for property owners and investors. These forms of value can be categorized into several key areas:

1. Financial Value:

- **Rental Income:** Maximizing rental income is a primary goal of property management. This includes setting competitive rental rates, collecting rent on time, and ensuring rent increases when appropriate.
- **Expense Management:** Controlling and reducing operational and maintenance expenses to increase the property's net operating income (NOI).
- **Property Appreciation:** Implementing strategies to enhance the property's long-term value, such as renovations, upgrades, and capital improvements.
- **Investment Return:** Ensuring the property generates a favorable return on investment for owners or investors.

2. Tenant and Occupancy Value:

- **Tenant Retention:** Reducing tenant turnover by providing excellent customer service and addressing tenant needs promptly.
- **Attracting High-Quality Tenants:** Marketing the property effectively to attract reliable, responsible, and long-term tenants.
- **Reducing Vacancy Rates:** Minimizing downtime between tenant turnovers to maximize occupancy and rental income.

3. Physical Asset Value:

- **Property Maintenance:** Regular upkeep and preventive maintenance to preserve the property's physical condition and extend its useful life.

- Renovations and Upgrades: Identifying opportunities for property improvements that increase its value over time.
- Compliance and Safety: Ensuring the property complies with local regulations and safety standards¹⁸.

4. Legal and Risk Management Value:

- Legal Compliance: Managing leases, contracts, and property operations in compliance with all applicable laws and regulations.
- Risk Mitigation: Reducing liability risks, such as through insurance coverage and proactive measures to prevent accidents or disputes.

5. Reputation and Brand Value:

- Building a Positive Reputation: Creating a positive image of the property and property management company within the community.
- Branding and Marketing: Promoting the property in a way that attracts tenants and aligns with the property owner's goals.

6. Operational Efficiency:

- Streamlining Operations: Implementing efficient property management processes to reduce administrative overhead and improve productivity.
- Technology Integration: Utilizing property management software and technology to enhance operational efficiency and tenant services.

7. Community and Environment Value:

- **Enhancing Community Relations:** Engaging with the local community and fostering positive relationships.
- **Sustainability:** Implementing green and energy-efficient practices to reduce environmental impact and operating costs¹⁹.

8. Portfolio Diversification and Growth:

- **Diversifying Investments:** Advising property owners on portfolio diversification to mitigate risk and maximize returns.
- **Growth Strategies:** Identifying opportunities to acquire or develop additional properties for portfolio expansion.

Property managers aim to optimize these forms of value to meet the specific goals and objectives of property owners while ensuring the smooth operation and maintenance of real estate assets.

2.1.4.2 Types of Values

Value can be divided into the following types:

- (i) **Investment Value:** it is the worth to a particular investor, using a specific investor's parameters or assumptions. Examples of investment values would be an insurance company that purchases income-producing types of property and is willing to pay more of it, resulting in a lower net return, because and have a different internal investment than the typical market participants
- (ii) **Values in Use:** This relates to values to a specific user rather than the market in general. It does not relate to the price level most individual would be willing to pay.

(iii) **Assessed Value:** it relates to the value of property established by municipalities for purposes of establishing a basis of taxation.

2.1.5 Rent and Rental Value

Rent is a periodic payment for the use of property. Rent is used mainly for land or land and improvement, but it could be used in respect of other chattels such as plant, machinery and equipment. Rents from property arise not from the considerations of investment which operate on different sets of conditionality a parameters ne word Tent was derived from the Latin word radiatus" which means any income or yield from an economic agent.

There are several delineations rent depending on the shade of opinion for instance, the lawyer Sees rent as a certain and periodic payment or service made or rendered by the tenant to the corporeal hereditament or more precisely in present day usage a sum of money paid for the occupation of land.

On the other hand, economists see rent from a different perspective. A well-known classical economist sees "rent as that portion of the produce of the earth which is paid to the landlord for the use of the original and indestructible powers of soil". According to economic rents are "excess returns" above the "normal levels that are generated competitive markets. More specifically, a rent is "a return in excess of the resource owner's opportunity cost", define the term as extra returns that firms or individuals obtain due to their positional advantages. defines rent as the part of the produce that accrues to the owners of land (or other natural capabilities) by virtue of ownership and as "the share of wealth given to landowners because they have an exclusive Tight to the use of those natural capabilities¹⁹.

Rental value is the fair market value of property while rented out in a lease. Generally, it may be the consideration paid under the lease for the right to occupy, or the royalties or return received by a lessor (landlord) under a license to real property. In the science and art

of appraisals, it is the amount that would be paid for rental of similar real property in the same condition and in the same area. It is also defined as the monetary returns an investment is expected to command in a year²⁰.

From the above definitions, rental value is the estimation of monetary worth of an interest in a landed property as determined by an Estate Valuer rent is the actual amount paid for the use of land and landed property.

2.1.5.1 Forms of Rent

From the definitions of rents given earlier, one can easily note two forms of rent held by different people, via, contract rent, and economic rent

- i. Contract rent: this refers to the actual payments tenants make for them of the property for others. The amount of these payments is normally agreed to by the landlord and tenant in advance within the period the property is in use and thus forms mutual contractual arrangements.
- ii. Economic rent: In economic theory, economic rent is the payment made to a factor of production which is in excess of that which is needed to keep it employed in its current use or its transfer earning. This situation when demand for the factor increases and the supply cannot respond to the supply of factors.

Land economy experts, on the other hand have come up with another concept of rent known as "land rent" or comparative rent". The concept mainly aims at isolating the component parts of the other two concepts of rent. The concept distinguishes between the bare lands from the improvements on land. " The competitive rent which will be obtained for a particular holding will result from the value (not the cost) for farming, use of the fixed equipment as well as from the advantage in terms of situation and fertility⁵. Again, competitive rent for an urban land will result from the value of use of the improvements for

example building as well as from the advantage by way of situation and other special reasons". in connection with land, enumerated four specific component parts of rent via.

1. Payment for the raw land representing nature's original gift.
2. Payment by way of return on the capital expenditure on building and works.
3. An allowance for depreciation of the works and buildings.
4. Any continuing expenses incurred in occupying and owning the land building. This

broader concept of land rent appears more meaningful today and is accepted because,

1. Nearly all land sites have been sited from some manmade improvement.
2. It is often difficult to distinguish between the shares, of rent that should go sites or raw land as compared with improvement.
3. The concept IS on broad concept of land and real estate resources, which include both land sites and the improvement legally attached to them. An estate surveyor and valuer in practice are normally concerned with the contract rent, that is the amount agreed under the tenancy or lease agreement which the tenant must pay the landlord as consideration for the occupation of the landlord's property.

However, in dealing with contract rent, the estate surveyor and valuer will also be very much, concerned with what the tenant is an open market would pay for the occupation of the same property. In fact, the broad objective of investment property management is centered on the realization of this open market rent. Open market rent is the price at a given date which a property would likely fetch if it were exposed for sale in the open market for a reasonable time, assuming a willing buyer and a willing shelter are hot under Compulsion. Often there is disparity in the rental value and passing on a property. This disparity is referred to the following situation.

1. Where the lessee paid premium under the lease.
2. Where the lessee surrendered and existing lease in order to be granted the new lease,

3. Where the lessee contracted to carryout improvement on the property ot to forgo compensation receivable by him from the lessor.
4. Where there is a special relationship between the lessor and the lessee for example where both the lessor and the lessee are members of one extended family.

2.1.5.2 Determinants of Rent

The real estate market is complex and challenging in nature. Each piece of property is a unique and multidimensional good differentiated into a bundle of attributes that vary in quantity and quality. As such, the mainstream economist's explanation that rent is solely determined by supply and demand seems rather incomplete and sociologically naive as rents within any particular area are set by landlords whose decisions are shaped by a variety of social as well as economic factors. Economic and financial analysts have there for invested a tremendous amount of energy and effort in an attempt to explain what determines residential sale and rental prices. At least, the bundle of factors that determine rent can be broadly classified economic and non-economic factors. Some of the economic factors are interest and income level.

Outburst of negative relationship between real interest rate and housing prices exists¹⁹. There exists a positive relationship between income and housing prices. This suggests that increases in incomes give incentives to landlords to take advantage of the increased purchasing power of tenant and increase house prices and rents, though this cannot happen in all localities within a duty²⁰.

Population, as a non-economic factor, is found to have a positive relationship with house prices Increase in population lead to excess demand for an accommodation in the short run and eventually push rent up. Sometimes, the location of an apartment can have a significant

impact the level of rent that a household is like to pay. In NYC for instance, rent is charged based on location within Manhattan commanding the largest rent.

2.1.6 Concept of Property

Property can be seen as something tangible or intangible thing to which its owner has a legal title. The word 'property' was coined from the Latin word 'proprius' meaning something personal and during the medieval time the feudal lords were the only one, allowed to acquire property which comes in form of land and human servants.²¹ These humans' servants are often referred to as commoners. But as time went on the commoners begin to acquire some property from the feudal lords in form of payments for the services, they render to the feudal lord gotten from rendering or delivering service which the receiver can lay claim to.

The definition of property recognized has been an intangible element; a thing of no definite description in that even a chair or pencil can be regarded as a property so long the owner can lay claim to it. However, some other writers, defined property as any physical or intangible entity that is owned by a person or jointly by a group of people or a legal entity like a corporation. Also, property is used to describe particular concentration of power over things and resources⁴. Also described property as the ability an individual or group of persons have to express power or authority over a substance, thing or substance based on its relationship with the substance and on the nature of the property, an owner of property has the right to consume, sell, rent, mortgage, transfer exchange or destroy it, or to exclude others from doing these things⁵. Furthermore, a scholar explains the importance or control over a property and without control over a property and without no one can be seen as the owner of a property⁵.

For the purpose of this study, property can be defined as any tangible or intangible thing or substance over which ownership rights can be expressed based on its relationship with the thing or substance and the owner can exclude others from using such rights.

2.1.6.1 Classification of Property

Real estate has been a very large and important portion of wealth for thousands of years, in fact, it is regarded as an important asset to acquire either personal or rent for use. Even as recently as a century ago, real estate dominated institutional portfolios and was classified as property. During recent decades, the preeminence of real estate has yielded to the growing importance of intangible assets the document can be used to stand as collateral to obtain loan among others⁶. Furthermore, there are other common attributes that encourages the inclusion of property in an investment Its potential to offer absolute returns , Its potential to hedge against unexpected inflation, it is not affected at all considering the present state of Nigeria economy properties value keeps increasing, Its potential to provide diversification against stocks and bonds.an investor can also use property as another means of securing capital, Its potential to provide steady cash inflows when an investor collect rent either yearly or monthly it brings a form of financial relief, Its potential to provide income tax advantages Yet real estate remains a valuable part of any well-diversified portfolio⁶.

Property can be classified into real property and personal property.

1. Real Property This includes land and buildings and anyone who owns a house or condos is said to own a real property.
2. Personal property this can be further divided into tangible and intangible personal property.

- a) Intangible property: this includes cash and its equivalents like mutual funds, stocks, insurance policies, savings and checking accounts even the wad of bills you may have stocked in your sock wear.
- b) Tangible personal property: this is a large category of what people own; it includes anything you can touch and feel like jewelry, furniture, housewares, clothes and automobiles like cars and bikes.

2.1.6.2 Types of Property

Properties consist of components on the terrestrial surface, including both land as a separate property subject, and buildings permanently affixed to the land. The distinction between buildings and land may be determined by specific regulations, which dictate when a building is considered a separate entity from the land property subject²².

Real estate is a diverse investment class, and there are various types of real estate properties in which investors can invest. These properties can be broadly categorized into the following types:

Residential Real Estate: Residential real estate is a key component of household wealth because without it helps to provide shelter and keep us away from all weather²³.

- Single-Family Homes: These are standalone houses suitable for individuals and small families.
- Multi-Family Homes: Properties with multiple living units, such as duplexes, triplexes, and apartment buildings.
- Condominiums (Condos): Privately owned units within a larger complex with shared amenities.

- Commercial Real Estate:

Office Buildings: Properties designed for businesses and professional services.

Retail Properties: Spaces like malls, shopping centers, and standalone stores.

- Industrial Properties: Warehouses, manufacturing facilities, and distribution centers.
- Hospitality: Hotels, motels, resorts, and vacation rentals.
- Healthcare: Hospitals, medical offices, and senior living facilities.

Industrial Real Estate:

Warehouses: Facilities used for storing and distributing goods.

Manufacturing Facilities: Properties for production and assembly processes.

Flex Space: Versatile spaces that can be used for various purposes, often a combination of office and industrial space.

Specialized Real Estate:

Self-Storage Units: Facilities for people to store personal belongings.

Data Centers: Infrastructure for housing computer systems and servers.

Agricultural Land: Farmland for crops or livestock.

Timberland: Land used for timber production.

Mining Properties: Land with valuable mineral resources.

Mixed-Use Properties:

Properties that combine multiple uses, such as residential units above retail stores.

Real Estate Investment Trusts (REITs):

These are investment vehicles that allow you to invest in real estate without directly owning properties. REITs typically focus on specific sectors like residential, commercial, or healthcare real estate.

Real Estate Crowdfunding:

Online platforms that enable individuals to invest in real estate projects alongside other investors. Typically, you can invest in a portion of a property with a relatively small amount of capital.

Land Investments:

Buying undeveloped land for potential future development or land banking.

Vacation and Short-Term Rentals:

Properties rented out for short durations, such as vacation homes, Airbnb rentals, or VRBO properties.

Fix and Flip Properties:

Investors purchase distressed properties, renovate them, and sell for a profit.

Real Estate Development:

Involves acquiring land, obtaining permits, and developing it into properties, such as housing communities or commercial complexes.

Real Estate Syndication:

A group of investors pool their resources to invest in larger, more expensive properties, often managed by a professional sponsor.

Tax Liens and Tax Deeds:

Investing in properties with unpaid property taxes, either by purchasing tax liens (debt) or tax deeds (property ownership rights) at auctions.

Each type of real estate investment comes with its own set of risks, rewards, and requirements, so it's important to conduct thorough research and consider your financial goals and risk tolerance before choosing a specific investment strategy.

Real estate is dramatically affected by its location and factors such as employment rates, the local economy, crime rates, transportation facilities, school quality, municipal services, and property taxes can affect the value of the real estate²⁴.

Pros

- Offers steady income
- Offers capital appreciation
- Diversifies portfolio
- Can be bought with leverage

Cons

- Is usually illiquid
- Influenced by highly local factors
- Requires big initial capital outlay
- May require active management and expertise

Property value is a crucial factor in investment decision-making. An investment decision is a choice made by an organization or an individual after evaluating the anticipated outlook, as well as the financial and non-financial performance expected in the future, especially in the context of real estate investments. The value of a property can significantly impacts the

financial performance and attractiveness of an investment²⁵. Property value is relevant in various aspects of investment decision-making:

1. Purchase Decision:

Price Evaluation: Investors assess the current market value of a property to determine if it is priced appropriately. This valuation helps determine whether the property is a good buy or if it's overpriced.

Comparable Sales: Comparing the property to recent sales of similar properties in the area (comparable sales or "comps") is a common method to estimate property value.

Investment Criteria: Property value is weighed against an investor's investment criteria, such as desired return on investment, risk tolerance, and holding period.

2. Financing:

Loan Approval: Lenders consider the appraised value of a property when approving a mortgage or loan. The loan-to-value (LTV) ratio is an essential metric in determining financing terms.

3. Rental Income:

Income Potential: Property value affects the rental income that can be generated. A more valuable property can typically command higher rents, potentially increasing the return on investment for a rental property.

4. Equity:

Equity Building: As the property value appreciates over time, an investor's equity in the property also increases. Equity can be leveraged for further investment opportunities or used to fund property improvements.

5. Exit Strategy: Sale or Refinance: When an investor decides to sell or refinance a property, the current property value plays a vital role in determining the potential profit or available equity to access for other investments.

6. Risk Assessment:

Market Conditions: Property value is influenced by market conditions, and investors must consider market trends and forecasts when making investment decisions. Changes in property values may impact the risk associated with the investment.

7. Property Upgrades:

Value Enhancement: Investors may make property improvements or renovations to increase its value. These enhancements can lead to higher rents, improved marketability, and a potential increase in the property's overall value.

8. Tax Implications: Property Taxes: Property value can affect property tax assessments, which is an important consideration for investment property owners.

In real estate, property value is not static but can fluctuate over time due to various factors, including changes in the local real estate market, economic conditions, property condition, and location. To make informed investment decisions, investors rely on property appraisals, market research, and expert opinions to estimate the value of the property accurately.

Investors should consider property value alongside other key factors such as cash flow, location, market trends, and their investment objectives to make sound investment decisions and assess the potential return and risks associated with a property investment^{25,26}.

2.1.6.3 Residential Property

Residential property is described as properties that are occupied in order to provide shelter for the occupants and serves as a habitation for them. Residential property is a type of property that derives more than 80% of its revenue from dwelling units. Examples of residential properties are bungalow, duplex, semi-detached, storey building, self-contained, bed-room flat be it 1,2,3 and so on. Those types of properties are highly needed by mankind; hence command high demand when the location is good. Residential properties are meant to serve one major purpose; that purpose is to provide shelter for people who must rest after searching for daily needs. It is an aberration to think everyone should be able to afford decent accommodation due to the importance of shelter.

said the lower level of needs of man must have been reasonably satisfied before he craves for the satisfaction of high-level needs.' Among the lower level of needs need are food, shelter and clothing (psychological needs). High level needs and self-actualization. Due to the ever-increasing population, the need for the provision of more residential properties and its attendant social problems put much strain on the existing infrastructural properties and its attendant social problems put much strain on the existing infrastructural facilities which causes the demand for housing especially demand for residential properties causes the demand for housing especially demand for residential accommodation to go up. Due to this, zoning was introduced to prevent growing congesting, impairment of access to air, light and sunshine and invasion by improper use²⁷.

2.1.6.4 Factors Affecting Property Value

Previous research has found out that the factors affecting property value depend on a number of variables because housing is a heterogenous commodity.

Property values can be influenced by both intrinsic and extrinsic factors⁵

Intrinsic factors refer to the inherent qualities of a property that directly impact its value.

Here are some key intrinsic factors that can affect property value:

Location: The specific geographic location of a property, including its proximity to amenities, schools, transportation, and overall neighborhood quality, plays a significant role in determining its value.

Size and Layout: The size of the property and the layout of the structures on it are fundamental factors. Larger properties or those with efficient, well-designed layouts often command higher values²⁸.

Condition: The physical condition of the property, including the age of the buildings, the quality of construction, and the state of maintenance, can influence its value.

Aesthetic Appeal: The visual attractiveness of a property, both inside and outside, can impact its value. Well-maintained landscaping and appealing architectural features contribute to higher property values.

Property Age and Design: The age and architectural design of a property can affect its value. Historic or well-preserved buildings may have higher value, while outdated designs may have a lower appeal.

Upgrades and Renovations: Properties that have been upgraded or renovated with modern amenities and features often command higher prices compared to those that are outdated.

Utilities and Infrastructure: The availability and quality of essential utilities such as water, electricity, and sewage systems, as well as the overall infrastructure of the area, can influence property values.

Market Demand: The demand for similar properties in the market also affects intrinsic value. Higher demand often leads to increased property values.

Zoning and Land Use: The zoning regulations and permissible land use for a property can impact its value. Properties with flexible zoning and land use options may have higher intrinsic value.

Future Development: Anticipation of future developments or improvements in the surrounding area, such as new infrastructure projects or commercial developments, can influence property values.

Understanding these intrinsic factors is crucial for property owners, buyers, and real estate professionals to make informed decisions about property values and investments.

Size of Properties: One can generally assert that a property, the higher the value. For example, a piece of land may be more valuable than another parcel an acre of land in a similar location. Also, a 12-storey office complex may command a higher value than a two-storey office complex in a similar location.

However, size should not be limited to physical outlook alone, it must embrace the extent of use and how fragmented the interest subsisting in such property.

Architectural Design: The design of a building may have an adverse effect on the value of the property. Similarly, a well-designed property enjoys an enhanced value, and ensures that all necessary facilities and utilities are provided and well positioned in a house. For instance, the provision of conveniences and adequate parking space would have a reflection on the property value. A good design should include cross ventilation, good layout and enhancement of the aesthetic convenience and beauty of any property.

Quality of Finishing: Finishing being the exposed or visible parts of a building need to exhibit quality aesthetic, durability, and functionality. To achieve good quality of finishing, a high level of workmanship is required at the time of construction and may be more when the very best of finishes are used.

Floors may be finished in any of marble, terrazzo, PVC tiles and cement screed.

Walls are finished with various types of paints, usually texcote, gloss, emulsion and possibly with marble while polish or gloss paint may be applied to wooden surface. Metal surfaces on the other hand, may be protected with gloss paint or anti-rust coating. The fact is, location provide a reflection on the type on the type of finishers applicable to property in order for such property to command its true market worth, otherwise such building could be rendered physically and functionally obsolete.

Security and Condition of the Street: A residential property in prime location with maximum security for life and properties will attract more demand and is more valuable to investor and homeowners than a property in slum or congested areas.

The extrinsic factors refer to external elements or influences beyond the property itself that can impact its value. Here are some key extrinsic factors that can affect property value:

Economic Conditions: The overall economic health of a region, including factors like employment rates, GDP growth, and inflation, can impact property values. Strong economic conditions generally contribute to higher property values.

Interest Rates: The prevailing interest rates in the market influence the cost of borrowing for potential buyers. Higher interest rates can reduce affordability and potentially lower property values.

Market Demand and Supply: The balance between supply and demand in the real estate market affects property values. High demand relative to supply typically leads to increased property values, while an oversupply can have the opposite effect.

Government Policies and Regulations: Changes in government policies, such as tax incentives, zoning regulations, or housing development initiatives, can impact property values.

Infrastructure Development: The development of new infrastructure, such as highways, public transportation, and utility upgrades, can positively influence property values in the surrounding area.

Demographic Trends: Population growth, migration patterns, and demographic shifts in an area can affect property values. Increasing population and positive demographic changes often contribute to higher demand for housing.

Cultural and Social Trends: Shifts in cultural preferences, lifestyle choices, and social trends can impact property values. For example, areas that align with popular lifestyle choices may see increased demand and higher property values.

Environmental Factors: The presence of natural amenities or potential environmental risks can influence property values. Proximity to parks, water bodies, or scenic views may enhance value, while environmental hazards can have a negative impact.

Global Events: Events at a global scale, such as economic recessions, geopolitical events, or health crises, can have ripple effects on property values by influencing investor confidence and market dynamics.

Technological Advancements: The availability of advanced technologies and digital infrastructure in an area can impact property values, especially in the context of smart homes and connectivity.

Understanding these extrinsic factors is essential for anyone involved in real estate, as they contribute to the broader economic and social context that shapes property values. Investors, homeowners, and real estate professionals should stay informed about these external influences to make informed decisions^{28,29}.

2.1.7 Determinants of Residential Property Value

A number of factors affect residential properties in Nigeria. Numerous studies have identified a multitude of factors influencing land value. For example, social and economic factors often lead people to cluster in specific residential areas, aligning with the saying 'birds of a feather flock together.' In a study conducted in Jos, Nigeria, it was found that the elevated land value in Rayfield could be attributed to the area's elite status. This was due to the presence of medium to high-income earners, retired senior military officers, and a high level of security, primarily because of the government house located in the vicinity³⁰. A similar observation was made by another scholar in Sierra Leone, where the western part recorded higher land values, mainly occupied by the elite and decision-making class, while the eastern part had lower values, as it was predominantly inhabited by the middle and lower-class population³¹. The factors influencing property dynamics encompass a range of elements, such as population fluctuations, shifts in fashion and preferences, institutional influences (including culture, religious beliefs, and legislation), economic conditions, geographical location, complementary uses, transportation infrastructure, and regulatory planning measures²⁵. These factors are divided into two: extraneous factors and factors inherent in properties. Extraneous factors are those that influence the value of a property²⁶. Extraneous factors are external elements that exert an influence on the value of a property beyond its inherent characteristics or features. These factors can encompass a wide range of aspects, including but not limited to economic conditions, changes in market demand, shifts in demographics, alterations in government policies or regulations, environmental factors, and the overall condition of the surrounding neighborhood or area. Essentially, they are external forces that can impact the perceived worth or desirability of a property, often beyond the control of the property owner or immediate stakeholders²⁵.

2.1.7.1 Extraneous Factors

These are the factors that causes shift in demand and supply of properties. Values of properties as compared with commodity prices generally are determine by the market forces of attributed to the changing levels of demand and supply.

- i. Changes in Population: The population drift into major cities not only result in Over population and its attendant social problems, but also cause too much strain on housing which increase rental values because supply of housing at any point in time is relatively inelastic and cannot be immediately increased to match up with the growing demand. The resultant effect is the increase in slum and shanties in most of these areas, a situation which encourage substandard living.
- ii. Changes in Fashion and Taste: Changing times and situation have made values of old buildings in study areas to be unattractive, hence the low demand for them. Older buildings do not current functional requirement in housing unless the properties are renovated to suite the present day need standard prospective users.
- iii. Modern finishes such as aluminum sliding doors and windows terrazzo or mar oi floors, Wall pelmets, fashionable ceiling boards and Palladian finishes add more to the value of properties. The effect is that areas with high locational advantages in term of facilities, enjoy higher patronage and this is related in the related in the values.
- iv. Changes in Building Cost: Newly built properties in prime locations attract more demand but due to the rising cost of building materials which have been astronomical in recent years, the cost of constructing a property 1s now much higher than it was in the past.
- v. High cost of construction has the effect of raising the rental expectation of the owners of newly constructed buildings with a view to making profit on their investment within a reasonable period. It is now a common occurrence that such

- properties usually remain unoccupied for some time before the owners are forced to accept whatever rent the market can earn ⁶
- vi. Increase in Capital: Whenever there is a lot of liquidity or money circulation, demand for housing is more easily made effective, for instance money was in circulation during the oil boom era in Nigeria.⁷ Therefore, rental and sales value increased due to competition and effective demand. Reverse is the case during the recession period.
 - vii. Maintenance Condition of the Property: Some of the factors that can be Identified as being responsible for obsolesce in building are the lack of basic utilities and service, poor maintenance and changing technology.
 - viii. The need to ensure that residential properties are adequately serviced and provided with basic facilities and services coupled with good maintenance culture, for proper functioning and longevity need not be overemphasized. Among these infrastructural facilities and utilities are water supply, power supply, sewage and drainage system, refuse collection and disposal telephone lines, and good road network to enhance the value of properties³².

While the inherent Factors inherent in properties are those characteristics or attributes that directly impact the value of a property. These factors encompass a variety of tangible and intangible elements that contribute to the desirability and marketability of the property. Tangible factors include physical attributes such as the size, layout, condition, and quality of construction of the property itself, as well as the land it occupies. Intangible factors may include the property's location, neighborhood amenities, zoning regulations, historical significance, and potential for future development or appreciation³³.

For instance, a property located in a desirable neighborhood with good schools, convenient access to amenities such as parks, shopping centers, and public transportation,

tends to command higher values compared to similar properties in less desirable areas. Similarly, properties with well-maintained structures, modern amenities, and updated infrastructure typically have higher values than those in need of repair or renovation.

Other inherent factors that can influence property value include the property's architectural style, layout efficiency, natural lighting, views, and the presence of desirable features such as hardwood floors, granite countertops, or energy-efficient appliances. Additionally, factors such as the age of the property, its historical significance, and any unique or distinctive characteristics may also play a role in determining its value³³.

2.2 Theoretical Review

Several economic theories and concepts help explain the locational value of real estate. These theories provide insights into why certain locations have higher or lower values.

2.2.1 Accessibility Theory

In theory, accessibility is a concept that is understood as multidimensional. A notable example of this is the definition provided by a scholar which describes it as 'the degree to which the land-use transport system facilitates the ability of individuals or goods (or groups thereof) to access activities or destinations through the use of one or more transport modes or a combination thereof. The theory of accessibility in real estate investment centers around the idea that the ease of reaching and connecting to various locations and amenities significantly impacts property values and investment decisions³⁴. This theory is based on several key principles:

In transport planning, accessibility refers to a measure of the ease of reaching (and interacting with) destinations or activities distributed in space, e.g. around a city or country. Accessibility is generally associated with a place (or places) of origin⁹.

Five factors determine accessibility and they include; raw material, energy, work force, size of market and transportation. Accessibility, in general terms, describes degree to which a system is usable by as many people as possible. It is the degree of ease with which to reach a certain location from others and viewed as the ability to access functionality and possible benefits in transportation. Accessibility also refers to ease of reaching destinations. People in places that are highly accessible reaching many other activities or destinations quickly, while people in inaccessible places would reach fewer places in the amount of time.

Accessibility can be dissected into operational forms by dividing the concept into relative and integral accessibility. Relative accessibility pertains to the extent of connection between two places or points on the same surface. Integral accessibility, on the other hand, refers to the level of interconnectedness with all other points on the same surface²⁶. A scholar in the field suggested that accessibility is closely linked to the geographic concept of situation, which encompasses spatial relationships, interaction, and connectivity. Accessibility assesses the net economic costs involved in transporting individuals and goods from one location to another. It considers not only the physical distance between two points but also the time required to cover that distance³⁵.

The impact is not limited to the actual costs borne by the operation alone; rather, it extends to the tangible benefits. These encompass the overall revenue generated by the enterprise or organization, influenced by factors such as the volume of customers procuring its goods or services, as well as the individual spending of each customer.

General accessibility encompasses proximity to various transportation hubs such as rail termini, bus stations, and motorways, as well as the availability of labor, customers, and essential services like banks and health centers. On the other hand, special accessibility is characterized by the coexistence of complementary uses in close proximity to each other³⁶.

Accessibility is generally referred to as physical access to goods, service and destination, which is what people described as transportation⁵. The activity level of accessibility is unique to each individual and may be influenced or limited by factors which together comprise `travel horizons which includes; the geographic location of activities, availability of transport to places cost/ time and personal safety and security concerns.

Proximity to Amenities: Properties that are in close propinquity to essential amenities such as schools, hospitals, shopping centers, parks, and public means of conveyance tend to be more attractive to potential tenants or buyers. Access to these amenities can enhance the desirability and, consequently, the value of a property.

Transportation Infrastructure: The quality and convenience of transportation infrastructure, including roads, highways, public transit, and airports, play a crucial role in accessibility. Well-connected areas are often more attractive for investment because they provide convenience for residents and businesses.

Economic Centers: Accessibility to major economic centers, business districts, and employment hubs is a key consideration for real estate investors. Properties located near these areas are typically in high demand and can yield better returns on investment.

Zoning and Land Use Regulations: Local zoning and land use law can significantly influence accessibility. Understanding the zoning laws and future development plans in an area is essential for real estate investors to make informed decisions.

Walkability and Bike ability: The concept of walkability and bike ability is becoming increasingly important. Neighborhoods and properties that are pedestrian and cyclist-friendly are often more attractive for urban and environmentally conscious investors³⁷.

Market Trends and Demographics: Demographic trends, such as population growth, income levels, and lifestyle preferences, can influence accessibility requirements. Investors often consider these factors when assessing the potential of a real estate market.

Technology and Communication Infrastructure: In the digital age, access to high-speed internet and other communication infrastructure is crucial. Properties with reliable connectivity tend to be more appealing to both tenants and investors.

Future Growth and Development: Investors also evaluate the potential for future growth and development in an area. Accessibility to upcoming projects and developments can have a substantial influence on property values³⁸.

Understanding then applying the theory of accessibility is vital for real estate investors, as it can help them identify lucrative investment opportunities, make informed decisions, and maximize the potential return on their investments. The study shows that the two study areas are easily accessible which may be the reasons for boosting the interest of the investor investors to invest resources in those areas

2.2.2 Complementarity Theory

Complementarities suggest that as several sites within a specific area develop, they exert a significant influence on the future use of the remaining sites. Factors contributing to complementarity enhance the attractiveness of a site to potential users, consequently boosting demand for that site⁶.

Emphasis is placed on the significance of demand in determining the value of developed real property, including the value of land. This emphasis leads to the clustering of similar and dissimilar uses on adjacent sites. However, in cases where a site cannot be subdivided to provide a sufficiently small area for a specific user, that user may choose to combine their demand with others and locate on a more accessible site than would otherwise be possible.

It is possible to illustrate the way in which pattern of urban land use is determined with for whom accessibility is critical and who are willing to pay high prices for such sites. Thus, site next to major roads or nodal points are likely to be more accessible than sites distance from the main road and demand for advantageous sites will be cause values to be higher than in the surrounding area⁷. urban land rent theory, Classical theories of residential land rent primarily hinge on the complementarity between land and transportation costs. By amalgamating the effects of accessibility and complementarity, one can depict how the urban land use pattern is established, and the earning potential of certain firms hinges on their capacity to locate in specific areas. As urbanization progresses, the value of land in the most accessible and complementary positions diminishes, reflecting the drawbacks in terms of accessibility and complementarity. This underscores that areas with enhanced infrastructural amenities, such as well-developed roads, command higher value. Earlier theorists generally believed that sites adjacent to main transportation routes and key location attributes enjoy relative advantages compared to those situated at a distance, and other sites located at route connections possess relative advantages, with even greater benefits accruing to sites situated at the focal point of the transport system. These advantages are determined based on accessibility, which exhibits varying characteristics depending on the individual site's location. Road development projects are expansive and they exert a significant impact on the environment, landscape, spatial planning, and land management⁸. This study evaluates changes in the spatial structure of plots resulting from the construction of a city bypass. It shows that the writer focuses on the spatial planning, the land scape for the construction of the bypass road, failing to shed lighter to the revenue that will be generated from the morphology of the environment which is more important to the intending residence and even investors⁹.

The trends in property value are very important to property investors, because investors will want to know if he will realize his desired profits before investing his capital in such business. Therefore, trend will be so important to the investor.

2.2.3 Locational Theory

Theory Overview: Developed by economists such as Alfred Weber, location theory focuses on the optimal location for businesses based on factors like transportation costs, labor availability, and market proximity.

Application to Locational Value: Properties located in areas that align with optimal conditions for economic activities (e.g., access to markets, low transportation costs) tend to have higher locational values³⁹. Location may likely be one of the major factors for the increase in value in the study area because Akala road is near to Lagos Ibadan Express way likewise Ologuneru is near to Eruwa for easy rural urban settlement.

2.2.4 Urban Land Rent Theory

Theory Overview: Building upon bid-rent theory, urban land rent theory explores how land rent varies within a city based on location, accessibility, and land-use characteristics.

Application to Locational Value: Properties in areas with higher urban amenities, accessibility, and desirability often command higher locational values.

Understanding these theories helps stakeholders in the real estate market in decision-making regarding property development, investment, and land-use planning. These theories collectively contribute to the understanding of locational value from different perspectives, incorporating economic, geographic, and urban planning considerations. Each theory helps

explain why certain locations are valued differently and how factors such as accessibility, amenities, and land use influence the economic worth of a place⁴⁰.

2.3 Review of Empirical Studies

Many researchers have made research on the effects or impact of road construction on property values and this study is one of them that have the mind to give answers to some of the set objectives. The review would tend to focus on materials related to our set objective in this study.

2.3.1 Infrastructural Facilities and Residential Property Value

A study conducted on the analysis of the relationships of infrastructural facilities in the determination of rental values of residential properties in Akure, Nigeria revealed that the relationships that exist among the infrastructural facilities in residential properties are very relevant in the determination of the rental value of these properties in Akure. Some of the infrastructural facilities within most residential properties in Akure neighborhood include electricity, water, access road, toilet, kitchen, drainage channel, wall – fence, burglary proof, waste disposal facility, day-watch-security services, and night-watch security services²⁰.

In earlier researches, it was of the opinion that a residential user may be prepared to pay a high value for a property depending on his consideration for basic facilities such as accessibility, water and electricity²⁷. Along the same reasoning, other researcher detects those areas with basic facilities such as access roads, good drainage, electricity, public water supply and telephone entice higher property value²⁸. Some researchers examined the infrastructure development and real estate values in Meru County in Kenya revealed that

the effect of infrastructure development on real estate pricing is evident in Meru County and the factors that would lead to high pricing of the real estate include improved transport networks, improved social amenities, more industries, expanded educational institutions and more commercial centers²³.

However, most of the reviewed literature have confirm there exist relationship between road improvement and property values. The relationship exists in the presence of and absence of other variables like accessibility, noise, traffic, distance, conversion to other land use and others. Another scholar elucidates that accessibility facilitated by a motorable road network contributes to elevated rental values, particularly in locations with pronounced accessibility advantages. In scenarios where all properties are equally accessible via a motorable road network, these properties will experience heightened rental values due to accessibility effects such as reduced travel time and improved connectivity, notwithstanding potential challenges like traffic congestion²⁸. Conversion of residential properties to commercial uses or introduction of commercial uses in residential areas has brought about more negative than positive effects on adjacent residential areas. In most cases, neighbourhoods that have experienced road improvement tend to loss large percentage of residential properties to commercial use.

A study of the effect of road improvement on residential environment was the one that was investigated on the impact of Lekki-epe expressway on the housing value of the corridor²⁹. The scholar found out that prior to the construction of the road in 1985 both capital and rental value of residential properties had always been static but immediately after the construction of the road both capital and rental value of different residential properties jacked up. The scholar showed this by collecting a time series analysis of the rental and capital value of 2 bedrooms flat, 3-bedroom flat and 4-bedroom flat 10 years prior to the road construction and 10 years post road construction and found out that there is higher rate

in the value over the year. Not only that, the scholar also demonstrated that as a result of the Lekki-epe expressway there are increases in the level of contravention and stop work notices served on erring developer as a result of springing up of illegal development in the area where the expressway passes. This was demonstrated from the data obtained on time series analysis from Local Planning Authority of Ibeju Lekki Local Government Area of Lagos State.

In another development, a study was carried out titled “study of housing infrastructural facilities and tenant satisfaction in Jakande Estate Isolo” perceived that are deplorable nature and grossly lacking of infrastructural facilities in Jakande Estate Isolo accounted for the reason why about 78.5% of 438 residents in the study area intends to leave the estate for other areas. Especially poor road network, lacking drainage facilities and epileptic power/Electricity supply. Although the issue of water problem had been taking care of by each residents the sinking of borehole, deep well, and other means³⁰. The study further informed us that the deplorable nature as these facilities also accounted for the low rental value of house rent in the estate when compared with the similar Jakande Estate in Iba and Amuwo-Odofin Estate. As at year 2009 two-bedroom flat rental value is N200,000 per annum in Jakande Estate Isolo while two-bedroom flat rental values cost N300,000 per annum in Jakande Estate Iba and Jakande Estate Amuwo-Odofin. More importantly the variation in this rental value of two-bedroom flat in the three Jakande Estate is connected with the degraded and lacking nature of infrastructural facilities and services in Jakande Estate Isolo. The scholar equally maintained that the tenant and owners Jakande Estate Isolo are not satisfied with their living in the Estate due to problem of infrastructural/facilities and services that ravage in the Estate. He therefore recommends that all the lacking infrastructural facilities and services should be provided while the degraded facilities should be brought up to an acceptable standard.

In a comparative study of the assessment of state and services schemes in Kwara State found out that provision in infrastructural facilities and services like good road, water, drainage and waste disposal in transit camp (a state Government site and services) than Obanisuwa site (a Federal Government site and services scheme)³¹. The scholar adopted the use of 256 questionnaires in Obanisuwa site. At the end of the study, he found out that there is a significant difference in the level of development in the two site and services scheme. Furthermore, cost of house rent in transit camp (where there is rental value of houses in Obanisuwa Scheme (where there is no facilities) The scholar draws out that infrastructural facilities had to do with rental value of residential development in the study areas)³². The scholar recommends that before laying out areas for residential development infrastructural facilities and services need to be provided. The scholar equally recommends that those facilities should be provided in excess proportion so as to cater for the increasing population of the area. The basis of the scholar work was centered on infrastructural development and residential development. But the scholar was unable to examine the trend in the rental value of residential development by virtue of infrastructural facilities development. As will be done by this study.

Similar research works on the infrastructural facilities Maintenance culture and tenant satisfaction in Mile 2 Estate and Ebutte meta-Estate was found out in a comparative assessment of infrastructural facilities maintenance in the two estates, however he found out that infrastructural facilities are well maintained in Jakande Estate Mile 2 estate (state Government owned estate) than Ebutte meta estate (Federal Government owned estate)³³. The scholar observed that the infrastructural facilities in Ebutte Meta are badly managed to the extent that the estate nearly turned to a slum whereas the Community Development Association in Jakande Estate Isolo had wake up to the issue of infrastructural facilities and services³⁴. The resident of Jakande estate mile 2 estate is duly satisfied the nature and

quality of the infrastructural facilities in their area whereas the residents of federal housing estate Ebutte Meta are not satisfied with the kind of life they live in their estate as a result of deplorable nature of infrastructural facilities due to poor maintenance culture on the part of residents.

A scholar recommends that the residents of various housing estate should embrace good, sound and proper maintenance of the culture so as to improve the longevity of these infrastructural facilities for efficient functioning. Not only that he further recommends that federal and state government and private sector should upgrade all degraded infrastructural facilities and services from time to time in their own estate. Although his study with the aid of Chi-square test confirmed the importance of infrastructural facilities in the development of housing estate however, he was unable to tell us in trend of residential property value due to infrastructural provision and upgrading in an area³⁵.

In a related work on facility upgrading and market value of residential value in Ijorabadia are of Lagos State³⁵. The scholar informed us that the following facilities services electrification, road, drainage water was provided in different area of Ijerobadia like Pako, Ile Iwe, Ijora, Badia. The scholar further observed that the infrastructural facilities and services had effect on resident's life as testified by 75% of the residents. The scholar equally rated the condition of the provided facility as in poor condition due to mismanagement on the resident. As for the effect of facilities upgrading on housing market. The scholar confirmed that it increases the rental value of the housing as all the 200 respondent (100%) testified to it. In rating the proportion of rental value of residential property. The scholar maintained that most residential dwelling increases by one and half of the original i.e. 75% increase. In order to drive home a point, the scholar pointed out the amount paid for house rent of a rooming apartment before facility upgrading which is N5,000 which rose up to N8,500 per month after facility upgrading. The scholar affirmed that the increment in the

rental value of housing can be attributed to facility upgrading in the study area. But as good as another study, the scholar was unable to tell us the trend of rental value in the study area due to facility upgrading. As this study will dwell on estimating the trend in residential property value due to facility provision and upgrading¹⁸.

In similar research conducted on the assessment of infrastructural facilities and tenant satisfaction in Kulende Estate of Kwara State where he rated the condition of infrastructural facilities and services in the estate as being poor to the extent that the sanitary condition of the residents are being threatened only that the poor infrastructural facilities also responsible for the scattered development of housing in the estate since 1976³⁶. The scholar also informed us that the gross inadequacy of infrastructural facilities and services in the estate is also responsible for the poor rental value and capital value of resident property in the area. He further informed us that the extending developer in the estate had to pay a very huge amount of money for infrastructural facilities provision before commencing development of residential property construction³⁷.

Through the chi- infrastructural facilities has a significant difference on the level of tenant satisfaction. The scholar also demonstrated a link between infrastructural facilities and services like good road, electricity, drainage facilities, water, solid waste disposal site, schools, health centre and so on need to be provided as a starting point for estate development in an area. As good and laudable the research is, the researcher was unable to tell us the trend of the residential property value and infrastructural facilities in that area, which will be the focus of this study³⁸.

2.3.2 Comparison of the Trend of Property Value in the Adjoining Area to Locational Attributes

Other researcher investigated the locational attributes of the challenges of housing from Sawmill industry location point of view conducted in Ikire, where the researcher viewed the effect of Sawmill location within residential area from noise and rental value point of view. The researcher observed through a noise meter that most of the machine used for lumbering and sawning activities in Sawmill impacted a very loud noise and sound as high as 125 Decibel and as low as 45 decibels when the acceptable noise/sound level required by UNO is 55 decibels³⁸. The scholar later concludes that majority of residents living close to Sawmill were suffering from partial deafness. Residential value decreases as one is moving very close to Sawmill location based on the fact that Sawmill is dangerous to health¹⁸. The hypothesized this by using one room apartment Room and Parlour, wing apartment and 2-bedroom apartment as a pilot survey and now found out that residential value has a significant effect with Sawmill location. The scholar also informed that the people that stay less than 500m distance to the sawmill are not satisfied with their housing and are hoping to relocate as soon as they have money. The scholar recommends that sawmill should be cited at the fringe of urban area. But the study fails to consider the trend of these residential property value on yearly basis as will be done by this study¹⁸.

Similar research works on the study of Health care waste within residential property environment is another locational attribute study of 19 healthcare centre in Lagos Island Local Government Area of Lagos State, it was observed that it is only Lagos Island Hospital that have a well-defined incinerator whereas other healthcare centre does dispose their healthcare waste anyhow which poses health risk to the residents of adjoining neighborhood to the healthcare centre. The scholar cited example of an area in OkeArin where the needle and sharp blade mistakenly fall from the vehicle as a result of improper storage and a resident stepped on it which led to cut and infringement of injuries to the person³⁸.

The scholar further shows that an indiscriminate management of healthcare waste poses health problem to the residents of the adjoining properties by taking sample of some well water that are close to the health centre and those that are far to the health centre to the Iju water works station for water analysis. The scholar found out that some of the well close to the health centre had been polluted by medical waste whereas those well far away from the healthcare are free from biomedical waste, this make the value of residential property value were not shown by his study³⁹.

In another study conducted on the study of the effect of religious centre within residential location in Egbeda Local Government Area of Oyo State is another locational attribute study looking at it from religious point of view⁴⁰. The scholar investigated churches, mosque and traditional worshipping centre in Ade Ojo estate, Olubadan estate and Alarere estate all in Egbeda Local Government Area of Oyo State which represent different residential density. (Low, medium and high). The scholar found out that religious centre activities cause or generate socio psychological effect to the wellbeing of the residents of the adjoining neighborhood. But the enormity of this problem is more peculiar in high and medium residential estate than the low residential density which the attributed to the fact that many residents of low residential density are well informed and educated, they are ready to report to ministry of environment or go to court. Although the scholar claimed that the residents living nearer to these worshipping centres are very disturbed and not satisfied with their environment due to persistence disturbance that causes them psychological imbalance⁴⁰.

The identified fear, vibration from generators noise from megaphone, traffic congestion among others are the effects poses by the religious centre to residential property environ. Over utilization of social amenities in the communities, littering of environment after services and other challenges among others were also identified which reduces the residential value of property around that area compare to those area far off from religious

centre. The scholar recommends that there should be banishment of the use of microphone, megaphone during services and religious centre should be located at a reasonable distance to a residential house. But the study was unable to tell us about the trend of residential property value variation in his study area as will be investigated by this study⁴¹.

2.3.3 Effect of Road Construction on Property Value

City development typically occurs at nodal points within the transport system, where areas boasting excellent transportation access to other regions hold a comparative advantage over locations with inferior transport infrastructure⁶. Locations with relative advantages are situated where various transport routes converge, and enhancing overall transport facilities will augment the population size. This enlarged population, with increased effective demand, fosters greater commercial activity, leading to a rise in transactions and exchanges. In this context, the road network signifies transportation infrastructure that ensures easy accessibility to properties.

Transportation is the movement of people and goods from one place to another by land (by road, rail, human portage, motorized and non-motorized vehicles), across water (ship, canoe, boat, etc) and through air (helicopter, light and heavy aircraft, etc) one thing is clear, transportation or transport involves the movement of people, goods and services from origin to destination either by road, air, sea, rail, human portage, animal, pipeline and even telecommunication or combination of these modes to bring inter-modal essence of final movement of such goods, people or transportation centrally affects the relationship between physical space and society, and changes in transpiration affect the organization of human activity in urban and regional space.

It structures the built environment, spurs urban growth, as well as order relationship among in a national urban system. In a UK study, it was discovered that road transport had a positive

impact, especially in terms of increasing capital values of residential properties. However, the study did not heavily emphasize precise quantification of these values, suggesting that some of the observed increases might be attributed to market optimism rather than solely to actual effects³⁹. Similarly, there is evidence suggesting that residential property prices might decrease in the immediate vicinity of transport investments or stations. The study's determination of value increase was narrow, primarily focusing on changes in property and land values, whereas a broader range of measures should have been employed. These measures should have encompassed changes in accessibility, patterns of land and property ownership, site consolidation, transaction volumes, yields, as well as composite measures like the density of development.

Road construction affect an intending investor because once the road is constructed value of land increases, which means any one that those not have enough financial capacity may not be able to afford land which is the major tools needed for real estate investment. Also tax levied on properties in that area will increase, this will then cut down the revenue that will be generated from the investment.

From the foregoing, one can conclude that the choice of road network pattern affects property value. Properties in an area with good road accessibility will not doubt appreciate in value than those located in an area with poor accessibility.

Road network pattern is a model of roadway adopted in an area. Having discussed various topics under the conceptual and empirical literature of road network; the study figures out the factors affecting property value which are numerous; it also emphasized on how road network pattern affects the property value and also identified the discussed vividly the types of residential property, determinants of residential property rental value and also discussed the effect of road pattern on residential property value. More so, the study focused more on effects of road network pattern on residential property rental value with little attention given

to other factors such as local demand and supply etc. to determine property values. While road construction often has positive impacts on property values, there can be instances where it may have negative effects. Here are some potential negative impacts of road construction on property values:

Noise and Disruption: Construction activities, such as heavy machinery, roadwork, and construction vehicles, can generate noise and cause disruptions. Excessive noise and disturbances may lead to discomfort and decrease the appeal of the neighborhood, thus affecting property values.^{39,40,41}

Traffic Congestion: During road construction, traffic congestion and detours can be common, causing inconvenience for residents. Increased traffic and difficulties in commuting may be viewed negatively, influencing property values in a less favorable way.

Dust and Pollution: Construction activities often result in dust and air pollution. The presence of dust and pollutants can have adverse effects on air quality, impacting the overall livability of the area and potentially lowering property values.

Access Issues: Temporary Road closures or restrictions during construction can limit access to properties. Difficulty in reaching homes or businesses may deter potential buyers or tenants, affecting property values.

Aesthetic Changes: The visual impact of construction sites, temporary structures, and alterations to the landscape may not be aesthetically pleasing. Changes in the neighborhood's appearance can influence property values, especially if the alterations are not perceived positively.

Perceived Decrease in Safety: Construction activities may create an environment that is perceived as less safe. The presence of construction sites, equipment, and temporary changes to the neighborhood may lead to concerns about safety, impacting property values.

Delay in Project Completion: If Road construction projects experience delays or are prolonged, the negative impacts on property values may persist for an extended period. Uncertainty about when the construction will be completed can contribute to a less favorable perception of the area.

It is vital to note that the actual impact of road construction on property values can vary based on factors such as the scale of construction, the duration of the project, and how well local authorities manage the associated challenges. Additionally, negative impacts are often temporary, and property values may recover or even increase once the construction is completed and the area returns to normalcy^{43,44}.

2.3.4 Factors Influencing the Effect of Road Construction on Property Value in the Study Area

The construction of roads can have a significant impact on property values, and various factors influence the extent of this impact. Here are some key factors:

Proximity and Accessibility: Properties situated close to the new road may experience different effects than those farther away. Proximity to major roads may increase visibility and accessibility for commercial properties but could lead to noise and pollution concerns for residential properties⁴⁵.

Distance to Roads: Properties located closer to newly constructed or upgraded roads often experience a more substantial increase in value due to improved accessibility.

Connectivity: The degree to which the new road enhances connectivity to essential services, commercial areas, and transportation hubs can influence property values.

Road Quality and Design:

Road Design: Well-designed roads with features like bike lanes, pedestrian walkways, and aesthetic elements can positively influence property values.

Road Maintenance: The long-term maintenance and upkeep of the road infrastructure can impact property values. Well-maintained roads contribute to a positive perception of the neighborhood.

Aesthetic Considerations: The visual impact of the road, including design features, landscaping, and overall aesthetics, can influence how properties are perceived. Well-designed and visually pleasing roads may have a less negative impact on property values.

Noise and Air Pollution: Increased traffic from the new road can lead to higher noise levels and air pollution. Residential properties near busy roads may experience a decrease in value due to these factors.

Traffic Noise: Properties close to busy roads may experience decreased values due to increased traffic noise. Effective noise barriers or landscaping can mitigate this impact.

Air Quality: Pollution from increased traffic may affect air quality, influencing property values. Well-designed roads with environmental considerations may have a lesser impact on air quality.

Infrastructure Improvements: Road construction projects often come with additional infrastructure improvements, such as better drainage systems, sidewalks, and street lighting. These improvements can positively affect property values⁴⁶.

Zoning and Land Use Changes:

Zoning Regulations: Changes in zoning regulations due to road construction may affect property values. For example, a shift to mixed-use zoning might positively impact commercial properties.

Land Use Planning: Proper land use planning around the new road can enhance property values, ensuring compatibility with the surrounding environment.

Amenities and Services:

Access to Amenities: Improved access to amenities such as schools, parks, shopping centers, and public services can positively influence property values.

Public Services: Proximity to emergency services, public transportation, and other essential services can contribute to increased property values.

Perception and Demand:

Perceived Value: Public perception of the road construction project and its potential benefits to the community can influence property values.

Demand: Increased demand for properties in areas with improved road infrastructure can contribute to higher property values.

Economic Development:

Business Opportunities: Enhanced Road infrastructure can attract commercial development, potentially increasing property values in the vicinity.

Job Creation: Road construction projects may lead to job creation, positively impacting the local economy and property values.

Timing of Construction:

Construction Phase: The disruption caused during the construction phase may have a temporary negative impact on property values. However, values may rebound once the project is completed.

Community Engagement:

Community Engagement: The level of community engagement and consultation during the planning and construction phases can affect how residents perceive the project. Positive community engagement may mitigate some of the negative effects on property values.

Market Conditions: The overall real estate market conditions at the time of and following road construction can influence property values. A strong market may absorb potential negative impacts more effectively.

Perceived Benefits: The perceived benefits of the road construction project, such as reduced commute times, improved connectivity, and potential for increased economic activity, can positively influence property values⁴⁷.

It's important to note that the impact of road construction on property values is complex and context-specific. The interplay of these factors, along with effective planning and management, can help minimize negative effects and potentially enhance property values in the long run.

1) **Economic Factors:**

This is a macro-environment factor that affects the sale, purchase, and value of all goods and services. Specific to a country, the disposable income levels of its population, the unemployment rate in the country, the poverty index, the human development index, and the GDP, are some of the economic indicators that illustrate a country's economic performance. Usually, the higher the economic performance the more income and optimism the people of the country have, this leads to people having a positive attitude towards spending and this drives up the demand for property, increasing the property value and prices⁴⁸.

2) **Political Factors:**

The political steadiness of a country determines the outlook of a lot of other factors, such as ease of doing business, economic certainty, ease of making choices, and ease of making

investments. Generally, the stable the political scenario of a country, the better is the country's economic landscape. This keeps the aggregate demand high; the economy keeps growing, and the value of the property and material wealth appreciate.

3) **Supply and Demand:**

The supply and demand of a particular size and kind of property would also determine its value. The greater the demand for a property, the higher the price/value. The relation of property value with supply is an inverse one, and the more of something is available, the less valuable it becomes.

4) **Location:**

The location where the property is located plays a big role in determining the value of the property. What is the location like? Is it in an upscale area? Is it located near schools and restaurants? What is the commercial value of the area? All such things play a part, proximity to other residential areas and office areas, and many other such location-dependent factors have a role to play.

5) **The Comp Set:**

This is usually a term used to describe comparable properties. In a particular area, check the prices and value of property similar to the one you want to find out more about. Then compare the prices based on the size, space, age, location, and amenities present among all these.

7) **Age and Condition:**

How old is the property? How many real estate repairs does it need? Usually, if the answers to these questions are relatively new, and not many repairs, the property has a high value.

Apart from age, the condition of the property matters. People would rather buy a 10-year-old well-maintained space, rather than a new space with the need for renovations.

8) **Interest Rates:**

Interest rates in a country can determine the value of properties to quite an extent. They determine the level of spending and the investor confidence in the area. The lower the interest rate, the lower the mortgage payments and interest payables to banks and lenders. This would also mean that investing is better than placing money in the bank for lower returns. In this case, the property will become more affordable for people wanting to take out mortgages.

9) **Renovation Potential:**

Buyers are interested in a property that they can customize and renovate according to their will and choice. This would mean that if a property has more usable space and there is room for upgrading bathrooms, and design implementation, then the property is likely to have a higher value.

10) **The ‘Curb-appeal’ and Upgrades:**

If you have a property and you wish to improve upon its price and value, go for renovations and improvements in the ‘curb-appeal’ or outside look and feel of the house. Have it repainted, have new bathrooms and bedrooms made, refurnish the floor, and bring in a new house plan and incorporate the use of design-thinking to come up with customizable or flexible designs. As stated in the beginning, knowing the accurate value of a property is important if you wish to get a good deal. For this to happen one must understand the factors that determine the value of the properties⁴⁸.

2.3.5 Factors Explanation

1. Distance1. Distance to city center Each city has a central location, which is often a starting point for provincial roads, or a post office of the city.

2. Distance from the land to the People's Committee at the study area the impacts of this type of distance on land values are: convenience, accessibility to the State public agencies and stability of the city. The People's Committee is often considered the administrative center of the residential area.
3. Distance to the police station Indicates safety and security level of the area.
4. Distance to schools' Closer distances are essential for families so that they can take their children to school easily. Schools include Primary, Middle and High schools.
5. Distance to colleges, universities and vocational schools Indicates the advantages of accessing to training and educational centers.
6. Distance to health facilities the distance to health centers and hospitals indicates accessibility to health facilities, medical examination and treatment.
7. Distance to markets is one of Vietnam's characteristics. This factor indicates accessibility to food and groceries. Selected markets are markets with adequate infrastructure (road markets are not included).
8. Distance to supermarkets and shopping malls Distance to supermarkets and shopping malls adapts the residents' shopping needs.
9. Distance to centers of culture, art, museums, theaters and sports Adapts the needs for cultural, arts and sport activities.
10. Distance to parks and outdoor play areas This is for daily entertainment for people at all ages.
11. Distance to kindergartens and public pre-schools Facilitates accessibility for families that have children at preschool age.

12. Distance to bus and railway station Makes travelling more convenient for the residents.
13. Distance to national historic sites Residential areas that are near the national historical sites will be more valuable than others. This will bring cultural influences and spiritual values to the residents.
14. Distance to tourist destination Tourist destinations such as resorts, ecotourism destinations.
15. Distance to pollution sources Lands that are close to pollution sources such as chemical plants are heavily contaminated, directly affecting the residents and their health^{49,50}.

2.4 Conceptual Model

The conceptual framework related to the impact of road construction on property value typically involves identifying key variables, relationships, and factors that influence how road infrastructure projects affect the value of surrounding properties. This framework can be broken down into several components that account for the direct, indirect, positive, and negative impacts of road construction on property values.

The development of new roads or the improvement of existing ones can significantly influence property values. The impact, however, varies based on several factors, such as the type of road project, the surrounding area, and the nature of the real estate market. Understanding these factors can help predict how road construction projects will affect residential and commercial property values. Construction of property is in phases Pre-Construction Phase, Construction Phase, Post Construction Phase. Pre-Construction Phase,

this phase involves all the preparatory activities before the main construction begins. It includes factors such as property value appreciation or depreciation, influenced by elements like location, available amenities, and the overall built environment. Key tasks during this phase also include road construction planning and announcements, as well as understanding initial perceptions and expectations from residents and realtors. The construction phase marks the beginning of the main building activities. It involves physical disruptions such as noise, dust, and changes in accessibility. Temporary alterations to traffic patterns and parking arrangements may occur, along with potential health and safety concerns. Additionally, the visual impact of the project is evident, with barriers, construction equipment, and materials becoming part of the landscape during this time. The post-construction phase marks the completion of the construction work and is a critical stage for assessing the long-term effects of the project. Key outcomes during this phase include Improved accessibility and connectivity. The newly completed road enhances transportation options, making it easier for residents, commuters, and businesses to access the area. Enhanced safety Features the addition of safety measures such as pedestrian crossings, traffic signals, and improved lighting contributes to safer environments for both drivers and pedestrians. Aesthetic appeal Landscaping, design elements, and other visual enhancements can improve the overall look of the area, making it more attractive and appealing to residents and potential buyers. Increased Property Visibility and Exposure Properties near the newly constructed infrastructure may experience higher visibility, potentially leading to greater demand and increased property values.

Factors Influencing Road Construction Impact on properties are numerous Proximity to Road Construction: The closer a property is to a road under construction, the more likely it is to be affected. However, the nature of the road (major highway vs. local road) also plays a role. Duration and Intensity of Construction: Longer construction periods and more disruptive

activities (e.g., noise, dust, detours) tend to have a more significant negative impact on property values. Type of Road, whether it's a new highway, a local road, or a major arterial road, each type of construction project can have varying impacts on property values. Highways or expressways may cause more disruption but could also lead to higher accessibility and potential future property value appreciation. Traffic Flow and Accessibility: Increased or decreased traffic flow as a result of the road project can influence property values. Improved accessibility could increase demand for properties, while heavy traffic and congestion might decrease appeal.

2.5 Summary of Gap in Literature Reviewed

A great attention has been taken in this research to investigate the relevant literature to examine the trend of road construction on property value in Ido and Oluyole local government of Oyo state. Locational attributes and infrastructural facilities are some of the factors influencing variation in residential property value in Cities as demonstrated in the Literatures.

The concept of property and Property Values were discussed. Also, Empirical studies on property value trend were given. It was concluded that adequacy or otherwise of infrastructural facilities like water supply, road, drainage etc. had influence on residential property value in an area. Also, locational attribute (industry, urban Agriculture etc.) had influence on residential property

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Chapter Three

Methodology

This chapter explains the procedures and methods of data collections that were employed to achieve the objectives of this research. This was done systematically and chronologically so that a logic conclusion may be achieved.

3.1 Research Design

This study employed a cross-sectional research design. A cross-sectional research design involves collecting data at a single point in time from different peri-urban areas with varying degrees of road construction. By analyzing property values and road infrastructure characteristics across these areas, in order to identify correlations and associations between road construction and property values.

3.2 Population of the Study

The study population for this project were the occupiers, estate surveyors and valuers, selected investors in Oluyole local government (Akala Road) and Ido Local government (Ologuneru-Eruwa road). This is because they are the investors getting revenue from the property investment, as well as the property managers in charge of the properties, they were able to give adequate assessment of how the road development affect the value of properties in those areas.

3.3 Data Requirement

Primary data was used for this study, questionnaire was designed and administered on the investors along the road corridor of the study area. because they are the one investing resources and the road affect their decision making.

3.4 Sampling Frame:

The total number of houses along the road in the study area based on preliminary survey indicated that Ologuneru-Eruwa has 247 houses and Akala has 212 houses along the road. Buildings along the road was chosen because they are mostly affected with the road construction.

Table 3.1: Sampling Frame

Study Area	No of Houses
Ologuneru-Eruwa road	247
Akala road	212
Total	459

Source: Researcher's Field Survey, 2024

3.5 Sampling Techniques

The method that was used for sampling is simple random procedure because simple random is a subset of a statistical population in which each member of the subset has an equal probability of being chosen. A simple random sample is meant to be an unbiased representation of a group. This was chosen because Random sampling ensures that results obtained from residents, estate surveyors and valuers, investors (Akala Road) and Ido Local government (Ologuneru-Eruwa Road). sample should approximate what would have been obtained if the entire population had been measured. The simplest random sample allows all the units in the population to have an equal chance of being selected.

3.6 Sample Size

The sample size was the number of houses purposively selected from the two study areas that are within 50 meters from the main road which amount to 148 houses from Akala and 173 for Ologuneru-eruwa road.

Table 3.2: Sample Size

Study Area	No of Houses
Akala road	148
Ologuneru-Eruwa road	173
Total	321

Source: Researcher's Field Survey, 2024

3.7 Questionnaire Design

For the purpose of this study questionnaires was design based on the objectives of the study. Objective one which has to do with examining the morphological characteristics of the Road on property value in Ido Local government area and Oluyole Local government, While the second objective deals with evaluation of the effect of Road on property value in the study and investigating factors influencing the effect of Road construction on property and lastly examining the trend of examine trend in values of properties in the selected areas.

3.8 Method of Data Analysis

Primary data collected from this study was analyzed using descriptive statistics while factor analysis was used to analyze the factors affecting the value of properties in the study area. And the graphical method of analysis was used to determine the trend in capital value and rental value of property in the area while the questions were analyzed using inferential statistics such as KMO and Bartlett's Test.

Data realized from administration of the research instruments was analyzed and processed with the aid of Statistical Packages for Social Sciences (SPSS version 26). In the analysis, the "Mean Score" method was adopted to establish the effect of road construction on property value. This will enable the researcher assign positions (rank) to different factors influencing property value the sensitive factors ranked first, while the least sensitive factors were ranked at the bottom of the table.

Table 3.3: Summary of Data Analysis Techniques

Formulated Objectives	Data Required	Method of data Analysis
1. examine the morphological characteristics of the road construction in selected peri urban area in Ibadan. Oyo	Respondents Biodata types of road construction in the study area. The road facilities, present state of the road, the year of road construction.	Simple descriptive, frequency table was used to determine the objective.
2. evaluate the effect of road construction on property value in the study	Analyze the positive and the negative effect of the road during and after construction.	Descriptive, Frequency table, percentage was used to determine the objective.
3. examine trend in value of properties in the selected areas.	10 years trend of property market and rental value in the study area.	Frequency table, Percentage, graph was used to determine the objective.
4.investigate factors influencing the effect of road construction on property value in the study area.	Factors that influence the effect of road.	Mean ranking, Factor Analysis was used to determine the objective

Source: Researcher's Field Survey, 2024

Results and Discussion of Findings

The chapter provides empirical information concerning the result of the data analysis concerning data description, interpretation of the result, and the discussion of the study's implications within the existing literature. This study aims to assess the effect of road construction on property value in selected peri-urban areas in Ibadan, Oyo State, Nigeria.

to provide information on actionable insights for estate managers, helping them navigate the complexities of the real estate market in peri-urban areas undergoing road construction. It can inform decision-making processes related to property valuation, investment, and overall portfolio management in the context of infrastructure development. This research was carried out via a questionnaire to acquire the necessary information for this purpose. The study adopted the SPSS version 26 for the descriptive and inferential statistics to analyze the data.

4.1 Response Rate

A total of three hundred and twenty-one (321) questionnaire were administered to the occupants of the houses that are within 50 meters from the main constructed road in the selected study areas, and three hundred and five (305) questionnaires were returned. After sorting the questionnaire only two hundred and fifty (250) copies were certified as duly filled and considered usable. The useable questionnaire represented 77.88% response rate. The response results are presented in Table 4.1.

Table 4.1: Response Rate

Responses	Frequency	Percent
Completed usable copies of the questionnaire	250	77.88%
Unusable, unreturned, and disqualified questionnaires	71	22.12%
Total	321	100%

Source: Researcher's Field Survey Results, 2024

Table 4.2 Demographic Characteristics of Respondents

Variables	Category	Frequency	Percentage
Gender	Male	209	83.60%
	Female	41	16.40%
Age	41 – 60 years	215	86.00%
	61 – 80 years	35	14.00%
Marital Status	Single	2	0.80%
	Married	248	99.20%
Level of Education	HND	36	14.40%
	BSc	214	85.60%

Source: Researcher's Field Survey, 2024

This section consists of background and respondents' information that describes basic characteristics such as gender of the respondents, institution, age, marital status and level of education, the results are presented in Table 4.2. Accordingly, the profile of gender indicated that 209 respondents representing 83.60% were male, while, 41 respondents representing 16.40% were female, indicating that most of the respondents were male. The majority of the respondents in the study are male. This implies that, since men are regarded as the head, they will be able to give genuine information because of their involvement.

Also, it can be deduced from the table that 215 respondents, representing 86% are in-between the age of 41-60 years, and 35 respondents, representing 14% are in-between 61 – 80 years. The majority of respondents fall within the 41–60 age group. The findings suggest that the perspectives gathered in this study primarily reflect the opinions and experiences of individuals in the middle-to-upper age range. 2 respondents, representing 0.80% are single, and 248 respondents, representing 99.20% are married. The overwhelming majority of respondents are married. Findings also revealed that; 36 respondents, representing 14.40% are HND holders, and 214 respondents, representing 85.60% are BSc degree holders. The majority of respondents have a Bachelor's degree (BSc). This suggests a relatively high level of education among the participants.

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4.2 Presentation of Data

4.2.1 Examine the Morphological Characteristics of the Road Construction in Selected Peri Urban Area in Ibadan, Oyo State.

Table 4.3 Morphological Characteristics of the Road Construction in the Selected Peri Urban Area in Ibadan, Oyo State

Morphological Characteristics	Category	Frequency	Percentage
Types of Road Construction	State Road	160	64.00%
	Local Road	41	16.40%
	Federal Road	49	19.60%
Road Facilities	Road Way	32	12.80%
	U-turn Facilities	43	17.20%
	Median	50	20.00%
	Drainage	82	32.80%
	Traffic Light	43	17.20%
Is the Road Serving its Purpose?	Not Satisfy	76	30.40%
	Slightly Satisfy	91	36.40%
	Moderately Satisfy	81	32.40%
	Very Satisfy	2	0.80%
Was your property affected during the Construction of the Road?	Not Affected	84	33.60%
	Moderately Affected	35	14.00%
	Moderately Affected	34	13.60%
	Majorly Affected	97	38.80%
What is the Present state of the Road?	Poor	35	14.00%
	Fair	49	19.60%
	Good	75	30.00%
	Very Good	91	36.40%
When was the Road constructed?	1985	35	14.00
	2006	50	20.00
	2008	41	16.40
	2009	92	36.80

Source: Researcher's Field Survey, 2024

Table 4.3 shows the morphological characteristics of the road construction in the selected peri urban area in Ibadan, Oyo State. It can be deduced from the table that; 160 (64%) of the respondents agreed that the state road is predominant in the study area road is sometimes available, 41 (16.40%) agreed that it is often available, and 49 (19.60%) of the respondents agreed that it is always available. The majority of respondents report that the types of road construction (state) are only sometimes available. This might be a result of inconsistency or variability in the presence of state-level road construction in the selected peri-urban areas. 32 (12.80%) of the respondents agreed there are roadway facilities in the selected study areas, 43 (17.20%) respondents agreed there is a U-turn facility in the study areas, 50 (20%) respondents agreed there is a drainage median facility, 82 (32.80%) of the respondents agreed there are drainage facilities, and 43 (17.20%) of the respondents agreed there are traffic light facilities. The distribution of road facilities indicates that drainage is the most frequently mentioned feature, suggesting its importance in road construction. The presence of traffic lights and median also stands out, indicating the complexity and development level of the roads.

It can also be deduced from the study that; 76 (30.40%) of the respondents are not satisfied, because the road is not satisfying its purpose, 91 (36.40%) of the respondents are satisfied, 81 (32.40%) are moderately satisfied, 2 (0.80%) are very satisfied. A significant proportion of respondent's express dissatisfaction or only slight satisfaction with the road serving its purpose. This indicates that there may be perceived shortcomings or issues with the functionality of the roads in the selected areas. 84 (33.60%) of the respondents said their properties were not affected during the construction of the road in the selected study areas, 35 (14%) of the respondents said their properties were minorly affected, 34 (13.60%) of the respondents said their properties are moderately affected, while 97 (38.80%) of the

respondents said their properties were majorly affected. A notable number of respondents report that their properties were majorly affected during the construction of the road. This suggests potential disruptions, inconvenience, or adverse impacts on properties during road construction.

Table 4.3 also reveals the present state of the road, 35 (14%) of the respondents revealed that the present state of the road is poor, 49 (19.60%) revealed that it is fair, 75 (30%) of the respondents revealed that it is good, 91 (36.40%) of the respondents revealed that it is very good. While a significant portion of respondents rate the present state of the road as good or very good, there is still a notable percentage that considers it fair or poor. This indicates variations in perceptions regarding the current condition of the roads.

Information was also retrieved on the date the roads were constructed, 35 (14%) of the respondents said the roads were constructed in 1985, 50 (20%) of the respondents said 2006, 41 (16.4%) of the respondents said 2008, 92 (36.8%) of the respondents said it was constructed in 2009, and 32 (12.8%) of the respondents said it was constructed in 2023. The distribution of the construction years provides a temporal context. The concentration in certain years (especially 2009) may indicate phases of significant infrastructure development. The age of the road may influence its current state and the satisfaction levels of residents.

4.2.2 Examine the Trend in Value of Properties in the Selected Areas

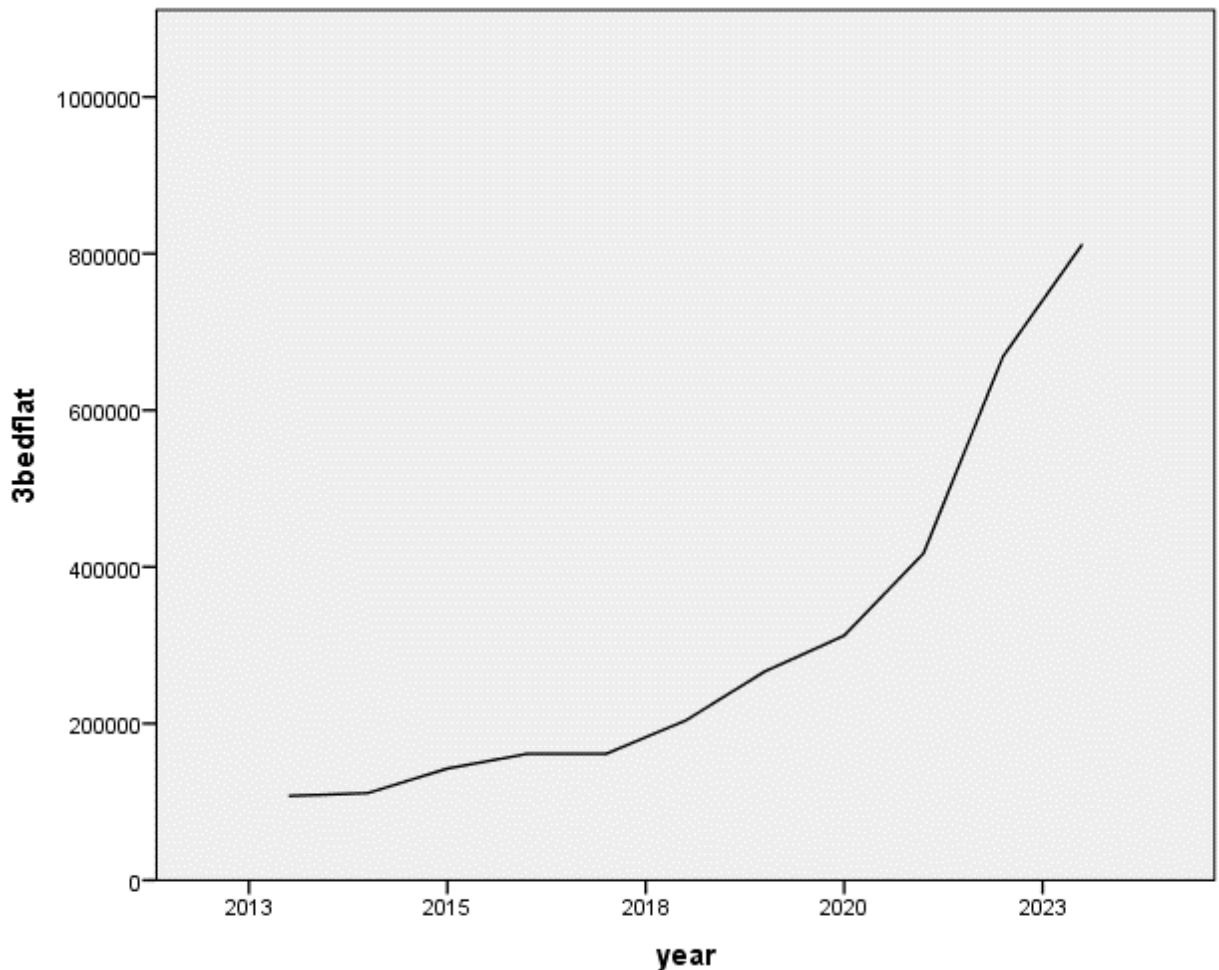


Figure 4.1 - 4.4 shows the trend in the rental value of 3 Bedroom flat rental values trend in the study area

Source: Field Survey Results, 2024

Figure 4.1 shows the trend in the rental values of 3-bedroom flats over 11 years, the figure shows that the renting price for 3-bedroom flats rises across the years (2013 – 2023). The upward trajectory of rental values for 3-bedroom flats indicates a consistent and sustained increase over the studied period. This could suggest a growing demand for residential properties in the selected areas, potentially driven by factors such as population growth, urbanization, or economic development. The observed trend of rising rental prices may signify a stable and buoyant property market in the study area. Investors and property

owners could find this information encouraging, as it implies a reliable and potentially lucrative real estate environment. For investors or individuals considering real estate ventures, the trend in increasing rental values may present an opportunity for profitable investments. It suggests that property values are appreciating, and investing in the identified areas could yield favorable returns over time. On the flip side, the consistent rise in rental values may raise concerns about housing affordability for residents in the selected areas. If the trend continues, it could lead to challenges for individuals or families seeking affordable housing options, potentially contributing to housing inequality

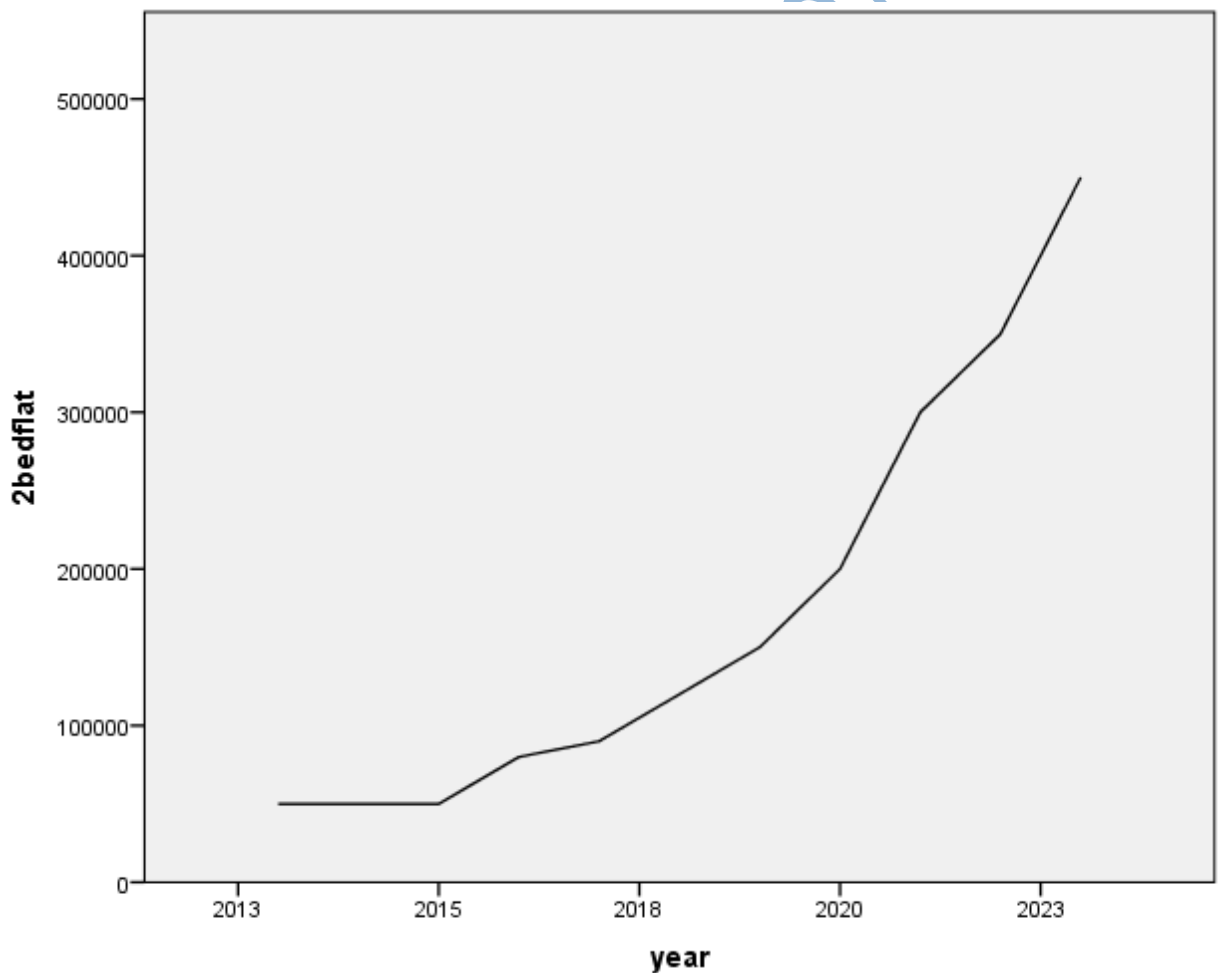


Figure 4.2: 2-Bedroom Flat Rental Values Trend

Source: Field Survey Results, 2024

Figure 4.2 shows the trend in the rental values of 2-bedroom flats over 11 years, the figure shows that the renting price for 2-bedroom flats rises across the years (2013 – 2023). The upward trajectory of rental values for 2-bedroom flats indicates a consistent and sustained increase over the studied period. This could suggest a growing demand for residential properties in the selected areas, potentially driven by factors such as population growth, urbanization, or economic development. The observed trend of rising rental prices may signify a stable and buoyant property market in the study area. Investors and property owners could find this information encouraging, as it implies a reliable and potentially lucrative real estate environment. For investors or individuals considering real estate ventures, the trend in increasing rental values may present an opportunity for profitable investments. It suggests that property values are appreciating, and investing in the identified areas could yield favorable returns over time. On the flip side, the consistent rise in rental values may raise concerns about housing affordability for residents in the selected areas. If the trend continues, it could lead to challenges for individuals or families seeking affordable housing options, potentially contributing to housing inequality.

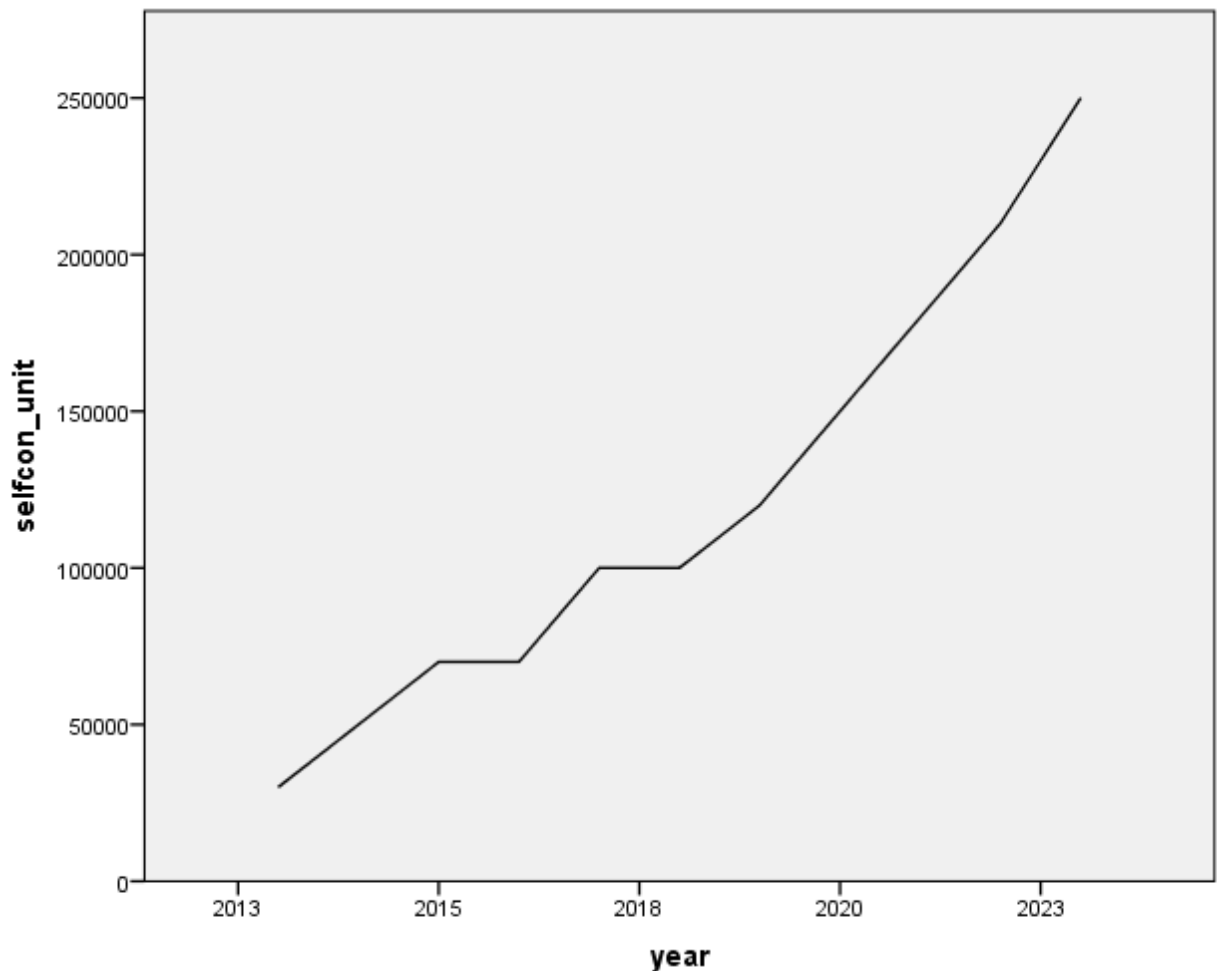


Figure 4.3: Self-contain Rental Values Trend

Source: Field Survey Results, 2024

Figure 4.3 shows the trend in the rental values of self-contain over 11 years, the figure shows that the renting price for self-contain flats rises across the years (2013 – 2023). The upward trajectory of rental values for the self-contain flats indicates a consistent and sustained increase over the studied period. This could suggest a growing demand for residential properties in the selected areas, potentially driven by factors such as population growth, urbanization, or economic development. The observed trend of rising rental prices may signify a stable and buoyant property market in the study area. Investors and property owners could find this information encouraging, as it implies a reliable and potentially

lucrative real estate environment. For investors or individuals considering real estate ventures, the trend in increasing rental values may present an opportunity for profitable investments. It suggests that property values are appreciating, and investing in the identified areas could yield favorable returns over time. On the flip side, the consistent rise in rental values may raise concerns about housing affordability for residents in the selected areas. If the trend continues, it could lead to challenges for individuals or families seeking affordable housing options, potentially contributing to housing inequality.

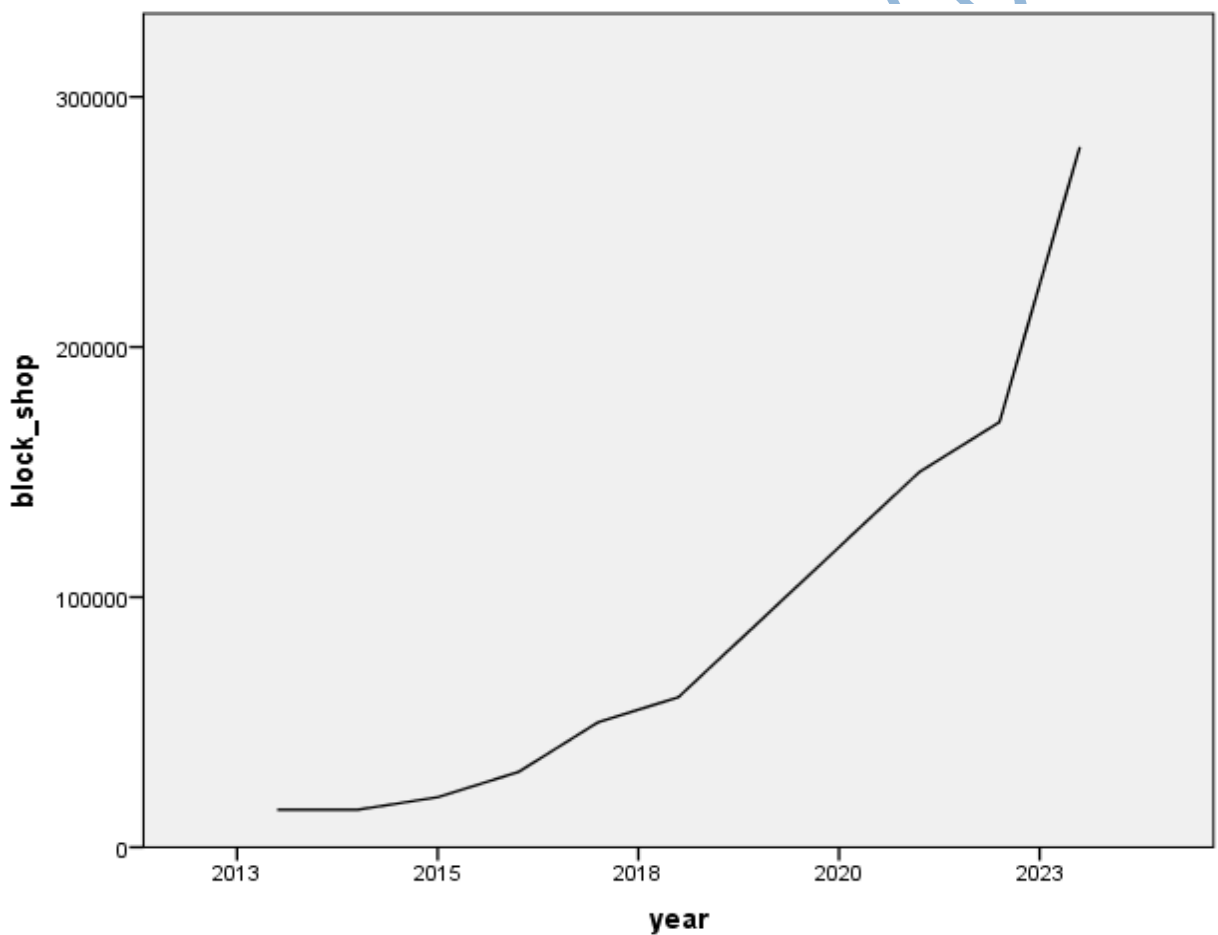


Figure 4.4: Block Shop Rental Values Trend

Source: Field Survey Results, 2024

Figure 4.4 shows the trend in the rental values of block shops over 11 years, the figure shows that the renting price for block shops rises across the years (2013 – 2023). The upward

trajectory of rental values for block shops indicates a consistent and sustained increase over the studied period. This could suggest a growing demand for residential properties in the selected areas, potentially driven by factors such as population growth, urbanization, or economic development. The observed trend of rising rental prices may signify a stable and buoyant property market in the study area. Investors and property owners could find this information encouraging, as it implies a reliable and potentially lucrative real estate environment. For investors or individuals considering real estate ventures, the trend in increasing rental values may present an opportunity for profitable investments. It suggests that property values are appreciating, and investing in the identified areas could yield favorable returns over time. On the flip side, the consistent rise in rental values may raise concerns about housing affordability for residents in the selected areas. If the trend continues, it could lead to challenges for individuals or families seeking affordable housing options, potentially contributing to housing inequality.

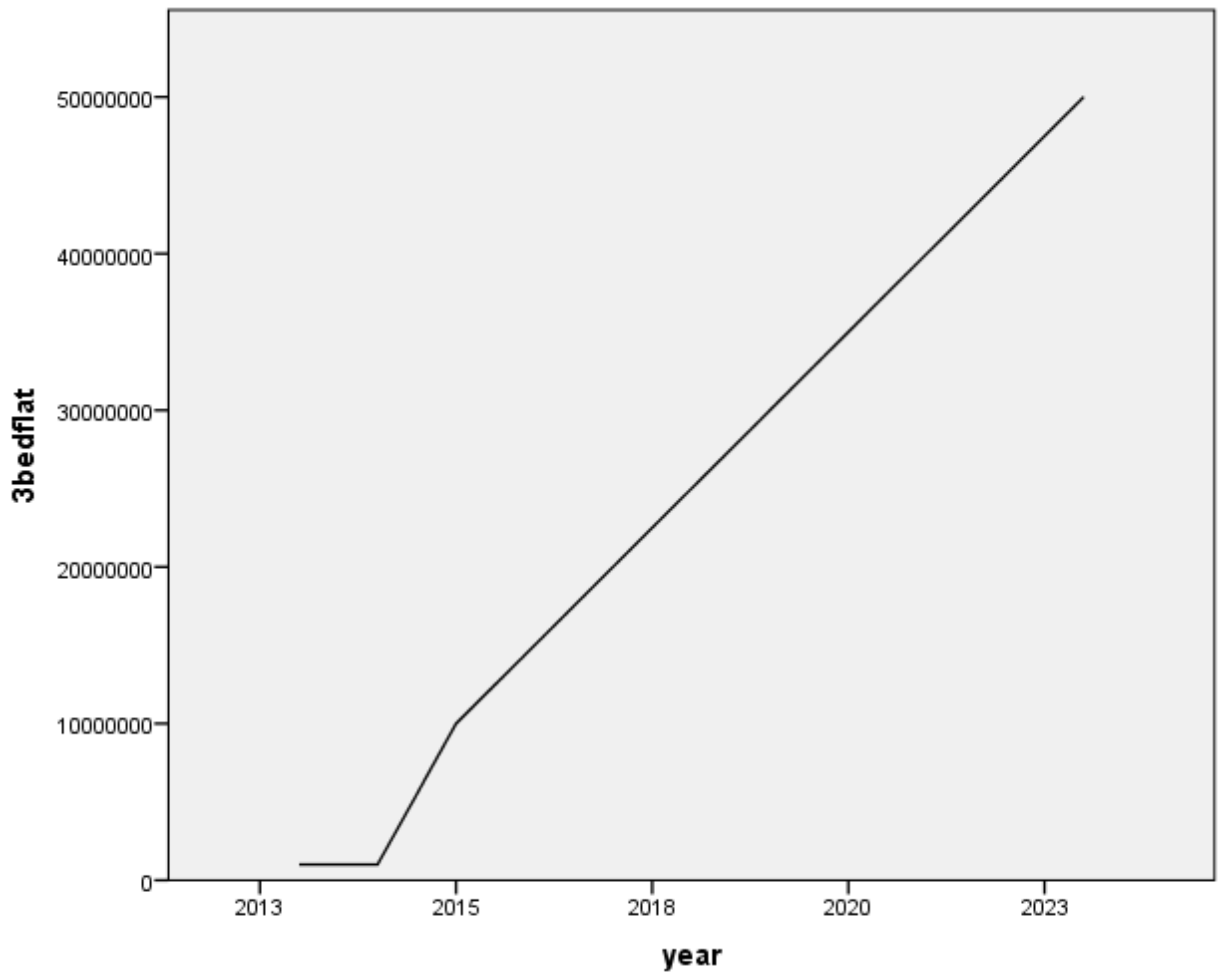


Figure 4.5 - 4.8 Shows the Trend in The Market Value Of 3-Bedroom Flat Trend in The Study Area

Source: Field Survey Results, 2024

Figure 4.5 shows the trend in the market values of 3-bedroom flats over 11 years, the figure shows that the market price for 3-bedroom flats increases rapidly across the years (2013 – 2023). This information can be valuable for various purposes, such as real estate analysis, investment decisions, or understanding the overall economic trends in the housing market. The upward trend in market values suggests a growing demand or other factors contributing to the appreciation of 3-bedroom flat prices. Investors might see this trend as an opportunity for profitable real estate investments, expecting the value of 3-bedroom flats to continue

increasing. The rising market values may pose challenges for individuals or families looking to purchase a 3-bedroom flat, potentially impacting housing affordability. A consistent increase in property values can be indicative of overall economic growth in the region. It may suggest increased demand, development, and prosperity. The demand for 3-bedroom flats may lead to increased construction and development activities in response to the rising market values, potentially influencing the local real estate landscape. Higher property values may also impact the rental market, affecting rental rates and tenancy dynamics for 3-bedroom flats.

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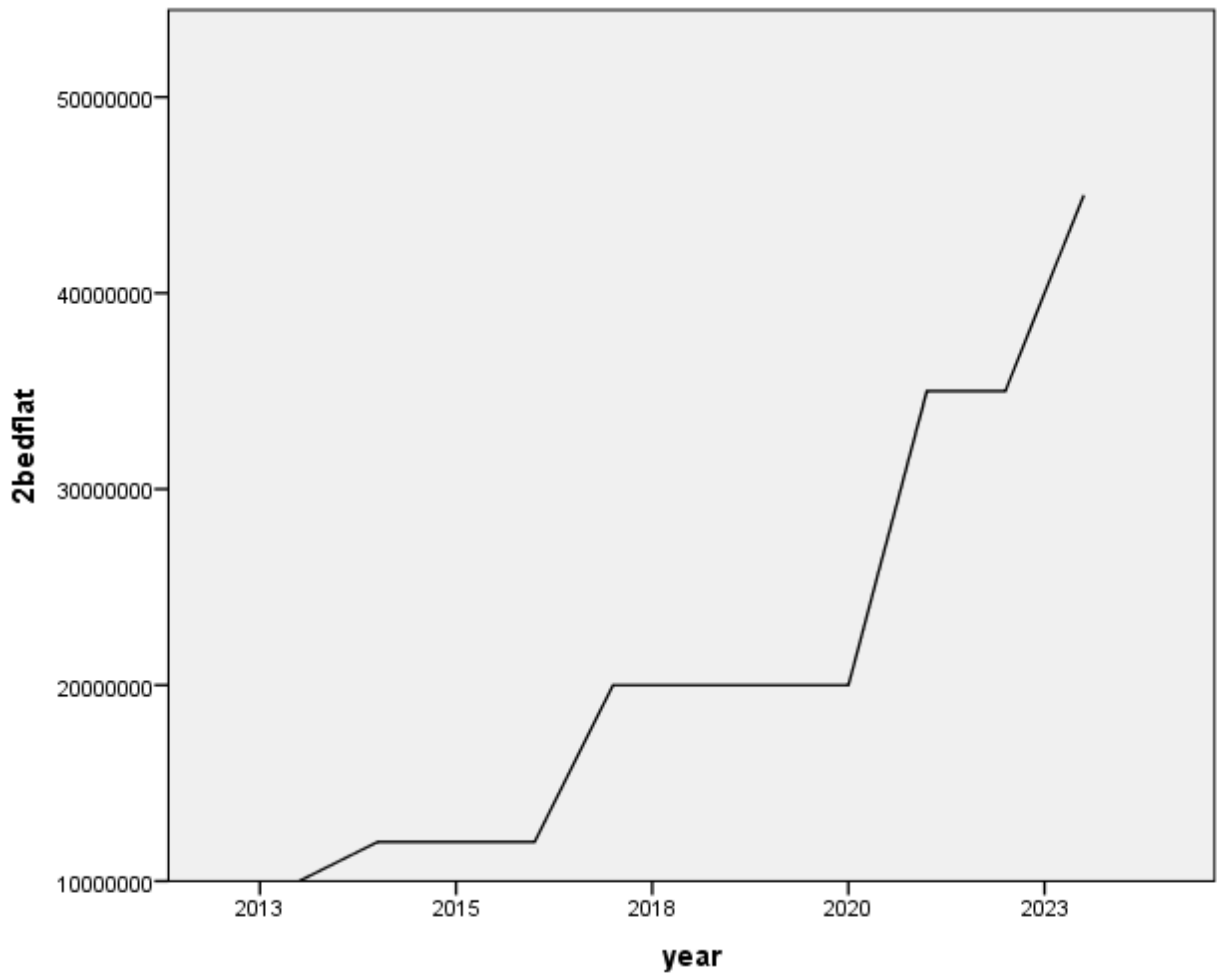


Figure 4.6: 2-Bedroom Flat Market Values Trend

Source: Field Survey Results, 2024

Figure 4.6 shows the trend in the market values of 2-bedroom flats over 11 years, the figure shows that the market price for 2-bedroom flats increases rapidly across the years (2013 – 2023). This information can be valuable for various purposes, such as real estate analysis, investment decisions, or understanding the overall economic trends in the housing market. The upward trend in market values suggests a growing demand or other factors contributing to the appreciation of 2-bedroom flat prices. Investors might see this trend as an opportunity for profitable real estate investments, expecting the value of 2-bedroom flats to continue increasing. The rising market values may pose challenges for individuals or families looking

to purchase a 2-bedroom flat, potentially impacting housing affordability. A consistent increase in property values can be indicative of overall economic growth in the region. It may suggest increased demand, development, and prosperity. The demand for 3-bedroom flats may lead to increased construction and development activities in response to the rising market values, potentially influencing the local real estate landscape. Higher property values may also impact the rental market, affecting rental rates and tenancy dynamics for 2-bedroom flats.

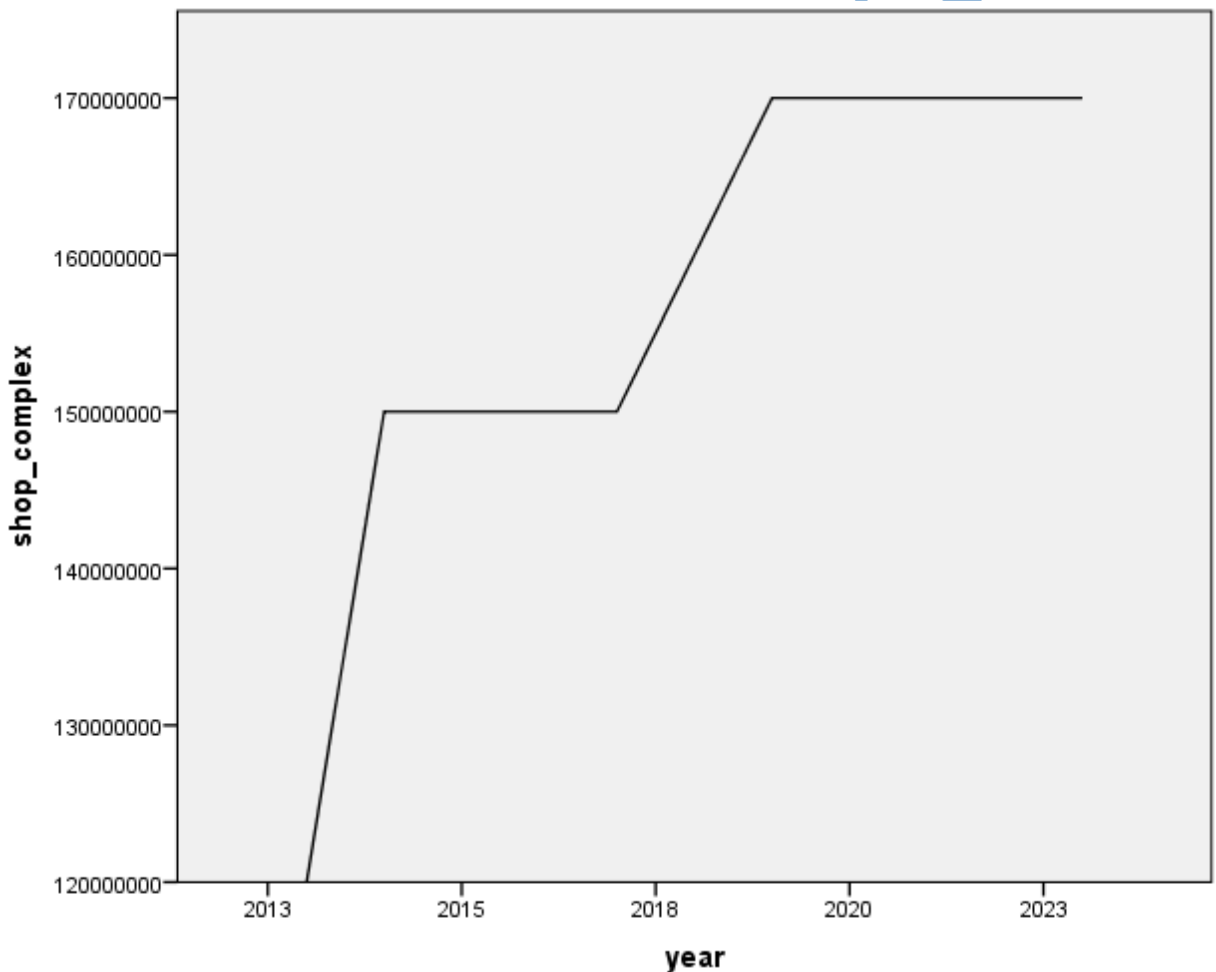


Figure 4.7: Shopping Complex Market Values Trend

Source: Field Survey Results, 2024

Figure 4.7 shows the trend in the market values of shopping complexes over 11 years, the figure shows that the market price for shopping complexes increases rapidly across the years (2013 – 2023). This information can be valuable for various purposes, such as real estate analysis, investment decisions, or understanding the overall economic trends in the housing market. The upward trend in market values suggests a growing demand or other factors contributing to the appreciation of shopping complex prices. Investors might see this trend as an opportunity for profitable real estate investments, expecting the value of the shopping complex to continue increasing. The rising market values may pose challenges for individuals or families looking to purchase a shopping complex, potentially impacting housing affordability. A consistent increase in property values can be indicative of overall economic growth in the region. It may suggest increased demand, development, and prosperity. The shopping complex may lead to increased construction and development activities in response to the rising market values, potentially influencing the local real estate landscape. Higher property values may also impact the rental market, affecting rental rates and tenancy dynamics for shopping complexes.

Variables	EE (5)	VE (4)	ME (3)	SE (2)	NE (1)	Mean	Rank
Loss of property due to road expansion	73(29.2%)	54 (21.6%)	105 (42%)	18 (7.2%)	-	3.73	1
Increased safety costs (traffic handling requirements and increased no of accidents)	11 (4.4%)	62 (24.8%)	131 (52.4%)	28(11.2%)	18(7.2%)	3.08	14
Increased air pollution	11 (4.4)	32 (12.8%)	170 (68%)	20(8%)	17(6.8%)	3.00	15
Increase in noise Pollution	11 (4.4%)	74 (29.6%)	124 (49.6%)	41(16.4%)	-	3.22	13
Increase in business operation	71 (28.4%)	18 (7.2%)	148 (59.2%)	13(5.2%)	-	3.59	5
Increase in crime rate e.g. robbery and burglary	11(4.4%)	14(5.6%)	123(49.2%)	102(40.8%)	-	2.74	16
Increase in budget for investment	71(28.4%)	-	120(48%)	59(23.6%)	-	3.33	12
Increase in rental value & increase in market value	71(28.4%)	25 (10%)	141(56.4%)	13(5.2%)	-	3.62	4
It reduces congestion	71 (28.4%)		126(50.4%)	53(21.2%)	-	3.36	11
It encourages property investment	71(28.4%)	-	166(66.4%)	13(5.2%)	-	3.52	10
It makes accessibility easy It helps in linking other roads	71 (28.4%)	11 (4.4%)	148 (59.2%)	20 (8%)	-	3.53	9
Gain in time due to little or no traffic diversions	71 (28.4%)	25 (10%)	132 (52.8%)	22 (8.8%)	-	3.68	2
Freedom of person to drive faster through rehabilitated	71 (28.4%)	25 (10%)	132 (52.8%)	22 (8.8%)	-	3.58	6

roads which are wider

Increase in vehicular speeds due to non-existence of port holes and bumps	71 (28.4%)	36 (14.4%)	108 (43.2%)	35 (14%)		3.57	7
It encourages economic growth	71 (28.4%)	18 (7.2%)	139 (55.6%)	22 (8.8%)		3.55	8
It encourages foreign investors	71 (28.4%)	40 (16%)	117 (46.8%)	22 (8.8%)		3.64	3
Reduced vehicle operating cost	18 (7.2%)	25 (10%)	49 (19.6%)	78 (31.2%)	80 (32%)	2.65	17

4.2.3 Evaluate the Effect of Road Construction on Property Value in the Study Areas

Table 4.4 shows the Effect of Road Construction on Property Value in the Study Areas

Table 4.4 Effect of Road Construction on Property Value in the Study Areas
Source: Field Survey Results, 2024

(Extremely Effective EE, Very Effective VE, Moderately Effective ME, Slightly Effective SE, Not at all Effective NE)

From table 4.4, 73 (29.2%) of the respondents indicated that loss of property due to road expansion is extremely effective, 54 (21.6%) of the respondents indicated that it is very effective, 105 (42%) of the respondents indicated that it is moderately effective, and, 18 (7.2%) of the respondents indicated that it is slightly effective. The majority of respondents find road expansion extremely effective or very effective with mean rank of 3.73 (ranked 1st). Road expansion may be perceived as a significant cause of property loss in the study areas. 11 (4.4%) of the respondents indicated that increased safety costs (traffic handling requirements and increased no of accidents) are extremely effective, 62 (24.8%) of the respondents indicated that it is very effective, 131 (52.4%) of the respondents indicated that

it is moderately effective, 28 (11.2%) of the respondents indicated that it is slightly effective, 18 (7.2%) of the respondents indicated that it is not at all effective in the selected study areas. Respondents mostly rated this as moderately effective (ranked 14), with a mean of 3.08. There is a perception that road construction increases safety costs, possibly due to increased traffic and accidents.

11 (4.4%) of the respondents indicated that increased air pollution is extremely effective in the study areas, 32 (12.8%) of the respondents indicated that it is very effective, 170, (68%) of the respondents indicated that it is moderately effective, 20 (8%) of the respondents indicated that it is slightly effective, and 17 (6.8%) of the respondents indicated that it is not at all effective. Respondents rated this moderately effective (ranked 15), with a mean of 15. Road construction is associated with an increase in air pollution, which may be a concern for the residents. 11 (4.4%) of the respondents indicated that increase in noise pollution is extremely effective, 74 (29.6%) of the respondents indicated that it is very effective, 124 (49.6%) of the respondents indicated that it is moderately effective, and 41(16.4%) is slightly effective. Respondents find an increase in noise pollution moderately effective (ranked 13), with a mean of 3.22. Road construction is perceived as contributing to higher noise levels in the study areas.

71 (28.4%) of the respondents indicated that increase in business operation on property value in selected peri-urban areas is extremely effective, 18 (7.2%) of the respondents indicated that it is very effective, 148 (59.2%) of the respondents indicated that it is moderately effective, and 13 (5.2%) of the respondents indicated that it is slightly effective. The mean value of 3.59 (ranked 5). Most respondents consider road construction as effective in increasing business operation. 11 (4.4%) of the respondents indicated that increased in crime rate e.g., robbery and burglary, is extremely effective, 14 (5.6%) of the respondents indicated that it is very effective, 123 (49.2%) of the respondents indicated that it is

moderately effective, and 102 (40.8%) of the respondents indicated that it is slightly effective, with a mean value of 2.74 (ranked 16). Some respondents associate road construction with an increase in crime rates.

71 (28.4%) of the respondents rated increase in budget for investment as extremely effective, 120 (48%) of the respondents rated it as very effective, and 59 (23.6%) of the respondents rated it as moderately effective, with a mean value of 3.33 (ranked 12).

Also, 71 (28.4%) of the respondents rated increased in rental value & increase in market value as extremely effective, 25 (10%) of the respondents rated it as very effective, 141 (56.4%) of the respondents rated it as moderately effective, and 13 (5.2%) of the respondents rated it as slightly effective with a mean value of 3.62 (ranked 4). 71 (28.4%) of the respondents indicated that road construction on property value reduces congestion in selected peri-urban areas is extremely effective, 126 (50.4%) of the respondents indicated that it is moderately effective, 53 (21.2%) of the respondents indicated that it is slightly effective, with a mean value of 3.36 (ranked 11). Probably the respondents perceived that road construction is effective in reducing congestion. Additionally, 71 (28.4%) of the respondents indicated that road construction on property value encourages property investment in selected peri-urban areas is extremely effective, 166 (66.4%) of the respondents indicated that it is moderately effective, 13 (5.2%) of the respondents indicated that it is slightly effective, with a mean value of 3.52 (ranked 10). Probably the respondents perceived that road construction encourages property investment.

It can also be deduced from the table that; 71 (28.4%) of the respondents indicated that road construction on property value makes accessibility easy and helps in linking other roads in selected peri-urban areas is extremely effective, 11 (4.4%) of the respondents indicated that it is very effective, 148 (59.2%) of the respondents indicated that it is moderately effective, 20 (8%) of the respondents indicated that it is slightly effective, with a mean value of 3.53

(ranked 9). Probably the respondents perceived that road construction as a means to enhanced accessibility and road connectivity. 71 (28.4%) of the respondents indicated that road construction on property value makes gain in time due to little or no traffic diversions in selected peri-urban areas is extremely effective, 25 (10%) of the respondents indicated that it is very effective, 132 (52.8%) of the respondents indicated that it is moderately effective, 22 (8.8%) of the respondents indicated that it is slightly effective, with a mean value of 3.68 (ranked 2). Road construction is associated with time savings due to reduced traffic diversions.

Findings also revealed that 71 (28.4%) of the respondents indicated that road construction on property value makes freedom of person to drive faster through rehabilitated roads which are wider in selected peri-urban areas is extremely effective, 25 (10%) of the respondents indicated that it is very effective, 132 (52.8%) of the respondents indicated that it is moderately effective, 22 (8.8%) of the respondents indicated that it is slightly effective, with a mean value of 3.58 (ranked 6). Road construction is associated with the freedom to drive faster on wider roads. 71 (28.4%) of the respondents indicated that road construction on property value makes increase in vehicular speeds due to non-existence of potholes and bumps which are wider in selected peri-urban areas is extremely effective, 36 (14.4%) of the respondents indicated that it is very effective, 108 (43.2%) of the respondents indicated that it is moderately effective, 35 (14%) of the respondents indicated that it is slightly effective, with a mean value of 3.57 (ranked 7). Road construction is associated with smoother and faster vehicular movement.

Finally, 71 (28.4%) of the respondents indicated that road construction on property value encourages foreign investors in selected peri-urban areas is extremely effective, 40 (16%) of the respondents indicated that it is very effective, 117 (46.8%) of the respondents indicated that it is moderately effective, 22 (8.8%) of the respondents indicated that it is

slightly effective, with a mean value of 3.64 (ranked 3). Road construction is seen as having a moderate impact on attracting foreign investors. 18 (7.2%) of the respondents indicated that road construction on property value reduces vehicle operating cost in selected peri-urban areas is extremely effective, 25 (10%) of the respondents indicated that it is very effective, 49 (19.6%) of the respondents indicated that it is moderately effective, 78 (31.2%) of the respondents indicated that it is slightly effective, and 80 (32%) of the respondents indicated that it is not at all effective, with a mean value of 2.65 (ranked 17). Road construction is associated with potential reductions in vehicle operating costs.

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4.2.4 Investigate Factors Influencing the Effect of Road Construction on Property Value in the Study Area

Table 4.5 Mean Ranking of the Selected Peri-Urban Areas in Ibadan, Oyo State

S/N	Factors	Oluyole (Akala Road)	Local Government	Government	Ido (Ologuneru-Eruwa Road)	Local Government	Government
S/N	Factors	Mean	Ranking	Performance Level	Mean	Ranking	Performance Level
1	Economic	3.13	4	High	3.19	3	High
2	Tax	3.17	3	High	3.20	2	High
3	Inflation	3.09	5	High	3.14	4	High
4	Age of the building	1.20	9	Low	1.50	8	Low
5	Congestion	3.17	3	High	3.20	2	High
6	Legal	2.45	6	Moderate	2.62	5	Moderate
7	Culture	1.20	9	Low	1.5	8	Low
8	Political	2.45	7	Moderate	2.50	6	Moderate
9	Social factor	2.47	8	Moderate	2.44	7	Moderate
10	Demand	3.17	3	High	3.20	2	High
11	Inefficiency of contractors	1.49	11	Low	1.50	8	Low
12	Population	1.20	9	Low	1.50	8	Low
13	Supply	3.24	2	High	3.19	3	High
14	Environmental	2.00	10	Moderate	1.50	8	Low
15	Neighborhood	1.20	9	Low	1.50	8	Low
16	Location	3.26	1	High	3.25	1	High
17	Religion	1.20	9	Low	1.44	9	Low
18	Age of the building	2.00	10	Moderate	1.44	9	Low
19	Nature of road	2.00	10	Low	1.50	8	Low
20	Natural Disaster	1.50	12	Low	1.44	9	Low
21	Time of construction	3.24	2	High	3.19	3	High
Weighted Mean = 3.00				Weighted Mean = 3.01			

Source: Researcher's Field Survey, 2024

Keys: 1.00 – 2.00 (Low), 2.01 – 3.00 (Moderate) 3.01 – 4.00 (High)
4.01 – 5.00 (Very High)

The table presents the mean rankings of various factors influencing the effect of road construction on property value in the selected peri-urban areas in Ibadan, Oyo State, specifically in Oluyole Local Government (Akala Road) and Ido Local Government (Ologuneru-Eruwa Road). The factors are categorized into different aspects such as economic, tax, inflation, congestion, legal, political, social factors, demand, supply, location, and government policy. The mean rankings are accompanied by performance levels, with corresponding weighted means for each local government.

In terms of economic factors, both areas exhibit high performance levels, with Oluyole Local Government having a mean ranking of 3.13 and Ido Local Government with a slightly higher mean ranking of 3.19. In terms of Tax; both areas again show high performance levels, with Ido Local Government having the highest mean ranking of 3.20. Both areas demonstrate high performance of inflation level with Ido Local Government having a slightly higher mean ranking (3.14). High performance of congestion is observed in both local governments, with Ido Local Government having a slightly higher mean ranking of 3.20. Both areas show moderate performance levels in legal and political factors. Both local governments exhibit moderate performance in social factors.

In terms of demand and supply; high performance is evident in both areas, with Ido Local Government having slightly higher mean rankings. In terms of location; both areas perform at a high level, with Ido Local Government having a slightly lower mean ranking of 3.25. High performance of government policy is observed in both local governments, with Ido Local Government having a slightly lower mean ranking.

In summary, the selected peri-urban areas in Ibadan generally demonstrate high performance across various factors, with some slight variations in mean rankings between Oluyole Local Government and Ido Local Government. The weighted means for both areas are close, indicating a relatively balanced overall performance. The keys at the bottom provide a guide to interpreting the weighted means in terms of performance levels.

Investigate Factors Influencing the Effect of Road Construction on Property Value in the Study Area

Table 4.6 KMO and Bartlett’s Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.857
Bartlett's Test of Sphericity	Approx. Chi-Square	4459.409
	Df	28
	Sig.	.000

Source: Researcher’s Field Survey, 2024

The fourth objective was subjected to principal component analysis (PCA) with the use of SPSS version 26 software. Prior to performing PCA the suitability of data for factor analysis was evaluated. The inspection of the correlation matrix showed the presence of a coefficient of 0.8 and above, which is appropriate for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is a degree of whether the distribution of values is suitable for proceeding with factor analysis. A measurement of < 0.5 is not acceptable, > 0.5 is miserable, > 0.6 is mediocre, >0.7 is fair, >0.8 is commendable and 0.9 is considered excellent.

Table 4.5 presents the results of the KMO with the data returning a value sampling adequacy of 0.857. According to study, this was considered suitable to conduct a factor analysis as any value above 0.6 (the cut-off point) was considered to be acceptable. The multivariate normality of the set of distribution is indicated by the p-value of Bartlett’s test of sphericity

(represented by 'Sig'). A value less than 0.50 indicated that the data did not produce an identity matrix and was therefore considered as acceptable for factor analysis¹. This set of data returned a significance value of 0.000, indicating that the data was adequate for factor analysis.

The KMO measure and Bartlett's Test collectively suggest that the data is suitable for factor analysis, allowing for the exploration of underlying factors or components in the dataset. While the KMO value of 0.857 is considered commendable, it is above the acceptable cutoff, indicating that there is enough shared variance among variables to proceed with factor analysis. The subsequent PCA can be used to identify patterns and relationships among variables, helping to uncover latent factors that contribute to the observed variance in the dataset. The statistical significance of Bartlett's Test reinforces the validity of the results, suggesting that the variables are not unrelated and form a pattern that is conducive to factor analysis.

Table 4.7 Communalities

Factors	Communalities	
	Initial	Extraction
Economics	1.000	.944
Tax	1.000	.964
Inflation	1.000	.969
Legal	1.000	.623
Political	1.000	.600
Social factor	1.000	.636
Demand	1.000	.967
Supply	1.000	.930

Extraction Method: Principal Component Analysis.

Source: Researcher's Field Survey, 2024

The communalities of the factors influencing the effect of road construction on property value in the study area were established for the purpose of determining the extent to which the underlying factors accounted for the variance of the 8 variables. The results in Table 4.6 showed that Communalities measure the common variance between observed variables and the underlying factors extracted through the Principal Component Analysis (PCA). A communality close to 1 indicates that a large proportion of the variable's variance is explained by the underlying factors. The "Initial" column represents the communalities before the extraction of underlying factors. The "Extraction" column represents the communalities after the extraction of underlying factors through Principal Component Analysis. The communalities values in the "Initial" column are all initially set to 1.000, as they represent the total variance in each variable before any extraction. The values in the "Extraction" column represent the proportion of each variable's variance that is explained by the factors extracted through PCA. All the variables listed have communalities greater than 0.4 in the "Extraction" column. This indicates that the underlying factors extracted through PCA account for a substantial portion of the variance in each variable. A communality greater than 0.4 is considered acceptable,

suggesting that the variables effectively measure the underlying factors.

The high communalities indicate that the selected variables are suitable for capturing the underlying factors related to the effect of road construction on property value. The extraction process through PCA has effectively identified shared variance among the variables, supporting the validity of the factor analysis. The communalities provide insights into how much of the variance in each variable is explained by the underlying factors. Higher communalities indicate that a larger proportion of the variable's variance is accounted for by the extracted factors.

The communalities analysis demonstrates that the selected variables effectively measure the underlying factors related to effect of road construction on property value. The extraction process through PCA has successfully identified shared variance, reinforcing the validity of the factor analysis results.

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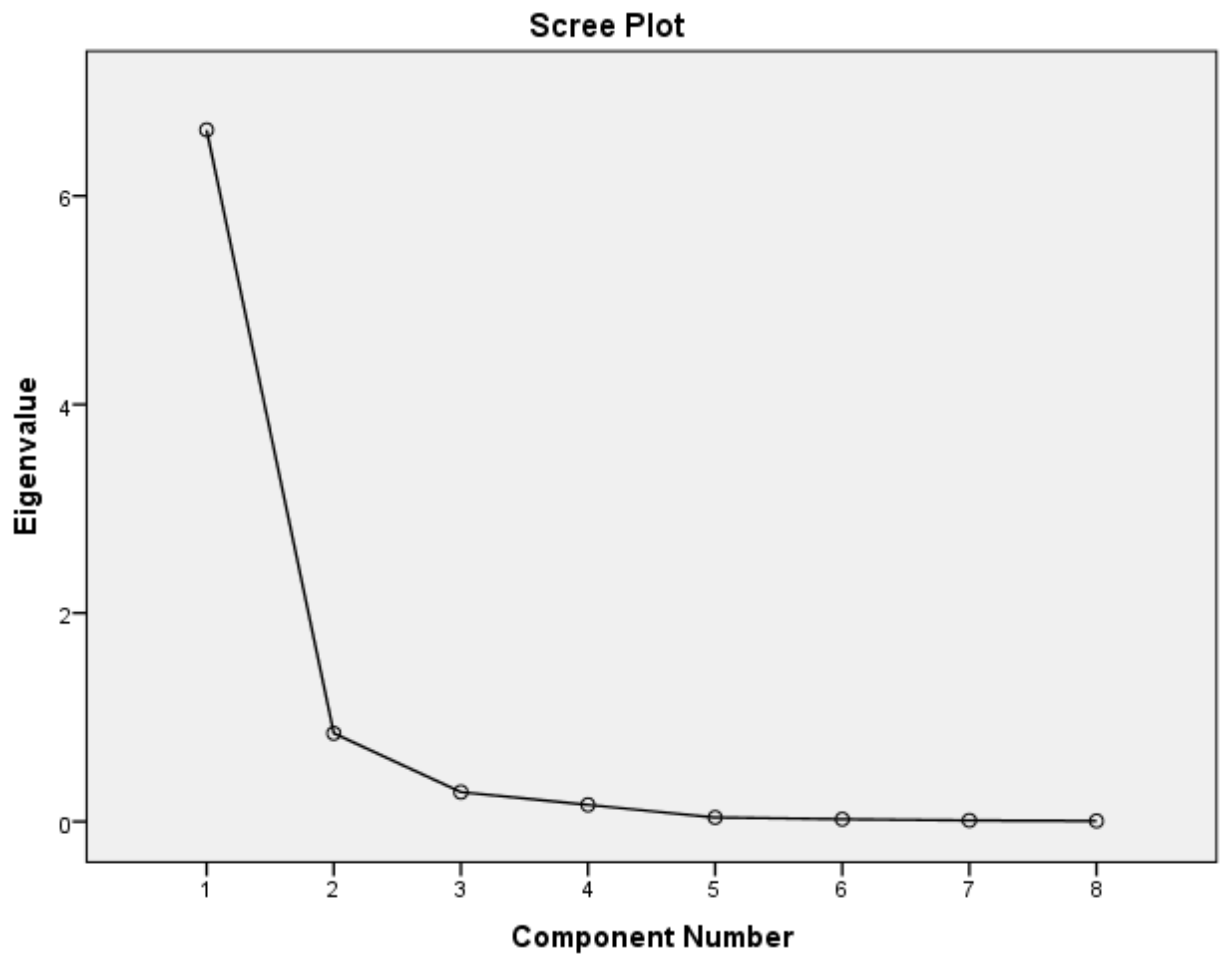


Figure 4.8 Scree Plot

Source: Field Survey Results, 2023

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Table 4.8: Total Variance Explained

Component	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% Of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.633	82.916	82.916	6.633	82.916	82.916
2	.846	10.578	93.494			
3	.283	3.533	97.027			
4	.160	2.003	99.030			
5	.039	.487	99.517			
6	.023	.282	99.798			
7	.011	.134	99.933			
8	.005	.067	100.000			

Extraction Method: Principal Component Analysis.

Source: Researcher's Field Survey, 2024

Table 4.7 shows the number of factors in the effect of road construction on property value in the study area and their respective eigenvalues. The latent root, or Kaiser's criterion, of retaining skill factors with eigenvalues greater than 1.0 was employed. Hence, one factor with eigenvalues exceeding one was retained, resulting in 6.633, which explained 82.916 of the variances. This infers that the cluster of effect of road construction on property value in the study area factors accounted for 82.916% of the total importance expected for factors influencing effect of road construction on property value in the study area. The cumulative percentage of 82.916% indicates that the factor is highly significant in explaining the variance in the effect of road construction on property value in the study area.

4.3 Discussion of Findings

In objective one, majority of respondents reported that the road is only sometimes available, indicating a level of inconsistency. This suggests potential challenges in maintenance or construction scheduling. The prevalence of drainage facilities and traffic lights, along with the reported presence of U-turn and median facilities, reflects the complexity and

development level of the roads in the selected area. However, the relatively low frequency of roadway facilities raises questions about the comprehensiveness of the road network. A significant proportion of respondents expressed dissatisfaction or only slight satisfaction with the road serving its purpose. This finding is crucial as it highlights potential shortcomings in the functionality of the roads, indicating the need for further investigation into the specific areas of discontent. The study's results emphasize the importance of aligning road construction projects with the actual needs and expectations of the local community. The notable number of respondents reporting major property impacts during road construction raises concerns about the planning and execution of infrastructure projects. Major disruptions or adverse effects on properties can lead to discontent among residents, highlighting the importance of effective communication, mitigation strategies, and compensation mechanisms during construction phases. While a substantial portion of respondents rated the present state of the road as good or very good, the significant percentages indicating fair or poor conditions suggest variations in perceptions regarding the current state of the roads. This discrepancy in perceptions may be attributed to differences in individual expectations, experiences, or the actual condition of different sections of the road. The concentration of road construction in the year 2009 suggests a significant phase of infrastructure development in the selected peri-urban area. The age of the road is a crucial factor influencing its current state, and the study indicates that roads constructed in different years may exhibit varying levels of maintenance and durability.

The findings of this study corroborated with the study of a scholar who postulates that housing is the totality of a residential neighborhood/environment or micro district including the physical structure, all necessary services, facilities, utilities, and apparatus for the total health and social well-being of the individual and family within the neighborhood¹. It is seen as the physical environment in which the family and society's basic units must develop.

Housing structures are enclosures in which people are housed for lodging, living accommodations, or even workplaces². The manifestations or indicators of environmental poverty include but are not limited to housing congestion, traffic congestion, poor drainage and sewage system, indiscriminate discharge of liquid and solid waste, environmental pollution, inadequate social facilities, and over-utilization of existing infrastructural facilities³.

In objective two, Figures 4.1 to 4.4 depict a consistent and sustained increase in the rental values of 3-bedroom flats, 2-bedroom flats, self-contained units, and block shops from 2013 to 2023. This upward trajectory suggests a growing demand for residential and commercial properties in the region. The stable and buoyant property market indicated by the rising rental prices may attract investors and property owners, signaling a potentially lucrative real estate environment.

However, the study also raises concerns about housing affordability. The continuous rise in rental values may pose challenges for residents seeking affordable housing options, contributing to potential housing inequality in the selected areas.

Figures 4.5 to 4.7 show a rapid increase in the market values of 3-bedroom flats, 2-bedroom flats, and shopping complexes over the same 11-year period. This suggests not only a demand for rental properties but also an appreciation in property values for those looking to buy. Investors may find this trend encouraging, expecting continued appreciation in property values and potential profitability. Similar to the rental trends, the escalating market values could present challenges for individuals or families aiming to purchase properties, impacting housing affordability and potentially shaping the local real estate landscape. The result of these findings corroborated with some past studies; according to a scholar, the need to analyze the movement of rents is premised on the fact that it would aid entrepreneurs in

their planning and cash flow projections; assist developers in investment decision making; useful to real estate professionals in appraisals and evaluation of proposed development projects; as well as provide information for researchers⁴. Several studies have been carried out on rental movements. In the United States, a scholar using asking rents and average rental growth rate, evaluated rental growth rates in the physical real estate cycle and found that national average growth rates at each point in the cycle were statistically different⁵.

A scholar studied residential rent between 1990 and 1997 in Stockholm from an investor's point of view. With the use of rent equations, estimations were conducted to analyze whether or not rent levels varied between locations holding other rent-affecting variables (age and improvement) constant. It was discovered it varies. The study also entailed a comparison between annual increases in the effective rent charged for privately owned residential properties and the official increases set via official negotiation for municipality-owned residential housing to see whether excessive rent increases (indicating rent drift) could be found. Evidence was found to support the existence of such rent drift. This rent drift has also been discovered in commercial real estate rents in similar research conducted in Hong Kong⁶. However, in later research in Hong Kong, another scholar discovered that after a peak reached in 1997 there was a drop of 66.9% and 48.7% respectively in the House Price Index and Rental Index respectively. The situation in Scotland is quite different as no regular trend in office rents was observed. However, there were fluctuations, particularly between 1987 and 2002⁷.

Some scholars examined the cyclical behavior in commercial property values in the UK between 1956 and 1996 using a structural times series (unobserved components) approach. The study incorporated the influence of the transition to short rent reviews during the late 1960s and the short and long-term impacts of the 1974 and 1990 property crashes in the analysis, via dummy variables. It was found that once these variables were taken into

account a fairly regular cyclical pattern can be discerned within a period of about 7 to 8 years. Furthermore, the 1974 and 1990 property crashes were shown to have had a major long-term impact on property value growth (presumably via their influence on investors' expectations)⁸.

A scholar embarked on research that was designed to examine the assertion that the historic designation of properties, under the heritage legislation in Canada's largest province, hurts the values of those properties. The actual selling price of subject properties was used to establish their value history trends, which were then compared to ambient market trends within the same communities. Almost 3,000 properties in 24 communities were investigated, in what is believed to be the largest study ever undertaken in North America. It was found that heritage designation could not be shown to have a negative impact. There appeared to be a distinct and generally robust market in designated heritage properties with over 74% of such properties performing well. These heritage properties tend to be resistant to downturns in the general market as ample numbers of willing buyers were prepared to pay premiums for this type of property⁹.

A scholar argued that developments in the commercial property market have greater consequences for the stability of the Irish financial system. This has been highlighted by Woods *op. cit.* maybe especially true in light of international experience regarding recent financial crises in developed economies, the results of stress-testing exercises, and the current historically high share of commercial property-related lending to private non-financial corporates. Observation made reveals that over the period 2003 to 2006, there was a large increase in capital values in the Irish commercial property market without a correspondingly large increase in rents. Consequently, income yields on all types of commercial property reached very low levels in 2006. Of additional concern, from a

financial stability perspective have been the rapid rates of increase in lending for commercial property-related purposes during the same period¹⁰.

In objective three; respondents generally perceive road construction as extremely effective or very effective in facilitating business operations, reducing congestion, encouraging property investment, enhancing accessibility, and linking other roads. The majority of respondents believe that road construction leads to a gain in time due to reduced traffic diversions, encourages economic growth, and attracts foreign investors. Loss of property due to road expansion is identified as a significant concern, with a substantial percentage of respondents ranking it as extremely effective. Increased safety costs, air pollution, and noise pollution are perceived as moderately effective consequences of road construction, suggesting potential negative impacts on the environment and residents' well-being. A notable percentage of respondents associate road construction with an increase in crime rates, indicating concerns about safety and security.

Respondents show mixed perceptions regarding the impact of road construction on property values. While some believe it leads to an increase in rental and market values, others may not share the same level of optimism. The reduction in vehicle operating costs is viewed with varying degrees of effectiveness, indicating a diversity of opinions among the respondents.

Certainly, findings of earlier studies reveal enthralling and constant acquaintances among them¹¹. Road construction project route is part of distinct development patterns or road networks and is mostly described by regular street patterns as an indispensable factor of human existence, development, and civilization. Road construction project networks are observed in terms of their components of accessibility, connectivity, traffic density, level of services, compaction, and density of particular roads. Level of service is a measure by which

the quality of service on road construction devices or infrastructure is determined, and it is a holistic approach considering several factors regarded as measures of traffic density and congestion rather than the overall speed of the journey¹². Access to major roads provides relative advantage consequences upon which commercial users locate to enjoy the advantages. Modern business industries, tracks, and general activities depend on road transport and road transport infrastructure, with the movement of goods and services from place to place becoming vital and inseparable aspects of global and urban economic survival. The development of various road construction modes has become pivotal to physical and economic development. Such modes include human portrages, railways, ropeways and cableways, pipelines, inland waterways, sea, air, and road¹³. Several factors affect property values which include intrinsic and extrinsic factors. The extrinsic factors include good road network and transport accessibility, increase in demand for let table space, location, condition of adjoining investment properties, measure to park and leisure, local and national economic conditions, or intrinsic factors are due to natural characteristics of the property which affect the city where the property is located. Intrinsic factor arises from within the nature of the property itself and relates to the physical attributes, including the size of the room, state of repair, decoration, and facilities. Other attributes that increase or decrease the amount that users are willing and able to pay in an open market transaction include the physical characteristics of the structure, change in taste and demand, the effect of adjacent activities, economic activities, inflation, and change in legislation. Transportation includes physical characteristics of the structure, changes in taste and demand, the effect of adjacent activities, economic activities, inflation, and changes in legislation¹⁴.

The increase in demand for commercial property investment or business investment properties is affected by changes in population, planning and development schemes,

legislation, and availability of good road networks making the values of these properties rise or decrease¹⁵. The emphasis on transportation's role in the economy is more on wealth creation rather than wealth consumption. Its impact on the economy is made possible because it provides accessibility which in turn induces mobility. In the researcher's view, the government needs to increase its commitment to the transportation sector as good road is indeed the lifeblood of every economy. The Negative effects may also result from an increase in traffic noise pollution, which has also been found to be a cause of reduction in the value of properties that are located along a newly developed high way.

In objective four; factor analysis was conducted to identify factors influencing facility management performance. The Kaiser-Meyer-Olkin measure of sampling adequacy suggests that the data is suitable for factor analysis. A rotated component matrix was generated, showing the relationships between factors and variables. Several factors were identified that contribute to facility management performance. Total variance explained table provides information about how much variance each component explains, the component score covariance matrix shows the relationships between the components identified in the factor analysis. The significance of a factor loading gives an indication, albeit small, of the substantive importance of a given key driver to a given factor. Generally, the reliability and suitability of the dataset for factor analysis depend on several conditions, including sample size, number of variables, and sample to variable ratio¹⁷. A scholar reported that an obvious component structure was usually revealed when the factor loading of a variable was significant (loading > 0.5) on one component only. This was supported by a researcher who adopted a factor loading ≥ 0.5 for internal included in each component (factor)¹⁸. Therefore, the factor loading in this study could be considered significant.

The objective of investigating factors influencing the effect of road construction on property value involved a robust statistical analysis, primarily employing Principal Component

Analysis (PCA). The findings are discussed based on the KMO and Bartlett's Test, communalities analysis, scree plot, and the total variance explained. The KMO value of 0.857 indicates a commendable level of sampling adequacy, surpassing the acceptable cutoff of 0.6. This suggests that the data is suitable for factor analysis. Bartlett's Test of Sphericity is statistically significant (Sig. = 0.000), reinforcing the suitability of the data for factor analysis. The variables are not unrelated, supporting the exploration of underlying factors. Communalities represent the proportion of each variable's variance explained by the underlying factors. All variables have communalities greater than 0.4 in the "Extraction" column, indicating that the extracted factors effectively measure the variables related to the effect of road construction on property value.

The scree plot visually represents the eigenvalues obtained from PCA. It helps in determining the number of factors to retain. In this case, the plot shows a significant drop after the first factor, reinforcing the decision to retain one major factor. The total variance explained by the retained factor is 82.916%, indicating a substantial influence on the effect of road construction on property value in the study area. Eigenvalues exceeding 1.0 for the first factor (6.633) support the decision to retain it, as per Kaiser's criterion.

Numerous factors exert influence on property values in Nigeria. These encompass:

1. **Population Dynamics:** Fluctuations and shifts in population can significantly impact property values, as they affect demand for housing and commercial spaces.
2. **Trends and Preferences:** Changes in fashion, lifestyle preferences, and cultural tastes can alter the desirability and value of properties.
3. **Institutional Influences:** Cultural norms, religious beliefs, and legislative frameworks play pivotal roles in shaping property values, often reflecting societal attitudes towards certain types of properties or locations.

4. **Economic Conditions:** Economic stability, inflation rates, employment opportunities, and income levels directly affect property values, with prosperous economic conditions generally driving up demand and prices.
5. **Geographical Location:** The location of a property within Nigeria, including factors such as proximity to urban centers, amenities, scenic views, and natural resources, significantly influences its value.
6. **Complementary Uses:** The presence of complementary services and amenities, such as schools, hospitals, shopping centers, and recreational facilities, can enhance property values by increasing convenience and attractiveness.
7. **Transportation Accessibility:** Accessibility to transportation networks, including roads, railways, airports, and public transit systems, affects property values by influencing connectivity and ease of mobility.
8. **Planning and Regulatory Controls:** Zoning regulations, land use policies, and urban planning initiatives can both directly and indirectly impact property values by shaping the development landscape and controlling supply.

By understanding and navigating these multifaceted factors, stakeholders in the Nigerian real estate market can make informed decisions regarding property investments and development projects. The scholar elaborated that an extensive road network enhances accessibility, whereas traffic congestion can render certain areas less accessible, leading to a shift in property value towards more accessible locations.

Other factors that determine property values include accessibility relative to location-distance of land uses, change in population, change in fashion and taste, institutional factor, economic factor, location, transportation, complementary uses, road transport network, political factor, planning regulation, environmental quality, aesthetics, and growth pattern

of land use. Real estate prices in Kenya have doubled, even tripled in the past few years. Demand for housing units continues to outstrip the supply and the real estate property market is booming in Kenya especially because of the growth in mortgage financing in the country²¹. Sixty percent of the pension fund is going towards the property market and they are using it as mortgage security. Kenyan real estate property covers all property categories including single and multi-family residential homes, commercial and farming land, office space, go-dawns and storerooms, retail outlets, and shopping complexes.

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Chapter Five

Conclusion

This chapter discusses the finding made from the study, conclusion drawn and the recommendations made.

5.1 Summary of Findings

The trends in rental and market values suggest a flourishing real estate market in the chosen peri-urban area, with consistent increases across different property types indicating sustained demand and potential economic growth. However, concerns about affordability arising from these trends highlight the need for a balanced approach to ensure inclusive housing opportunities for residents. The summary of findings outlines diverse perceptions regarding the impact of road construction on property value. Positive perceptions include the belief that road construction improves accessibility, reduces congestion, and attracts foreign investors. Concerns are raised about property loss due to road expansion and potential negative consequences such as increased safety costs, air pollution, and noise pollution. The varied perceptions regarding the impact on property values and vehicle operating costs indicate a complex relationship between road construction and various influencing factors. The statistical analyses collectively indicate a singular significant factor influencing the effect of road construction on property value in the study area. Extracted through Principal Component Analysis (PCA), this factor accounts for a substantial portion of the observed variance in variables related to the research objective.

5.2 Conclusion

The findings suggest a mixed perception of the road construction in the selected peri-urban area. While a majority acknowledged the presence of the road, there were concerns about its facilities and functionality. Dissatisfaction with the road serving its purpose and

significant property impacts during construction indicate potential issues that need attention. The varying perceptions of the road's present state emphasize the need for comprehensive assessments and maintenance strategies. The study's findings also reveal a robust and dynamic real estate market in the selected peri-urban area, with rising rental and market values across various property types. While this signifies economic growth and investment potential, it also raises significant concerns about housing affordability, which may lead to increased housing inequality in the region. A careful and comprehensive approach to real estate development and policy-making is essential to balance market growth with the need for accessible and affordable housing options.

The evaluation of the effect of road construction on property value reveals a nuanced understanding among residents. While road construction is generally seen as positively influencing economic and infrastructural aspects, concerns about property loss, environmental impacts, and potential negative consequences suggest a need for comprehensive planning and mitigation strategies. The varying perceptions emphasize the importance of considering the diverse perspectives of residents in urban development projects.

In conclusion, the investigation into the factors influencing the effect of road construction on property value demonstrates the viability of employing statistical techniques like PCA. The results suggest that a single underlying factor plays a crucial role in explaining the observed variance in the selected variables. This factor encompasses economic, tax, inflation, demand, and supply factors, among others.

5.3 Recommendations

The below are recommend for this study based on the research objectives;

1. Based on the study, it is recommended that local authorities conduct regular evaluations of road infrastructure to identify and address issues related to functionality and user satisfaction. Additionally, community engagement and feedback mechanisms should be established to involve residents in decision-making processes, ensuring that their concerns are considered in future road construction projects.
2. Considering the concerns regarding housing affordability, it is recommended that local authorities and policymakers implement strategies to address potential housing inequality. This may involve the development of affordable housing initiatives, rent control measures, or incentives for property developers to include affordable housing units in their projects. Balancing market growth with inclusivity should be a priority in urban planning and development.
3. Considering the concerns raised by residents, it is recommended that local authorities and urban planners engage in transparent communication with the community during road construction projects. Providing information about potential impacts, addressing concerns about property loss, and implementing mitigation measures for environmental and safety issues can foster a more positive perception of road construction projects.
4. Given the dominance of a single factor, policymakers and urban planners should prioritize considerations related to economic conditions, tax policies, and inflation rates when planning and implementing road construction projects. Understanding the influence of these factors can lead to more effective strategies in managing and mitigating potential impacts on property values.

5. It is recommended that the property/ owners/investors should engage the service of valuers to guide them on viability of the property investment.

5.4 Contribution to Knowledge

This research contributes to the understanding of the morphological characteristics of road construction in peri-urban areas, shedding light on the challenges and perceptions of residents. The findings offer insights for urban planners, policymakers, and researchers to make informed decisions about infrastructure development, emphasizing the importance of community satisfaction and involvement in the construction process.

This research contributes to the understanding of real estate dynamics in peri-urban areas, emphasizing the dual impact of market growth – economic prosperity for investors and potential housing inequality for residents. The findings highlight the need for nuanced and inclusive policies to ensure sustainable and equitable real estate development in growing urban regions.

This research contributes to the understanding of the complex and multifaceted impact of road construction on property value in peri-urban areas. The findings highlight the need for a holistic approach that considers both positive and negative consequences, taking into account the diverse perspectives of the community. This knowledge is crucial for informing future urban development policies and practices that prioritize the well-being and satisfaction of residents.

This research contributes to knowledge by revealing that a consolidated factor, comprising economic and socio-economic variables, significantly influences the effect of road construction on property value. This knowledge can guide decision-makers in formulating

targeted policies and strategies to ensure sustainable urban development and minimize adverse effects on property values.

5.5 Suggestion for Further Studies

Based on the comprehensive study conducted on the real estate dynamics and the impact of road construction in peri-urban areas, several recommendations can be made to further explore and address the identified issues:

1. Conduct longitudinal studies to track the evolution of real estate market trends and the impact of road construction over time. This approach would provide a deeper understanding of the long-term effects and help in assessing the efficacy of implemented policies and mitigation measures.
2. Supplement quantitative analyses with qualitative research methods such as interviews, focus groups, or surveys to delve deeper into residents' perceptions and experiences regarding road construction and its effects on property values. Qualitative data can offer nuanced insights that quantitative data alone may not capture fully.
3. Extend the scope of the study by conducting comparative analyses across different peri-urban areas with varying levels of infrastructure development and real estate dynamics. This comparative approach would facilitate identifying common trends, as well as unique challenges and solutions tailored to specific contexts.

4. Evaluate existing policies aimed at addressing housing affordability and inclusivity to determine their effectiveness and identify areas for improvement. This evaluation can involve assessing the outcomes of implemented strategies and soliciting feedback from stakeholders to refine policy approaches.
5. Foster ongoing engagement with diverse stakeholders including local authorities, policymakers, urban planners, residents, and real estate developers. Collaborative decision-making processes can enhance the relevance and acceptance of interventions aimed at mitigating the adverse effects of road construction on property values and promoting inclusive urban development.

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Appendix I: Questionnaire

Lead City University, Ibadan, Oyo State. Nigeria
Faculty of Environmental Design & Management
Department of Estate Management

Dear Respondent,

I am a post-graduate student of the abovementioned department and institution under Estate management. I wish to solicit information from you in the compilation of my dissertation titled: road construction and property value in peri-urban areas in Ibadan, Oyo state. Nigeria.

The information provided will be strictly used for academic purpose and for the benefit of real estate investors in the study area.

Your responses hold a great significance in my quest of data collection. I will be grateful if you could complete this questionnaire.

Thank you.

Oluwatobi Omoyemi AYODELE

Researcher

Note: Kindly answer the entire question by ticking the appropriate boxes and fill the spaces where necessary.

Thank you for your participation

Section A:

Kindly tick and fill appropriately

1. Name of organization: -.....
2. Years of establishment:.....
3. Gender: (a) Female () (b) Male ()
4. Age range 20-31(), 31 -40 (), 41-50 (), 51-60(), 51-70 ()
5. Marital status: (a) Single () (b) Married ()
6. Educational Qualification: (a) ND () (b) HND () (c) B. Sc () (d) others _____
7. Size of organization: - Small () Medium () Large ()
8. Professional qualification (a) COREN (b). CORBON (c). ARCON (d). ESVABON
9. Nature of Business services (a) Construction (b) suppliers (c) Artisans (d) Consultancy (e) others, please specify_____
10. What type of real estate property development are your organization into? (a) residential () (b) Commercial () (c)Mixed Use() (d) Ware House () (e) Industrial() (f) Special Properties () (G) Others.....
11. What type of property development do you have in the study area?
12. Kindly indicate the morphological types of road construction in the study area.
1=Never available 2= Rarely available 3= Sometimes available 4=Often Available
5=Always available

Types of road construction	Never available	Rarely available	Sometimes available	Often Available	Always available
Federal Road					
State road					
Local road					

13. Kindly indicate the road facilities in the study area?

Road Facilities	Side walks	Road way	Carriag e way	U Turn Facilitie s	Median	Drainag e	Traffic light	pavemen t
Federal road								
State Road								
Local roads								

14. Is the road serving its purpose? (a)Not satisfy () (b) Slightly satisfy () (c) Moderately satisfy () (c) Very satisfy () (e) Extremely Satisfy ()
15. Was your property affected during construction of the road? (a) Not affected () (b) Minor affected () (c) Neutral () (d) Moderately affected () (e) Majorly affected()
16. What is the present state of the road? (a) Poor (b) Fair (c) Good (d) Very good (e) Excellent
17. When was the road constructed? _____

Section B

18. What is the range of land size in the study area? (a)500m²-1000m², (b) 1001m²-1500m², (c) 1501m²-2000m², (d) 2001m²- 2500m², (e) 2501m²-3000m², (f) 3001m²-3500m², (g) 3501m²-4000m²

19. What was the capital value of land before road construction? (a) #500,000 -#1m, (b) #1.1m -#1.5m, (c) #1.6m-#2m (d) #2.1m-#2.5m (e) #2.6m-#3m (f) #3.1m-#3.5m (g) #3.6m-#4m

20. What is the market value of land in this neighborhood at the moment? (a)#5m-#10m, (b)#11m-#15m, (c) #16m-#20m, (d) #21m-#25m, (e) #26m-#30m, (f) #35m-#40m

Years	4 bedroom detached house (₦)	3 bedroom detached house (₦)	3-bedroom flat (₦)	2-bedroom flat (₦)	Self-contained units (₦)	Blocks of shops	Shopping complex	Office space
2006								
2007								
2015								
2016								
2017								
2018								
2019								
2020								
2021								
2022								
2023								

21 Kindly indicate the rental value of property in the study area?

22. Kindly indicate market value of properties in the study area?

Years	4 bedroom detached house (₦)	3 bedroom detached house (₦)	3-bedroom flat (₦)	2-bedroom flat (₦)	Self-contained units (₦)	Blocks of shops	Shopping complex	Office space
2006								
2007								
2015								
2016								
2017								
2018								
2019								
2020								
2021								
2022								
2023								

23. Please rate the effect of Road construction on property value in the study area.
Extremely effective=5 Very effective=4 Moderate effective=3 Slightly effective=2
Not at all=1

Variables	Extremely effective=5	Very effective=4	Moderate effective=3	Slightly effective=2	Not at all=1
1. Loss of property due to road expansion					
2. Increased safety costs (traffic handling requirements and increased no of accidents)					
3. Increased air pollution					
4. Increase in noise pollution					
5. Increase in business operation					
6. Increase in crime rate e.g. robbery and burglary					
7. Increase in budget for investment					
8. Increase in rental value & increase in market value					
9. It reduces congestion					
10. It encourages property investment					
11. It makes accessibility easy It helps in linking other roads					
12. Gain in time due to little or no traffic diversions					
13. Freedom of person to drive faster through rehabilitated roads which are wider					
14. Increase in vehicular speeds due to non-existence of port holes and bumps					
15. It encourages economic growth					
16. It encourages foreign investors					
17. Reduced vehicle operating cost					
18. Others, please specify					

Section D

24. Kindly indicate the Factors influencing the effect of Road construction on property value in the study area using the Likert scale 5=Extreme Influence (EI) 4= Very Influence (VI) 3= Somewhat Influence (SI), 2= Slightly Influence,1= Not at all influence

Factors	Extreme influence 5	Very influence 4	Somewhat influence 3	Slightly influence 2	Not at all influence 1
1. Economic					
2. Tax					
3. Inflation					
4. Congestion					
5. Legal					
6. Political					
7. Social factor					
8. Demand					
9. Supply					
10. Location					
11. Government Policy					
12. Religion					
13. Age of the building					
14. Time of construction					
15. Nature of road					
16. Population					
17. Culture					
18. Inefficiency of contractors					
19. Natural disaster					
20. Environmental factors					
21. Neighborhood					

Appendix II

Maps

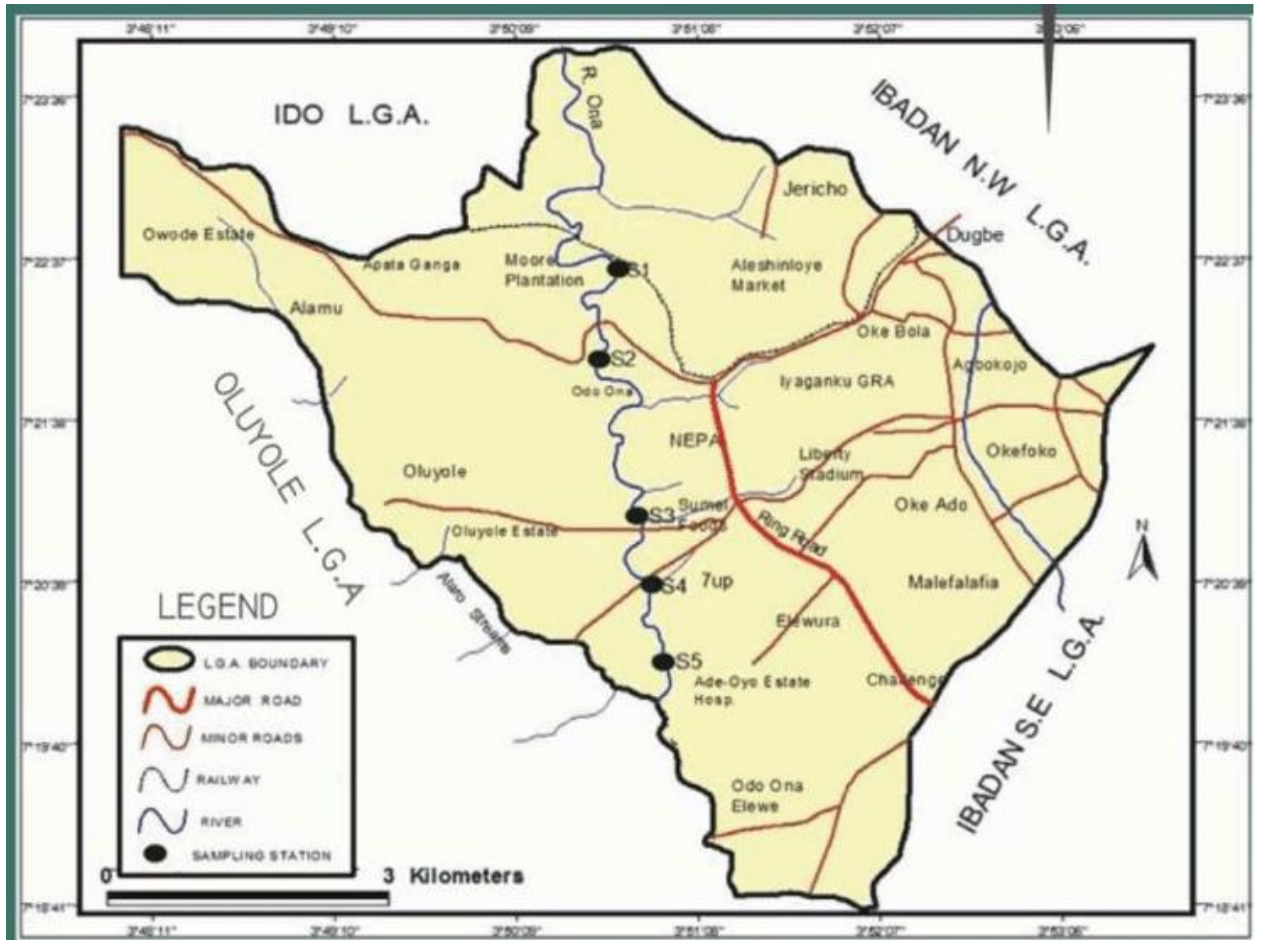


Figure 1.1: Map showing the layout of Oluyole area in Ibadan (Oyo State)



Figure 1.2: Map of Oyo State showing Ido Local Government, Ibadan (Oyo State)

Bio-data

A. Personal Data

1. Full Name: Oluwatobi Omoyemi AYODELE
2. Email: jegedeomoyemi@gmail.com
3. Phone No: 07039436123
4. Date and Place of Birth: 10 August 1988
5. Nationality: Nigerian
6. Marital Status: Married
7. Address: 27 Azeez Aina street Olusanya ring road Ibadan 07033885566
9. Name and Address of Next of Kin: Mr Ayodele Olatunde Samuel
27 Azeez Aina street Olusanya ring road Ibadan 07033885566

B. Educational Background

1. Educational Institutions Attended with Dates and Qualification:

- i. **Primary Education:** St James Cathedral School Oke Bola Ibadan 1996-2001
- ii. **Secondary Education:** Celestial Church of Christ High School 2001-2007

iii. Higher Educational Institutions Attended with Dates & Qualification:

MSc in Estate Management In View
Lead City University

Bachelor of Science in Estate Management (First class honors) 2019 -2021
Lead City University

Higher national Diploma in Estate Management (Upper Credit) 2013-2015

The Polytechnic of Ibadan, Ibadan Oyo state

National Diploma in Estate Management (Upper Credit) 2009- 2012

The Polytechnic of Ibadan, Saki Campus, Saki Oyo state

West Africa Senior School Certificate 2001-2007

Celestial Church of Christ High School. Ibadan

Primary School Leaving Certificate 1995- 2001

St' James Cathedral School Oke-Bola Ibadan.

C. Work Experience: With Dates (including courses taught where relevant)

Graduate Assistant Lecturer, Lead City University Ibadan 2022 till date

Retail Center Manager at New Horizons Computer Learning Center 2020-2022

Retail Academic Counselor 2018-2020

National Youth Service Corp (NYSC) 2016-2017

Instructor at New Horizons Computer Learning Center

Standard Alliance Life Insurance 2015

Olamide Nursery and primary School 2011-2012

Class teacher

D. Paper Submitted, Accepted and Published during the session or since last promotion:

I. Fayomi, R. A. Adedokun, B. F. Oguntokun, & **O. O Ayodele**. (2023) An Evaluation of Real Estate Managers' Ethical Decision Making in Property Management Practice in Ibadan Metropolis, Nigeria. Lead City University Post Graduate Multidisciplinary Conference (MCONVO) Held At LCU, Ibadan, Nigeria. From 16th To 19th, October, 2023

Manuscript Submitted for Journal /Conference

Oguntokun B.F., Fayomi, I., Adedokun , A. R & **Ayodele O.O.** (2023) An Evaluation of the Factors Influencing Project Management Practice in Real Estate Construction in Nigeria, West Africa.

E. Other Academic Publications

- Effect of road construction on property value in selected peri-urban areas in Ibadan, Oyo state. Nigeria.
- Management strategies of Bashorun housing estate, Akobo, Ibadan, Nigeria
- Impact of conflicting and complimentary property use on adjoining property value in Badagry, Lagos State Nigeria.

F. Conference, Workshop, etc. Attended and Papers

- The Nigeria Institution of Estate Surveyors & Valuers 45th Annual Conference (Osun 2015)
- Mandatory Continuing Professional Development Seminar (MCPD) 2015 Lagos Branch
- Mandatory Continuing Professional Development Seminar (MCPD) 2015 Oyo Branch
- 3rd NIEVS national Summit
- Mandatory Continuing Professional Development Seminar
- NIEVS Oyo Branch 2021

Referees

Prof E O. Ayoola.

Department of Mathematics University of Ibadan

Dr Igho Fayomi.

Head of Department, Estate Management Department, Lead City University

Signature

Date

Lead City University: DO NOT COPY

The University Compliance Certification

This is to certify that this thesis was written by Oluwatobi Omoyemi AYODELE with Matriculation number LCU/PG/003244 in the Department of Estate Management, Faculty of Environmental Design & Management, Lead City University, Ibadan Oyo State, is in full compliance with the approved University format and style.

Signature

Date

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