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ADDIS ABABA UNIVERSITY

ETHIOPIAN INSTITUTE OF ARCHITECTURE, BUILDING CONSTRUCTION AND, CITY DEVELOPMENT

THE CHAIR OF URBAN LAND POLICY

COMPARATIVE ANALYSIS OF MONTHLY RENTS FOR GOVERNMENT AND PRIVATE RESIDENTIAL APARTMENTS THE CASE OF ADDIS ABABA, ETHIOPIA.

By: Masresha Belete

September /2018

Addis Ababa, Ethiopia

COMPARATIVE ANALYSIS OF MONTHLY RENTS FOR GOVERNMENT AND PRIVATE RESIDENTIAL APARTMENTS THE CASE OF ADDIS ABABA, ETHIOPIA

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SCHOOL OF GRADUATE STUDIES

ETHIOPIAN INSTITUTE OF ARCHITECTURE, BUILDING CONSTRUCTION AND, CITY DEVELOPMENT

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Approved by Board of Examiners

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Examiner	Signature	Date
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Declaration

I confirm that this study entitled “Comparative analysis of Monthly rents for government and private residential Apartments the case of Addis Ababa, Ethiopia”, is my original work. This study has not been presented elsewhere for assessment and award of any degree or diploma. I also verify that all sources have been properly acknowledged.

Masresha Belete	…….	……
Name	Signature	Date

Confirmation by Advisor

Mr Mesfin Yilma [MA]	……	……
Name	Signature	Date

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Acronyms

Art Article

CDF Cumulative Distribution Function

CPI Consumer price index

DCF Discounted Cash Flow

DRC Depreciated replacement cost

EC Ethiopian Calender

e.g. Example

EIABC Ethiopian Institute of Architecture, Building Construction and, City Development

ERC Economic research corporation

FDRE Federal Democratic Republic of Ethiopia

GDP Gross domestic product

HOAs Homeowners' associations

IVS International valuation standard

IVSC International valuation standard committee

MR Market Rent

MSc Masters of Science

NOI Net operating income

UK United Kingdom

US United State

VIF Variance Inflactory Factor

Abstract

Real estate product by its nature is heterogeneous and its value is the combination of the integrated components of the property, amenities, and externalities which may be positive or negative but, these determinant variables are not studied sufficiently in Ethiopia. This study is conducted on the comparison of monthly rents for private and government-administered residential apartments in Addis Ababa, the capital city of Ethiopia, at three case study areas, CMC, Jemo and Kazanchis on 164 sampled private residential apartments and 150 government-administered residential apartments. The sites CMC, Jemo and, Kazanchis were selected purposefully for the existence of concentrated comparables and completion of constructions of real estates in those areas. The samples were selected purposefully to include variations in floor levels, the number of bedrooms, access to lift, the number of bathrooms, external wall finishes types and better views. These variables are included at each floor levels. The monthly rents of private residential apartments are collected by questionnaires from the tenant and the monthly rents of government administered residential apartments were taken from the federal housing corporation. Based on the data, the average monthly rents of one, two and three bedroom of government-administered residential apartments for both diplomat and the local tenant is smaller than the monthly rent of private apartments. The rent of government-administered residential apartments is determined by the advanced regulated procedure. Based on the regulation and actual estimation of rents, quality of property to be rented, the internal area of the property, tenant type (as local and diplomatic) and Site level that the property exists are the main determinant variables for government-administered residential apartments. The regression result of private residential apartments at the case study areas indicate as nine significant variables (Area of the apartment, Acces to balcony, Security of the compound, Access to type of road, Access to parking area, Number of bedrooms, Access to lift, Type of external wall finish and the Location of the site) that determine the monthly rent at the 95% level of confidence interval. Monthly rents should be determined in relation to the coefficients of these significant variables with the developed model. In comparison to the private residential apartments, the government administered residential apartments are rented at lower amounts and it is static. The monthly rent of private residential apartments increases in each contractual agreements and tenants rise this issue as their problem. It is not to say there should be static rent, but the increasing rate is high. To solve this challenge of the tenant, there should be a guide on landlord-tenant relationships. From the highest and best use perspective of real estate, the government administered residential apartments are rented at the lower value. To solve this problem, the government should either privatize or adjust the rent at least not to be static.

Key terms

Comparative analysis, Confiscation, Government property, Private property, Rent value, Residential apartments.

CHAPTER ONE

1. Introduction

1.1 Background

Land, in its improved or unimproved state, is fundamental to most human activity (Sayce, 2006). In practice the term land may include more than simply the earth; it may also include the improvements to the land (David Ling, 2018). It is one of the world's resources (with labor and capital) used to create economic goods to satisfy human desires and needs (Wyatt, 2007). In English law, goods and belongings owned by a person or legal body are termed personal property whereas land and buildings are real property. (Blackledge, 2009).

There is a distinction between real estate and real property. Real estate refers to land and all things that are a natural part of the land whereas, real property is a right, interest or benefit related to real estate (Parker, 2016). For this study, the term real estate and real property were interchangeably used. Estimating the value of real estate is poseur poser and peoples confuse in fixing the value of real estate.

The concept of value is difficult to pin down. Adam Smith first noted the ambiguity surrounding the word value, which can mean usefulness in one sense and purchasing power in another, referring to them as value-in-use and value-in-exchange, respectively. In a single conveyance or transaction of a property there might be an asking price advertised by the seller, a bid price offered by the potential buyer and finally, usually after some period of negotiation, an agreed exchange or sale price at which the property is conveyed or transacted (Wyatt, 2007).

Valuation is an estimate of price, typically an estimate of the most likely price to be concluded at a specific point in time by buyers and sellers of a property that is assumed to be available for purchase. Consequently, sale prices are by and large useful indicators of the value of properties (Wyatt, 2007). Value is obtained through the gathering and application of comparable evidence. The comparable evidence is gathered from transactions involving

properties similar in terms of effective rents and yields. The valuation methods use rents and rental levels as at the valuation date, and yields in which risk and growth are implied (Sayce, Sarah, Piers Venmore-Rowland, 2006).

Valuations are required for many purposes relating to the development and subsequent occupation and ownership of property. The purpose for which the valuation is required and the type of property that is to be valued will determine the nature of the valuation instruction, including the techniques employed and the basis on which value is to be estimated. Real estate assets and markets are unique when compared to other goods. The two primary characteristics of real estate assets are their heterogeneity and immobility (David Ling, 2018). Unlike personal properties, each unit of real property is unique, thus giving rise to separate submarkets for different types of property, means that there is a demand for professional valuers to help determine the market value of individual properties (Wyatt, 2007). Because of these two factors (heterogeneity and immobility), the market for buying, selling, and leasing real estate tends to be illiquid, localized, and highly segmented, with privately negotiated transactions and high transaction costs. Each unit of property is unique; it is a heterogeneous product, if only because each land parcel on which a building is sited occupies a separate geographical position. This means that it will vary in quality – for urban land, this is largely due to accessibility differences but will also differ in terms of physical attributes, legal restrictions (different lease terms for example) and external influences such as government intervention in the form of planning (Wyatt, 2013).

There are three internationally recognized methods of property valuation and they are all based on the principle of market comparison. They are (1) sales comparison; (2) income capitalization; and (3) replacement cost. The valuer may use one or more of those approaches to estimate the value of a property (Wyatt, 2007).

In many cases property is occupied under a contract, with the occupier paying the owner rent in return for the right to occupy; the owner surrenders the occupation rights for rent. The property market is a major source of opportunities for investors looking for a return on their capital. The valuer is often asked to value an interest in property where the value is clearly dependent on the amount of rent that an occupier would pay for the right to occupy

and on the level of return an investor would require on their capital. (Eric Shapiro, David Mackmin and Gary Sams, 2013).

The neoclassical approach to rent has been widely adopted and is recognized within the guidance provided by and to the international valuation community. The International Valuations Standards Committee (IVSC) has defined market rent (MR) as: The estimated amount for which a property or space within a property, should lease (let) on the date of valuation between a willing lessor and a willing lessee on appropriate lease terms in an arm's length transaction after proper marketing wherein the parties had acted knowledgeably, prudently and without compulsion (Sayce, Sarah,Piers Venmore-Rowland, 2006).

The value-influencing characteristics of a property must be identified to enable a valuation to be undertaken. Influences on value can be classified as property-specific or market-related. Valuation methods have developed over the years to help the valuer quantify the effect of geographical/spatial, legal and physical influences on value. The principal physical qualities of the building are size, age, and condition, external Appearance (including aspect and visibility), internal specification and configuration. The principal macroeconomic influences on property values include a national output (measured using the Gross Domestic Product), inflation, household disposable income, consumer spending and retail sales, employment, construction activity, net household formation, production costs (including wage levels) and the cost and availability of finance (Wyatt, 2013). The study conducted in Kenya identifies some rent value determining variables and indicates as the rent of the residential property is highly dependent on the number of bedrooms and the area of the main house. These variables are founded as the significance from the regression result of the rent and independent variables (title, number of reception rooms, location and number of the bathroom) (Bernadette M.Gitahi, 2001). A similar study conducted in this country indicates as, there are significant relationships between residential real estate prices and interest rates, GDP, and level of money supply. It indicates as the interest rates have the most significant effect on house prices followed by GDP and level of money supply (Rita Wachera Karoki, 2013).

The other study in Sri Lanka indicates the distance to the university and floor area per person is the most determining variables in rental values. Freely available water, freely available electricity, attached bathroom and neighborhood's characteristics as less congestion/privacy are highly significant with the rental values as second-order factors. As the study indicates the third order factors determining rental value were a distance to bus route, distance to the junction, tiled floor, and roof with a ceiling (Wickramaarachchi, 2016).

The University of Minnesota has asked Economic Research Corporation (ERC) to examine the subject properties owned by the university and the current rental levels. The purpose of the study was to determine the fair market rents for the University so that its current rental policies can be evaluated in light of comparable and competitive rental offerings the average monthly rents are substantially higher than those in Dakota County. The finding shows that the average rent for two-bedroom units is $216 which is $46 per month higher than the Dakota County average. The metropolitan area three-bedroom average rental is also higher than Dakota County averages by $20.00 per month (Economic research corporation, 1975).

Kinds of literature indicate that different countries conduct a research on rental values but there is not sufficient study conducted in Ethiopia about rental value determining factors for residential properties.

1.2 Statement of the problem

Housing remains a critical personal and governmental problem in virtually every country in the world. Housing is expensive of resources. A shelter is one of those basic necessities for the survival of human beings in addition to food and clothing. Hence due to its importance, it has been expressly recognized as part of fundamental human rights in different international instruments (United Nations General Assembly, 1948).

The existing housing stock in Addis Ababa is generally of poor quality, with many settlements being congested and unplanned. According to estimates by the Ministry of Works and Urban Development, the housing deficit in Addis Ababa alone is about 300,000 units (The Centre for Affordable Housing Finance in Africa 2017). The other indicator of the

demand for housing is the recent Government condominium lottery of April 2010 with a total of 485,000 individuals. The central statistical authority and Department of Demographic Sciences, University of Roma also study jointly and project the demand for housing to Addis Ababa to be 578,547 in 2010 for a population of 3,327,498 (Gebeyehu Abelti, Marco Brazzoduro, Behailu Gebremedhin. 2001). What is even more worrying in increasing deficit is that the problem has worsened between the two censuses surveys of 1994 and 2007 (The Centre for Affordable Housing Finance in Africa 2017).

The real estate sector has been one of the fastest growing segments of the Ethiopian economy. Real estate sector grew in real terms by an annual average of 14.1 percent per in the past five years to 2008/09 (Access Capital, 2010). Although the housing stock delivered by the private real estate sector is minimal, the sector has significantly grown in the post-1991 period, focusing primarily on high-income households in Addis Ababa in particular(Ibid). Housing is the most representative land use in an urban area including Ethiopia. The deficit of housing calls the attention of private real estate developers. Licensed real estate developers continuously construct real estate space for tenants and sale or rent or the buyer may rent it to another tenant. But the main conundrum is how the rent and sale price for each property is determined. Rent value and effect of determinant characteristics are not sufficiently studied in Ethiopia. Real estate product by its nature is heterogeneous and its value is the combination of the integrated components of the property, amenities, and externalities which may be positive or negative but these determinant variables are not studied.

It was suggested but not commensurate (substantiated) that monthly rents for apartments administered by federal Housing Corporation and private rental apartments were not imbalance. There is no sufficient study conducted in Ethiopia on the fairness of monthly rents for government-administered residential apartments with reference to private residential apartments. The rent of Private rental apartments is determined by the demand-supply interaction whereas the rent of federally administered residential apartments is determined in some legal procedures and the study assessed the comparability of rents for private and federal administered residential apartments in the study areas.

1.3 Objective of the study

1.3.1. General objectives

The principal objective of the study was to analysis the rental value difference for private and government residential Apartments.

1.3.2 Specific objectives

- Analysis of the rent determination procedures of government administered residential apartments.
- Analyze rent determinant factors of residential apartments.
- Examine the difference to rent and rent determinant variables between government and private residential apartments.

1.4 Research questions

The study was basically emphasized the following questions.

- What are the rent determining factors of residential rental apartments?
- What are the rent determination procedures of government administered residential apartments?
- What the rent and rent determinant variable variations between government and private residential apartments look like?

1.5 The scope and importance of the study

There are different types or sources of rents. The tenant may search rentable houses from the government, developers, or from landlords (private holders). The study had analyzed the current rent variation between government and private residential apartments in three selected case study areas in Addis Ababa. The study may be an alarm and be a pointer for the developers to meet the choice and intent of tenant and consider it for new developments. Besides this, the study may avoid the biases of rent difference for the same amenities and

the tenant may be a beneficiary of the fairness' of rent. It may also be an alarm for the government to adjust and revise the rent determination procedure to adopt proper rent value.

1.6 Structure of the Study

This paper was organized into five chapters, chapter one states about the background of the study. Chapter two, three, four and five states about the review of related literature, Research methodology, data analysis, conclusions, and recommendations respectively.

1.7 Limitation of the Study

The study was conducted through painstaking efforts. But still, there is a limitation in this study that the age of government administered residential apartments and private residential apartments are not imbalances. This is due to that the age of government administered residential apartments is relatively older than the private residential apartments. To overcome this problem, effective age is considered instead of actual age. Effective age is considered on the physical deteriorations and the government apartments looking deteriorated and not imbalance of private properties were excluded. The heterogeneous nature of real estate makes difficult to get the exact replica and standardized comparables and this may cause a bias on the result of the study. But as match as possible, more similar apartments are taken by considering effective age other than actual age. Further study may need for new government-administered residential apartments but at this time there are no new apartments that could be comparable with the private residential apartments.

CHAPTER TWO

2. Literature Review

Introduction

Property may have different meanings based on its context. For this study, it is used to express the relationship of things peoples that has value and associated with somebody. Property may be classified as personal or real property or tangible or intangible properties. The study had assessed the nature and meaning of real property.

Real property is more than just earth and things that are attached to the earth. It includes everything beneath the surface of the earth and in the airspace above. Real property can be divided into different classes depending on the purpose used. The major classes are residential and commercial property and in some circumstances, it may be mixed used. This study deals the rent difference associated with the property occupied by the government-owned as one group and owned by private developers as another group. The strength of rights associated with the property highly affects the value of the real estate space and the real estate asset and the rights over the real estate in Ethiopia is either leasehold right or holding right. The property may be used by the owner or rented to tenants and different rent concepts and theories were assessed. In Ethiopia, the tenants may search rentable space from the government or from private developers. Most private residential tenants agree at market rent and those government residential tenants agree by the contractual rent. This study tries to assess rent determining factors with the final goal of comparing the market rent to the contractual rents.

The value of the property depends on the capacity of the property to generate the income and low monthly rent implies the reduction in value and high monthly rental income implies the high value of the property when assessed specifically by the income valuation approach which is the best approach of valuation for income-generating properties. Theoretical and

empirical reviews show that the value of real property is a function of the bundle of variables which may be the property specific factor or market-related factor.

2.1 Property

2.1.1 Meaning of property

The Oxford English dictionary defines property as 'a thing or things belonging to someone'. Those things belonging to someone (short term properties) could be 'either tangible or intangible' and those tangible properties have physical substance[1] whereas intangible property is property that represents a set of rights that have no physical existence, but which do represent control or ownership of something of value (F. Hinkel, 2008 p 2).

The other classification of property is real property and personal property. Personal properties include all properties other than real properties. Real estate is defined as land and all things that are a natural part of the land, things that have been attached to the land, and all permanent building attachments (D. Parker, 2016 p 93). In general, it is defined as the 'land and its permanent improvements[2]'. From legal and practical limit of a component, real estate can be noted as it is not only the surface of the earth, but also including above and below the Earth surface ((David Ling, Wayne Archer, 2018, p 3& 5). Therefore, in this context real estate includes land and any permanent fixtures attached to it.

Real estate is also viewed as the bundle of intangible rights associated with the ownership and use of physical characteristics of space and location. Real property relates to land and those things that are more or less permanently attached to the land, such as homes, office buildings, and trees (F. Hinkel, 2008).

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[1] Physical substance refers to something you can hold, taste, see and hear

[2] *I*mprovements on the land include buildings, fences, walls, decks, the components necessary to make the land suitable for building construction or other uses like infrastructures which consist street, walkways, stormwater, drainage system and other systems such as water, sewer, electric, and telephone utilities.

Real property is more than just earth and things that are attached to the earth. It includes everything beneath the surface of the earth and in the airspace above. Land in its legal signification extends from the surface down to the center of the earth and upward indefinitely to the stars. An owner of real property usually owns all the minerals beneath the surface of the land and the owner can sell the minerals separate from the surface or lease them to a company or conversely, the surface of the land can be sold, and the owner can retain the rights to the minerals beneath the surface. The owner of the real property also owns the airspace above the surface of the land (F. Hinkel, 2008).

Even though the definition of real estate includes as land and improvements on the land, those assets are administered in different ways in different countries. For instance in Ethiopia the ownership rights of land and for improvements on the land are different. According to the 1995 constitution:

The right to ownership of rural and urban land, as well as of all natural resources, is exclusively vested in the State and in the peoples of Ethiopia. The land is a common property of the Nations, Nationalities, and Peoples of Ethiopia and shall not be subject to sale or to other means of exchange (FDRE Constitution, 1995 art 40). Every Ethiopian shall have the full right to the immovable property he builds and to the permanent improvements he brings about on the land by his labor or capital. This right shall include the right to alienate, to bequeath, and, where the right of use expires, to remove his property, transfer his title, or claim compensation for it (FDRE Constitution, 1995 art 40(7)).

This implies that the right for improvements on the land is the ownership right and the right of land are either holding right or leasehold right. The bundle of property rights can range from complete ownership down to little more than the “squatter’s rights” of an unintended tenant. A variety of nonpossessory rights also can affect the value of real property, including restrictive covenants, easements, and liens (David Ling, Wayne Archer, 2018).

2.1.2 Real Property in Ethiopia

The land tenure system in Ethiopia had passed through different institutions. In pre-1974 Imperial Ethiopia; the most common types of land-related institutions were rist, gult,

Madeira (Yemengist) land and Semon (church) land (Belay, 2016). Through the proclamation of March 1975, the Derg regime undertook a thorough and radical land reform that nationalized land and made it state property (Proclamation Number 47, 1975). Urban extra houses nationalized in this proclamation currently administrated in two ways (one class are houses administered by the kebele (those that were rented below 100 ETB per month at the time of confiscation) and the other classes are houses administered by the federal housing corporation (those were rented above 100 ETB per month at the time of confiscation).

When the current government came to power in 1991, two divergent views of land ownership were forwarded by different groups: private or state ownership of land. However, despite its market economic policy, the ruling party made it clear that the policy on land was to continue more or less the same lines to that of the Derg's land policies (Belay, 2016). Land ownership is vested in the state and this was enshrined in the 1995 constitution (FDRE Constitution, 1995 art 40 (3). The state ownership of land prohibits landholders from selling it without improvements and the only way of getting land is through the lease system. This algorithm confined to land use plans Congest the tenant opportunity of getting land.

The current hot debate on the land issue focuses on private-state dichotomy. The government officials have been favoring and implementing state ownership policy of land in the name of protecting the poor from selling their land and become landless (Belay, 2016). There are two basic forms of landholding rights for urban and rural lands in Ethiopia. It is stated from the lease proclamation that 'no person may acquire urban land other than the lease holding system[3]' (Proclamation No 721/ 2011 Art 5). The acquisition of urban land is through the lease holding system and for rural land is a holding right which is stated in rural land administration and land use proclamation No 456/2005 as 'holding right means the right of any peasant farmer or semi-pastoralist and pastoralist shall have to use rural land for purpose of agriculture and natural resource development, lease and bequeath to members of his family or other lawful heirs, and includes the right to acquire property produced on his

[3] Lease means a system of land tenure by which the right of use of urban land is acquired under a contract of a definite period.

land thereon by his labour or capital and to sell, exchange and bequeath same' (Proclamation No. 456/2005) . Infrequent situations, there are cases in which urban land was held by a system called old possession and in any means of a transaction of property, this right would be converted to the leas system. The rights held over the property affects the value of the property and hence it is due to this fact the study assess the rights over real property in Ethiopia and the nature of real property which greatly affect the real estate market is described hereinbelow (part 2.1.3).

2.1.3 Nature of Property

As introduced in part 2.1.1 Real estate, or real property is land and the improvements made to land, and the rights to use them. To articulate the term land for a clear understanding of ownership, the land starts at the center of the earth, passes through the earth's surface, and continues on into space and this definition includes surface, subsurface and air rights for a legal purpose. Real property is more than just earth and things that are attached to the earth.

Real property includes everything beneath the surface of the earth and in the airspace above. The Ethiopian civil code explains the extent of the right to the land as 'Ownership of land shall extend below the surface of the land to the extent necessary for the use of the land' and 'extend above the surface of the land to the extent necessary for the use of the land' (Civil Code 1960 Art 1209 & 1211).

The other major component of land is fixtures which are affixed to land with the intent of being permanent is considered to be part of the land and therefore real estate. 'Whether or not an object becomes real estate depends on whether the object was affixed or installed with the intention of permanently improving the land. The intention is evidenced by four tests: (1) the manner of attachment, (2) the adaptation of the object, (3) the existence of an agreement, and (4) the relationship of the parties involved' (Jacobus, 2010). But trade fixtures are viewed separately from real estate and are personal property which the tenant may take after the expiration of the lease (David Ling, Wayne Archer, 2018 p 584).

The land has conclusive economic and physical characteristics. The physical characteristics of the land are the immobility, indestructibility, and non-homogeneity.

This combination of characteristics makes land different from other commodities and directly and indirectly influences man's use of it. The land is immobile, a person must go to the land; it cannot be brought to him. When land is sold, the seller cannot physically deliver his land to the buyer. Instead, the seller gives the buyer a document called a deed that transfers to the buyer the right to go on to that land and use it. The characteristic of physical durability encourages many people to buy land as an investment because they feel that stocks and bonds and paper money may come and go, but the land will always be indestructible (durable). The physical characteristic of non-homogeneity is that no two parcels of land are exactly alike because no two parcels can occupy the same position on the globe. Although the land is non-homogeneous, there can still be a high degree of physical and economic similarity. Finding similar properties is, in fact, the basis for the market-comparison approach to appraising real estate (Ibid).

'The dividing line between the physical and economic characteristics of land is difficult to define. However, four economic characteristics are generally recognized: scarcity, modification, the permanence of investment (fixity), and area preference '(Jacobus, 2010). The shortage of land in a given geographical area where there is great demand for land is referred to as scarcity. There is a limited physical amount of land on the earth's surface. Although there is a limited physical amount of land on the earth's surface, scarcity is chiefly a function of demand for land in a given geographical area and the ability of man to make land more productive (Ibid).

The other important economic characteristic of land is the modification. Land use and value are greatly influenced by modification (improvements made by man to surrounding parcels of land). Those improvements may increase or decrease the value depend on the effect it causes. Real estate requires a long period of time to the payback is referred to as fixity or investment permanence. It needs a long payback period and real estate investors need to consider the term. Situs or location preference refers to the location from an economic rather than a geographic standpoint. It has often been said that the single most important word in real estate is location. For a residential area, the preferences of people to the area are the result of natural factors, such as weather, air quality, scenic views, and closeness to natural

recreation areas, and of man-made factors, such as job opportunities, transportation facilities, shopping, and schools (Jacobus, 2010).

The main methods of acquiring ownership right real property are the inheritance, devise, gift, sale, and adverse possession (F.Hinkel, 2008). Inheritance and Devise are the first two methods in which ownership right transfers through the death of the previous owner. Inheritance, or descent, as it also is known, is the passage of title and ownership of real property from one who dies intestate (without a will) to people whom the law designates, because of blood or marriage, as the owner's heirs. Each state has its own descent statute, and the statutes vary slightly from state to state. The law of the state in which the property is located will decide who is to inherit. The access to real estate space may acquire through the contractual agreement between the landlord and the tenant. The landlord and the tenant are led by the contract that transfers exclusive use and possession of space to the tenant (David C.Ling, Wayne R.Archer, 2005, p 555). The contracting party must be legally competent and must have a legal objective of the contract. Of contractual elements, the start and end dates of the agreement and the agreed upon rental payments are both negotiated items (Ibid). The contractual agreements may vary based on the type of property and based on kings of literature the types of property are stated below (2.1.4).

2.1.4 Types of Property

The type (division) of property depends on the purpose in mind. For a rental purpose, the major types of income-producing properties are classified as residential, office, retail, industrial, and hospitality properties. The division is due to the evidence that there is substantial variation in the activities and needs of tenants. For purposes of federal income taxes, real estate is classified into four categories (David Ling, Wayne Archer, 2018 p 525 &589) as: real estate held as a personal residence, real estate held for sale to others (dealer property), real estate held for use in a trade or business activity (trade or business property) and Real estate held for investment (investment property).

The Michigan State Tax Commission classifies the real property as (The Michigan State Tax Commission, 2013):

A. Residential Real Property: Platted or unplatted parcels, with or without buildings, and condominium apartments located within or outside a village or city, which are used for or probably will be used for residential purposes are properly classified as residential properties.

B. Agricultural Real Property: Agricultural real property includes parcels used partially or wholly for agricultural operations, with or without buildings.

C. Commercial Real Property: Platted or unplatted parcels used for commercial purposes, whether wholesale, retail, or service, with or without buildings

D. Developmental Real Property: Developmental real property includes parcels of more than five acres without buildings or more than 15 acres with a market value in excess of its value in use. Developmental real property may include farmland or open space land adjacent to a population center, or farmland that may be subject to competing for valuation influences.

E. Industrial Real Property: Platted or unplatted parcels used for manufacturing and processing purposes, with or without buildings. It also includes parcels used for utility sites for generating plants, pumping stations, switches, substations, compressing stations, warehouses, rights-of-way, flowages land, and storage areas, Parcels used for removal or processing of gravel, stone or mineral ores, whether valued by the local assessor or by the state geologist

F. Timber-Cutover Real Property: Timber-cutover real property includes parcels that are stocked with forest products of merchantable type and size; cutover forestland with little or no merchantable products; and marshlands or other barren lands.

Similarly, real estate agents and brokers work with three major property types and it is possible to say there are three types of properties Namely, vacant land, residential properties and commercial properties (Kimmons, 2018). Through the time mostly in urban areas, the vacant land may be improved and used either for residential or commercial purposes and it is possible to categorize the main types of properties as the commercial and the residential properties (Ibid). Based on the purpose (use) of the property, real property can be categorized as residential, commercial and mixed-use (William B.Brueggman, Jeffery

D.Fisher, 2002). Commercial properties are not the concern of this study and let see the nature of residential properties.

2.1.4.1 Residential Properties

The residential real estate may contain either a single family or multifamily structure that is available for occupation or for non-business purposes. (Wikipedia, the free encyclopedia, 2018). The Arizona residential act defines as Residential rental property means property that is used solely as leased or rented the property for residential purposes. If the property is a space rental mobile home park, residential rental property includes the rental space that is leased or rented by the owner of that rental space but does not include the mobile home or recreational vehicle that serves as the actual dwelling if the dwelling is owned and occupied by the tenant of the rental space and not by the owner of the rental space (Arizona Department of Housing, 2018). Redfin Corporation in the US classify the major residential properties as the following (Redfin Corporation, 2018):

A. Single-Family Home: Single-family homes (often abbreviated as SFH) are homes built on a single lot, with no shared walls. Sometimes there's a garage, attached or detached. Single-family homes tend to offer more privacy and space than other types of homes, and frequently come with private front and back yards. This home type generally requires a lot more maintenance, and all of the cost for that falls on the shoulders of the homeowner.

B. Condominium: Condominiums are single units within a larger building or community. Condominiums share a wall or two with other units, and generally come with homeowners' associations (HOAs), which require the residents to pay monthly or yearly dues. They are popular in urban, high-density areas, where there are many restaurants and shops. There is minimal responsibility on the homeowner's part to contribute to maintenance and upkeep. For example, if the roof goes out, you share the costs with other residents instead of paying for the whole thing yourself. Additionally, some condos offer gyms, lounge areas, pools and other amenities that you might not be able to afford or have space for in a single-family home.

C. Townhouse: Townhouses are a hybrid between a condominium and a single-family home. They are often multiple floors, with one or two shared walls, and some have a small yard space or rooftop deck. They're generally larger than a condominium, but smaller than a single-family home. Townhomes often have more privacy than a condo might afford. Some have HOAs or joint maintenance agreements to share upkeep costs. They tend to be more affordable than a single-family home. Townhomes don't usually have shared amenities like a gym or a pool, but they're not as private as a single-family home.

D. Cooperatives: Cooperatives are a slightly different way of holding a title to a shared building. Individuals share financial responsibility for the whole building with neighbors, which means if someone stops paying their mortgage on a cooperative, the bank can foreclose on the whole building.

E. Multi-Family Home: Multi-family homes are the least common type of residential building. They are essentially a home that has been turned into two or more units. They can be rowhouse-style or have multiple floors, and range in size from a duplex to a four-plex; anything more than four units are considered commercial. Some multi-family homes have a separate entrance for each unit, while some share the main entrance. The distinction between multi-family units and condominium is that the units can't be purchased individually; there's one owner for the whole buildings and it is legitimate to see the rent theories for those types of properties.

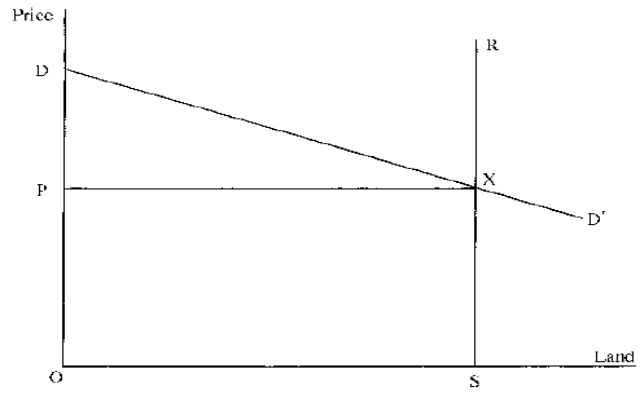
2.1.5 Theory of Rent

2.1.5.1 Ricardian Theory

The Ricardian definition of rent is that 'portion of the produce of the earth, which is paid to the landlord for the use of original and indestructible powers of the soil (Ricardo, 1821). Ricardo states that with representing of the vertical axis as price and horizontal axis as the fixed supply of land (OS as indicated below in fig 2) is vertical line (SR) and the demand for this fixed resource with a production of single product from this given supply of land is a downward sloping (DD'). The planning system may fix the amount of land available for a

particular use and may permit only this amount of land, and no more, to be used in that way. The interaction of the demand curve (DD') and supply curve (SR) at a point (x) is its equilibrium price for the given quantity (Evans, 2004).

Figure 1 The interaction of the supply curve and the demand for land



(source; Evans, 2004)

An increase in the amount of land allowed by the planning system to be used for housing can, therefore, result in a fall in the price of land and housing. Two conclusions follow from this analysis. First, the rent of land is solely the demand determined; since the supply of land is fixed variations in rents can only occur through shifts in the demand curve DD'. Thus the rent of land is high because the price of the product of land (for instance the corn) is high and not vice versa since the demand for land is derived from the demand for the product of land (corn). Second, taxes levied on rents will not affect either the rent paid or the quantity of land supplied. The latter is fixed no matter what the price paid for it and the rent paid will be OR, as determined by the demand for land, no matter what proportion of this is taken in tax. The impositions of taxes on land will neither increase rents nor alter the use of land and, second, that 'the price of land is high because the price of the product of land (corn) is high and not vice versa'(Ibid).

- **Criticism of Ricardian Theory of Rent:**

There are criticisms raised for the theory of Ricardo (Economics concepts.com, 2018). These are:

(i) No Original and Indestructible Power: Ricardo is of the opinion that rent is paid due to the original and indestructible powers of the soil. It is pointed out that there are no powers of the soil which are indestructible. As we go on cultivating a piece of land time and again, its fertility gradually diminishes. To this criticism, it is replied that there are properties of the soil, such as climate situation, sunshine, humidity, soil composition, etc., which are infected original and indestructible.

(ii) Wrong Assumption of 'No Rent Land': Ricardo assumes the existence of no-rent land. A land which just meets the cost of cultivation. The modern economists are of the opinion that if a plot of land can be put to several uses, then it does yield rent.

(iii) Rent Enters Into Price: According to Ricardo, rent does not enter into price. The modern economists are of the opinion that it does enter into price.

(iv) Wrong Assumption of Perfect Competition: Ricardo is of the opinion that perfect competition prevails between the landlord and the tenant, but in the actual world, it is imperfect competition which is the order of the day.

(v) All Lands are Equally Fertile: Ricardo assumes that rent arises due to the difference in the fertility of the soil. But the modern economists assert that if all lands are equally fertile, even then the rent will arise. The rent can arise: (a) if the product is not sufficient to meet the requirements of the people and (b) do the operation of the law of diminishing returns.

(vi) Historically Wrong: Carey and Roscher have criticized the orders of cultivation assumed by Ricardo. They are of the opinion that it is not necessary that A grade land will be cultivated first, even if it lies far away from the city. To this, it is replied by Walker that when Ricardo uses the words 'best land' he means by it the land which is superior to both infertility and in the situation.

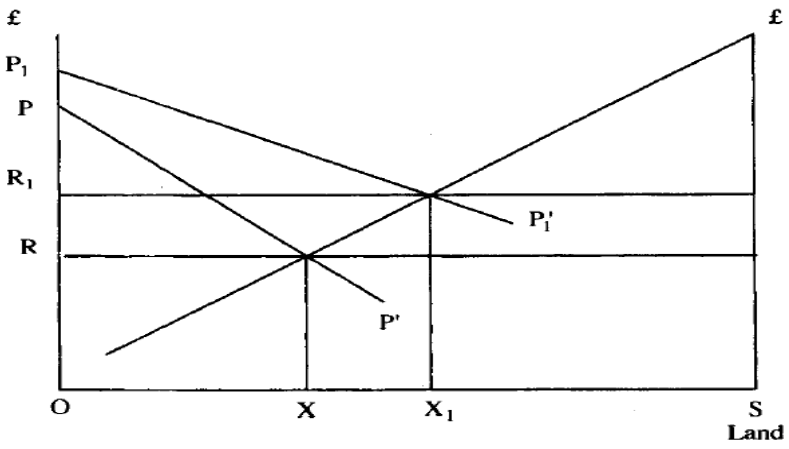
(vii) Neglect of Scarcity Principle: It is pointed out by the modem economists that the concept of rent can be easily explained with the help of the scarcity principle and so there is no need to have a separate theory of rent (Economics concepts.com, 2018).

2.1.5.2 Neoclassical rent theory

Unlike the Ricardian theory, this theory states that the rent of land for a particular use is not solely determined by the demand for the product and land taxes can affect the use of land

(Evans, 2004). Instead of all the land being used for growing one product, for instance, called corn, there are now assumed to be two uses for land, growing potatoes, and growing corn. The demand curve for potatoes is represented conventionally by a downward sloping demand curve PP', so that the amount of land used for growing potatoes is indicated along the horizontal axis from left to right, starting from the origin (0). The remaining land, the land that is not used for growing potatoes, can be used for growing corn. The amount of land used for growing corn, since the total amount of land available is given, can, therefore, be indicated in the reverse direction along the horizontal axis, from right to left, starting at S. The demand curve for land for corn can also therefore be drawn from right to left, as the line CC', sloping downwards from the right, since the smaller the amount of land used for growing corn, the smaller the amount of corn for sale, and the higher its price, and so the higher the rent paid for land on which to grow corn. Equilibrium in the land market is determined, in Figure 2, by the intersection of the two demand curves (Ibid).

Figure 2 The interaction of the two demand curves (equilibrium)



(Source: Evans, 2004, p 15)

An increase in the rent of land can cause an increase in the price of a good. As indicated from the figure above, the shift of the demand curve for some reason from PP' to P_1P_1'cause some land use shift from one product use to the other product (SX to SX1). The shift of demand curve to the right (from PP' to P_1P_1') cause not only reduction of the land size used for the other product (from SX to SX_1) but also an increase in the rent paid for land from

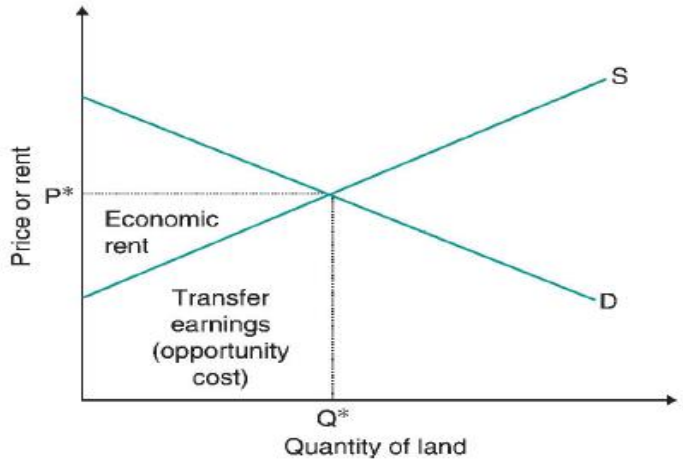
XR to X_1R_1. Now it is quite clear that the increase in the rent of land is not caused by the increase in the price of corn. Exactly the reverse is true. The price of corn has risen because the rent of land has risen. Thus the price of corn is high because the rent of land is high and not vice versa. The rent of land for a particular use is not solely determined by the demand for the product. Tax differences for different land uses also Result in a shift in the use of land from the higher to the lower taxed use with the tax being passed on in the form of a higher price for the product of the land taxed at the higher rate and so by this notation Ricardian theory dimmed to be wrong especially for different tax ratios of products (Ibid).

2.1.6 Economic Rent

"Economic rent may be defined as any payment to a unit of production which is in excess of the minimum amount necessary to keep that factor In its present occupation" (Economics Concepts.com, 2018).

The supply of land for a particular use will not be fixed (perfectly inelastic) unless, of course, it can only be used in one way because of that, in response to an increase in demand, additional supply could be bid from and surrendered by other users if the proposed change of use has a value in excess of its existing use value (Wyatt, 2013 p 9). Since the land has an alternative use, it has an opportunity cost and the supply is not perfectly inelastic. Land rent can be considered to consist of two elements: transfer earnings; a minimum sum or opportunity cost to retain land in its current use, which must be at least equal to the amount of rent that could be obtained from the most profitable alternative use, and economic rent; a payment in excess of transfer earnings that reflects the scarcity value of the land (Ibid).

Figure 3 Elastic supply and elastic demand



(Source: Wyatt, 2013)

As indicated from the above figure (3), the competition between users of land, interaction of supply and demand will lead to a supply of Q* land for this particular use, all of which will be demanded and for which the market equilibrium rent will be P*. Because supply is not perfectly elastic, some of this rent is transferred earnings and the rest is economic rent. If the rent falls below the transfer earnings then the landowner will transfer from this land use or at least decide to supply less of it (Ibid). For perfectly elastic supply, there is no economic rent and for perfectly inelastic supply there are no transfer earnings and hence the supply of land is not perfectly elastic, there will be both economic rent and transfer earnings (Economics Concepts.com, 2018).

2.1.7 Concepts of rent

In the first instance, the Rent Concept has been constantly under criticism, and different amendments to it have been suggested. Frank A. Fetter distinguishes five central concepts of rent as ‘the land, the extension or space relation, the time or long period, the exchanger's surplus, and the no-cost concepts’ (A. Fetter, I977, p 318).

The first concept of rent is that it is an income arising from the land i.e. The income derived from the ownership of land and other free gifts of nature is called rent. This concept of rent

raises an objection and there is the argument of fall in distinctions between land and the product of labor. The land is fixed (static concept) and the product of labor is not fixed (dynamics). The argument states that the rent collected is for the land (natural gift) and for improvements made by man labor and so it is not only for the natural gift of land and the other concept of rent (the extension or space relation) was rise.

The extension concept of rent states that ‘the fundamental attribute of land is its extension’ (Ibid). The right to use a piece of land gives command over a certain space (part of the earth's surface). In this concept of rent, in the rent of land, there is an element due to the environment, or to a situation, which is separable from the elements due to the "value of the soil as it was made by nature," and that due "to improvements made in it by man." The illustration which states the only inherent or original properties to be considered in the land concept is the space relations leaves the statement still undefined, for it implies that other things also are included. In the rent of land there is an element due to the environment, or to situation, which is separable from the elements due to the "value of the soil as it was made by nature," and that due "to improvements made in it by man." the increased value and income of the land is attributed to a new element, the situation. In considering time, place, form, and elemental value, it may be assumed for logical and practical purposes that any three of the four features of value are given, and then the change in the value may be attributed to the fourth Feature. The value is equally dependent on the substance, form and time, place, and the presence of wants that can be satisfied. It does not seem legitimate, in viewing the subjects statically, to speak of two classes of income from natural resources, one due to the free gifts of nature and the other to the increase in value of those gifts with social progress and leads to the other concept of rent(the time or long period concept)(Ibid).

The distinction between rent and interest may be made to turn on a difference of time. The idea recurs frequently that "for the time" the supply of any agent may be regarded as fixed, and, therefore, as not conforming to its cost of production; and in such case, the income yielded by it is of the nature of rent. It is a departure from the land concept; wherein rent is always a return for the gifts of nature, and from the extension concept, where rent is paid for one property of land. The difference between rent and interest appearing gradually as the time is lengthened within which the productive agents are considered. The income derived

from the durable sources is always rent while the income from appliances which must be renewed, is sometimes rent (in short periods), but becomes interested in a period of some length is considered (Ibid).

The fourth concept of rent is as general surplus. The word rent (consumer's surplus) is frequently used of late in reference to any surplus gain. Rent is here not connected with any particular kind of agents, nor is it any regular form of income, but it is merely a margin of advantage in an exchange. It is also defined as a surplus of pleasure to the workers above the sacrifice involved in their work. The rent concept has become one of the surpluses found throughout the whole range of industry.

The fifth concept of rent is no cost concept. In this concept, rent is the thought that it is a share of the product (or an income, or the yield of a factor) which "does not enter into the cost of production (Ibid). This definition also raises an issue which impractical in a real world and the more comprehensive concept rose which states that:

Market rent is the estimated amount for which an interest in real property should be leased on the valuation date between a willing lessor and a willing lessee on appropriate lease terms in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion' (Parker, 2016 p). It is the sum of money the tenant pays to the landlord for the use and possession of the premises. It is the Money paid by a tenant to a landlord for the use and possession of the property pursuant to a lease (F. Hinkel, 2008 p 411).

2.1.8 Types of Rent

Based on the type of property there are different agreements for the rental payments and a responsibility for operating expenses. Most commonly residential rents are stated based on a dollar amount per the Month whereas commercial properties are quoted on an annual cost per square foot basis. Through time, rental amounts will be affected by a change in the operating expense and so the rent will change. Due to this fact, there are different agreements for commercial rent (David C.Ling, Wayne R.Archer, 2005). The first one is the

flat rent agreement that states as the tenant pays a fixed amount to the landlord and is mostly for short period agreements (Ibid).

The second rental agreement is graduated rent that states the pre-specified increase in the contract rental rate. Flat or graduated rent agreements that are clearly spelled out in the lease are the simplest methods of specifying rental rates over the term of a lease. The required lease payment is solely a function of time—if you know the number of months since the inception of the lease, you know the required lease payment (Ibid).

The third type of rent is indexed rent that is a long-term lease agreement and tied changes in regularly reported index mostly with the consumer price index (CPI).

The last type of rent is percentage rent that its clause dictates the owner receive a pre-specified percentage of tenants sale (David C.Ling, Wayne R.Archer, 2005).

The main types of rent are (Economics Discussion, 2018):

A. Economic Rent: Economic rent refers to the payment made for the use of land alone. But in economics, the term rent is used in the sense of economic rent. In the words of Ricardo and other classical economists, economic rent refers to the payment for the use of land alone It is also called Economic Surplus because it emerges without any effort on the part of the landlord.

B. Gross Rent: Refers the rent which is paid for the services of land and the capital invested on it and it consists economic rent (payment made for the use of land), interest on capital invested for improvement of land and reward for the risk taken by the landlord in investing his capital.

C. Scarcity Rent: Scarcity rent refers to the price paid for the use of the homogeneous land when its supply is limited in relation to demand. If all land is homogeneous but demand for land exceeds its supply, the entire land will earn economic rent by virtue of its scarcity. In this way, rent will arise when the supply of land is inelastic. Prof. Ricardo opined that land was beneficial but it was also scarce. The productivity of land was indicative of the generosity of nature but its total supply remaining more or less fixed symbolized niggardliness of nature.

D. Differential Rent: Differential rent refers to the rent which arises due to the differences in the fertility of the land. In every country, there exists a variety of land. Some lands are more fertile and some are less fertile. When the farmers are compelled to cultivate less fertile land the owners of more fertile land get relatively more production. This surplus which arises due to the difference in fertility of the land is called the differential rent. This type of rent arises under extensive cultivation.

E. Contract Rent: Contract rent refers to that rent which is agreed upon between the landowner and the user of the land. On the basis of some contract, which may be verbal or written, contract rent may be more or less than the economic rent.

The other main point is about the measurement of the area which may be the main variable that affects the rental value of the property. Basically, there are three basic methods of measurement of buildings (Blackledge, 2009). Those are :

1. Gross external floor area (GEA): This is the area of a building measured externally at each floor level. Being an external measurement, it includes all external wall thicknesses and takes each floor into account. It is mainly used for the computation of plot ratio and other planning matters, and the estimation of building costs for the residential building.

2. Gross internal floor area (GIA): This is the area of a building measured to the internal face of the perimeter walls at each floor level and mostly is used for non-residential building costs estimation purposes and for valuation of industrial and warehouse buildings.

3. Net internal floor area (NIA): This is the area of a building measured to the internal face of the perimeter walls at each floor level and mostly applicable for shops or shops and exclude none usable areas such as toilets, toilet lobbies, bathrooms, cleaners, cupboards, lift rooms, plant rooms, stairwells and lift wells.

2.2 Value Determinant Variables

2.2.1 Monthly Rent determinant variables of residential properties

The total amount of residential rent charged to the landlord may be affected by variations in terms of total length, rent reviews and frequency, payment frequency, e.g. monthly or quarterly in advance, Incentives, responsibility and liability for repairs, insurance and management, restrictions on use and opening hours, Alienation (the right to assign or sublet the whole or part) (Andrew Baum, David Mackmin and Nick Nunnington, 2011). It is not possible to conclude as these are the only factors that affect the rental value of residential properties.

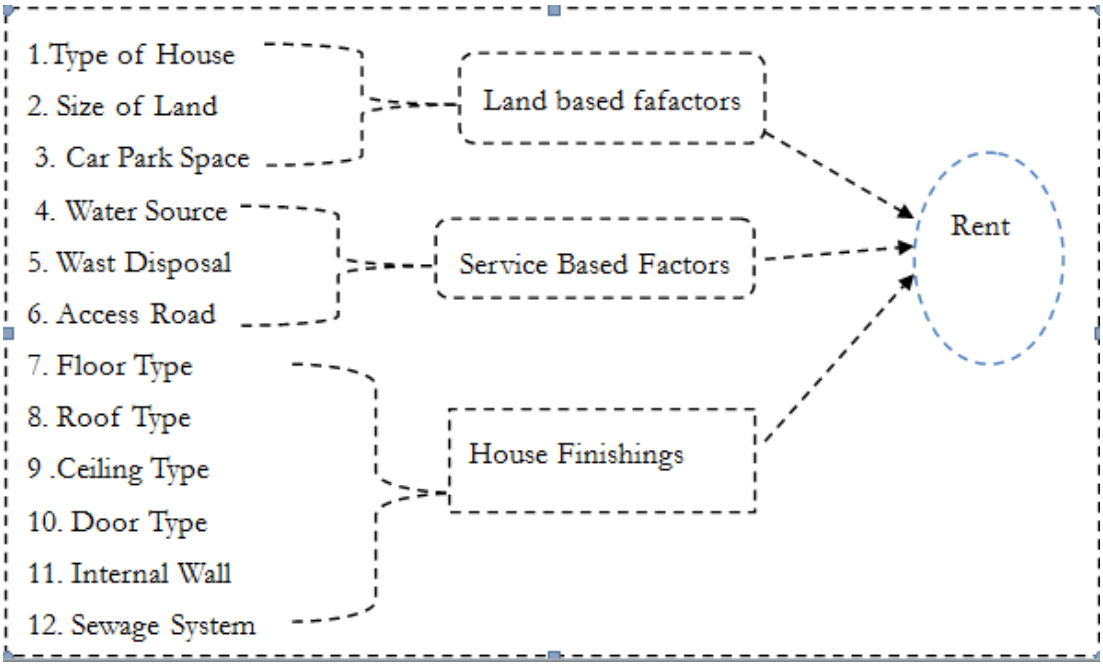
It is noted as length of the lease; presence and wording of the rent review clause; provisions regarding repair, alterations, and improvement; provisions for alienation and parting with possession; user clause; service charge provisions (in the case of a multi-let property); and any onerous provisions – such as 'keep open' clauses play a significant role in the determination of the rental values of residential properties (Sarah Sayce, Judy Smith, Richard Cooper, Piers Venmore-Rowland, 2006).

All rents are a function of location, age, quality and condition of premises and rent premiums (William B.Brueggman, Jeffery D.Fisher, 2002). Apartments have an access of near pool, amenities, parking, better views, and higher floors with elevators have rent premiums and the reverse (if it has no accessed) is rental discounts (Ibid). A premium is a consideration by a tenant to a landlord for the grant or renewal of a lease on favorable terms. It might be paid by the tenant to compensate the landlord for offering an incentive (for instance a discount in the form of a profit rent for each review of rent) (Wyatt, 2013). The consideration is usually financial but can be no pecuniary such as the carrying out of repairs or improvements. The benefit of a premium to a landlord is a cash-flow where a capital sum is received early and the benefit for the tenant will be an immediate profit rent (Ibid). A premium incurred for those betterments implies as the rent is affected by these variables.

There are different studies conducted in the identification of determinant of residential rental values in the world. For instance, the study conducted in M.I Wushishi Housing Estate,

Minna, Niger - State identified the key determinants of residential rental value as; Access Road, Land Size, Internal Wall, Waste disposal, Water source, and Sewage System. The study deals with twelve variables within three categories as a type of house, size of land and car park space with land-based factors, water source, waste disposal and access road with a service-based factor, floor type, roof type, ceiling type, door type, internal wall and sewage system as house finishing's factor. Contrary to the conventions, the result shows that property owners should rather focus on service-based factors and the internal wall if they desire increased rental income from their properties, rather than waste money on the house finishes like floor tiles, ceiling type, doors or roofing sheet (Kemiki O. A., Odumosu J. O., Popoola N. I., Ogungbenro M. T., Falana F. F., 2015).

Figure 4 Factors affecting rents of a property



Source: (Kemiki O. A.*, Odumosu J. O., Popoola N. I., Ogungbenro M. T., Falana F. F., 2015)

Based on the result of the study, six variables significantly affect the rent of properties. These are available and well tarred access road, the size of the land upon which the property is situated (probable reason for this could include the allowance of an easement, convenience and recreation ground for the tenant), a well painted and decorated internal

Wall, a well-planned means of waste disposal, a hygienic and constant water source and a good and decent Sewage System.

The study conducted in Ghana classify main factors of the rent determinant as location, availability of facility (toilet and bathroom), availability of amenities (water and electricity) and a closeness to the workplace and the result of the study indicates that the impact of the locational characteristics on residential rental prices is statistically significant. The impact of apartment characteristics such as the number of bedrooms, the availability of amenities (water and electricity supply), availability of facilities (toilet and bathroom) is statistically significant in determining rental charges. Sharing of apartment facilities also has a significant impact on residential rental prices. The closeness of an apartment to the place of work is the top priority of most households in considering renting an apartment (Ivy Drafor Amenyah, Ernest Afenyi Fletcher, 2013).

The other study conducted by Bayode Olujimi in Akure (Nigeria) revealed that the relationships that exist among the infrastructural facilities (electricity, water, access road, toilet, kitchen, drainage channel, wall-fence, burglary proof, waste disposal facility, day watch-security services, and night watch-security services) in residential properties are very relevant in the determination of the rental value of these properties in Akure. Bayode Olujimi uses multiple regression models to determine the interrelationships between each of the isolated infrastructures (i.e. water, electricity, waste disposal facility, access road, and security enhancing facilities) which are the independent variables; and the rental value of the residential property (dependent variable) (Ibid). The regression result according to the result of Bayode Olujimi's study indicated in the table below.

Table 1 Estimates Between Annual Rental Values and Infrastructural Facility Variables.

Code	Variables	Regression Coefficient	Beta Coefficient	Absolute t-Value	Sig
	Constant	1.851		2.363	0.019
ELEC	Electricity	0.384	0.031	0.464	0.643
WAT	Water	0.299	0.080	1.211	0.228
ACC	Access Rd	-0.299	-0.067	-1.033	0.303
BUG	Burglary Proof	0.795	0.234	3.447	0.001*
RDF	Refuse Disposal	0.134	0.043	0.611	0.542
TO	Toilet	-4.229E-02	-0.007	-0.099	0.921
KT	Kitchen	-5.882E-02	-0.009	-0.124	0.902
DC	Drainage Channel	0.194	0.063	0.969	0.334
WAF	Wall-Fence	1.229	0.400	5.505	0.000*
DAW	Daywatch Security	0.164	0.034	0.489	0.625
NIW	Nightwatch Sec.	4.834-02	0.014	0.191	0.848
	R = 0.576				
	R^2 = 0.332				
	R^2 Adjusted = 0.291				
	FO.05 = 8.047				
	N = 189				

(Source: Olujimi, 2010)

From the empirical results of the multiple regression model's of Bayode Olujimi, wall fence is the most determining variable of rental value. This is followed by the installation of burglary proof in the building. Next to this in order of influence are water, functional drainage channel, availability of a refuse disposal facility, Daywatch security services, access road, toilet facility, and kitchen respectively. As the study indicates Over 32 percent of the decisions for the determination of a rental value of residential properties in Akure are based on available infrastructure facilities (Olujimi, 2010).

The other study investigated on the factors determining house rental rates at the university environment in Nigeria indicates that age, tenement rate, number of houses built in the university environment and proximity to the university cause variation in house rent. In addition, it was found that houses built within the university area have higher rents than the ones built outside the university area. (Sikiru Jimoh Babalola, Abdulrazaq Isa Umar, Luqman Adedamola Sulaiman, 2013).

From the multiple regression model results, it was found that four (4) parameters are statistically significant plus the constant. Out of these, two (2) parameters (constant inclusive) are found to be statistically significant at one percent (1%) level of significance. AGE and TRA were found to be statistically significant at five percent (5%) level of significance at the second level. However, there is no sufficient evidence to show that the parameters of WAT and POW are statistically significant with their p-values 0.30143 and 0.84162 (Sikiru Jimoh Babalola, Abdulrazaq Isa Umar, Luqman Adedamola Sulaiman, 2013).

2.2.2 Property Valuation

2.2.2.1 Meaning of Property Valuation

Value is often confused with Cost and many laymen assume they are the same thing. For instance, people may erroneously believe that if they have just purchased an item, then the price they paid, or cost, would represent the market value of that item at the time (Blackledge, 2009).

Property valuation is the process of forming an opinion of value-in-exchange under certain assumptions (Wyatt, 2013). Assumptions may need to be added to the basis when estimating the market value of certain types of property (Ibid). A price may be determined on the market, but this may not always equate with the valuation of the property in the market. Problems of the difference between the price and valuation arise because the marketplace for the property is decentralized and fragmented (Isaac, 2002).

Scholars define the cost, price, and value in different ways. A price paid might not represent that property's market value. Price is used to describe the amount requested, offered or paid for a property, whereas Value is an estimate of the most likely price to be concluded at a specific point in time by buyers and sellers of a property that is assumed to be available for purchase and the cost refers to the expense of producing it (constructing a building on a piece of land, for example) (Wyatt, 2007).

Valuations are required for many purposes relating to the development and subsequent occupation and ownership of property. The purpose for which the valuation is required and the type of property that is to be valued will determine the nature of the valuation

instructions, including the techniques employed and the basis on which value is to be estimated (Wyatt, 2007). Real estate certainly meets the criteria that any good or service must possess to have value in economic terms, which are (Blackledge, 2009):

• Utility – usefulness to potential buyers; the greater its potential for use for different purposes, the greater it's utility;

• Scarcity – this does not mean that it literally has to be very scarce, merely that the supply is limited and insufficient to meet total demand;

• Demand – this has to be effective so that there are potential buyers who wish and are able to purchase;

• Transferability – ownership has to be able to be transferred otherwise it cannot be sold. There are many reasons for valuing property, such as (Ibid):

- To buy or sell;
- To let or take a lease or agree on a rent review;
- To assess tax or business rates payable;
- To obtain a compensation payment
- To borrow money using the property as 'security';
- To show its value as a fixed asset on a company balance sheet;
- To develop or redevelop.

2.2.2.2 Types of value

There are many types of property values stated and among these some include, but are not limited to (Blackledge, 2009):

A. Market Value: Market value is the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion (Parker, 2016).

B. Compulsory Purchase Value: The Government has the legal power to compulsorily acquire property for specific purposes and is a value for this purpose (Wyatt, 2013).

C. Investment value: Investment value is the value a particular investor places on a property. It is useful to buyers and sellers for making investment decisions (David Ling, Wayne Archer, 2018).

D. Rental value: On letting a property or taking a lease or tenancy, rental value is required for the fact that the value of the property, especially for income producing property is the discounted projected incomes acquired from the rent (Isaac, 2002).

E. Going concern value: The appraisal of a "going concern" property is difficult because it crosses over into the business valuation world. While the real property may be a significant or even the dominant asset, in most instances the market value of the "going concern" is associated with its net income. Many real property appraisers are not trained or prepared to appraise a "going concern" (Horizon Village Realty & Appraisal, 2007)

F. Assessed value: The tax assessor appraises all taxable properties in a jurisdiction for property tax assessment. The value for taxation, or assessed value, is always related to market value; some states specify that the assessed value must be calculated as a certain percentage of market value and multiplied by the tax rate to calculate the tax (David Ling, Wayne Archer, 2018).

G. Mortgage value: Real estate is often the form of security used for secured lending. Before advancing the loan funds, the lender will need to be assured the value of the property concerned offers sufficient security for the proposed loan and will instruct a valuer to report on the property accordingly (Blackledge, 2009).

2.2.2.3 Methods of Property Valuation

Estimating the market value of a property is needed for a different purpose. There are three conventional approaches used to estimate the market value of real estate: the income approach, the sales comparison approach, and the cost approach. One or more valuation approaches may be used in order to arrive at the valuation defined by the appropriate basis

of value (Parker, 2016). Generally, al1 three approaches are used in a formal appraisal (David Ling, Wayne Archer, 2018). The three known traditional approaches to valuation are stated hereinbelow.

A. Cost Approach

The cost approach to valuation is based on the economic principle of substitution and assumes the market value of a new building is similar to the cost of constructing it today. For an older property, the appraiser identifies and measures reductions(accrued depreciation) in the value from today's construction cost (David Ling, Wayne Archer, 2018). The cost approach provides an indication of value using the economic principle that a buyer will pay no more for an asset than the cost to obtain an asset of equal utility, whether by purchase or by construction (Parker, 2016). The cost approach is most applicable to 'specialized property', such as public buildings (town halls, museums and so forth) or major operating facilities (car manufacturing plants, airports and so forth)(Ibid).

B. Sales Comparision approach

The sales comparison approach is a general method for appraising all types of properties and involves comparing the subject property with comparable properties. The market approach (sales comparison) provides an indication of value by comparing the subject asset with identical or similar assets for which price information is available (Parker, 2016). The economic principle of substitution implies that the value of the subject property is determined by the price that market participants would pay to acquire a substitute property of similar quality, utility, and desirability.

C. Income Approach

The income approach provides an indication of value by converting future cash flows to a single current capital value (Parker, 2016). The income approach is based on the premise that a property's market value is a function of the income it is expected to produce, appraisers first estimate the net income that a typical investor would be forecasting today for the subject property over the expected holding period. It is the anticipation that the owner will receive cash flows from the property in the form of income from rental operations and price appreciation. The current value of a property is, therefore, a function of the income

stream it is expected to produce. (David Ling, Wayne Archer, 2018). There are many models or techniques available to the appraiser for income capitalization. However, these models can be divided into two categories: (1) direct capitalization models and (2) discounted cash flow models(Ibid). The international valuation standards (IVSs) set cite option pricing models as the third valuation methods falling under the income approach (Parker, 2016).

D. Conciliation

The value of a single property estimated by three approaches may not be the same and there is a need for bringing those estimates into one (reconciliation). Results of the three approaches are correlated to each the other. Each opinion is weighted in the light of the accuracy, the importance and the relevancy of the data on which it is based and these final opinions are compared and balanced (Fischer, 2002).

2.2.2.4 Procedure of Property Valuation

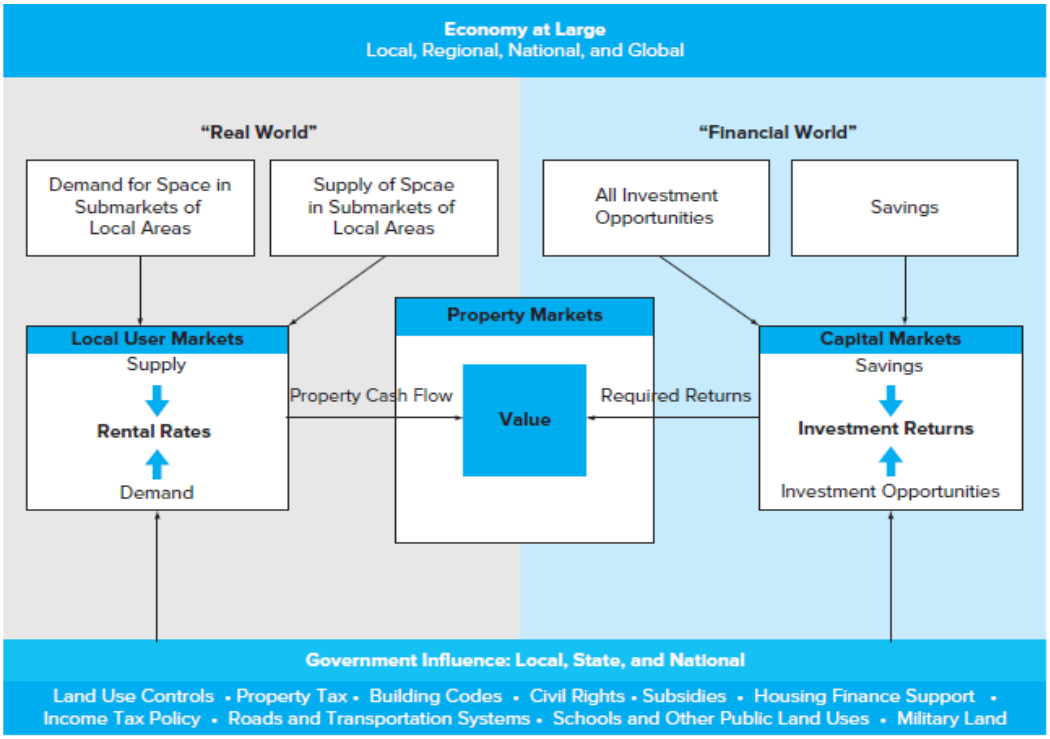
The Uniform Standards of Professional Appraisal Practice (USPAP) imposes both ethical obligations and minimum appraisal standards that must be followed by all professional Appraisers. To comply with the Uniform Standards of Professional Appraisal Practice (USPAP), certified fee appraisers must follow an established framework or process. As outlined in figure 5 below , this process consists of (1) identifying the appraisal problem; (2) determining the required scope of work; (3) collecting data and describing property; (4) data analysis, including market analysis and highest and best use analysis; (5) determining the value of the land; (6) applying the valuation approaches; (7) reconciling the indicated values that result from the multiple approaches to valuation; and (8) preparing the appraisal report for submission to the client (David Ling, Wayne Archer, 2018).

2.2.2.5 Factors that affect property value

The value-influencing characteristics of a property must be identified to enable a valuation to be undertaken (Wyatt, 2007). Wyatt divided factors as property specific factors and market-related factors. The principal physical qualities (property specific factors) of the building are size, age, condition, external appearance (including aspect and visibility),

internal specification and configuration. These qualities affect the performance of the building to varying degrees depending on the use to which it is put (Ibid). The principal macroeconomic influences (market-related factors) on property values include the national output (measured using GDP), inflation, household disposable income, consumer spending and, retail sales, employment, construction activity, net household formation, production costs (including wage levels) and the cost and availability of finance (Ibid). The value determinant variables at the sector level can be categorized as local user markets, capital markets and property markets and this interaction are designated in the diagram below.

Figure 5 The Interaction of Three Value-Determining Sectors



(Source: David Ling, Wayne Archer, 2018)

In local user markets, households and firms compete for the currently available supply of locations and space. Capital markets provide financial resources (debt and equity) necessary for the development and acquisition of real estate assets. The interaction between the user and capital markets, the expected stream of rental operating income for a particular property is capitalized into value through "discounting," which is the process of converting expected

future cash flows into present value. Discounting incorporates the opportunity cost of waiting for the uncertain cash flows. Each market participant bids for properties based on his or her individual assessment of value. The prices current owners are willing to accept reflect each seller's assessment of value. This continuous bidding process determines market values and transaction prices in local property markets. The government also influence the local user market and the capital market through regulation (Ibid).

2.2.2.6 Real Estate Market

Real estate transactions do not occur in a single universal market. The real estate market consists of two markets: the market for physical space (space market) and the market for the financial asset (Asset market) (William B.Brueggman, Jeffery D.Fisher, 2002). Real estate assets and markets are unique when compared to other goods. The two primary characteristics of real estate assets are their heterogeneity and immobility. Because of these two factors, the market for buying, selling, and leasing real estate tends to be illiquid, localized, and highly segmented, with privately negotiated transactions and high transaction costs (David Ling, Wayne Archer, 2018).

Real estate tends to be heterogeneous, meaning that each property has unique features. Age, building design, and especially location combine to give each property distinctive characteristics. Even in residential neighborhoods with very similar houses, the locations differ. Corner lots have different locational features than interior lots; their access to parks and transportation routes may differ, and the traffic patterns within the neighborhood create differences. Real estate is immobile and access to school, shopping, entertainment, and places of employment for instance for residential property affect the value. Real estate markets tend to be localized. By this, we mean that the potential users of a property, and competing sites, generally lie within a short distance of each other (Ibid).

2.3 Lessons Learnt

The real estate space market is a prominent market which the tenant and the owner is exchanged rights within agreements and the market rent is the estimated amount for which an interest in real property should be leased on the valuation date between a willing lessor

and a willing lessee on appropriate lease terms in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.

The value for both real estate space and real estate asset were affected by the market related factors (include national output (measured using GDP), inflation, household disposable income, consumer spending and retail sales, employment, construction activity, net household formation, production costs (including wage levels) and the cost and availability of finance) and property specific factors(size, age, condition, external appearance (including aspect and visibility), internal specification and configuration).

A kinds of literature indicates that the total amount of residential rent charged to the proprietor may be affected by variations in terms of total length, rent reviews and frequency, payment frequency, e.g. monthly or quarterly in advance, Incentives, responsibility and liability for repairs, insurance and management, restrictions on use and opening hours, Alienation (the right to assign or sublet the whole or part), type of house, size of land and car park space, water source, waste disposal and access road, floor type, roof type, ceiling type, door type, internal wall and sewage system location, availability of facility (toilet and bathroom), availability of amenities (water and electricity) and a closeness to the workplace.

Table 2 Summary of reviewed rent determinant variables

Review	Auther	Rent determinant variables
Theoretical Review	Andrew Baum, David Mackmin, and Nick Nunnington, 2011	• Length of terms, Rent reviews and frequency, Payment frequency, Liability for repair, insurance, and management, Restrictions on use and opening hours
	Sarah Sayce, Judy Smith, Richard Cooper, Piers Venmore-Rowland, 2006	• Service charge provisions, Alienation (sublet), provisions regarding repair, alterations, and improvement
	William B.Brueggman, Jeffery D.Fisher, 2002	• location, age, quality and condition of premises, Access of near pool, Amenities, parking, better views, and higher floors with elevators
Empirical	Kemiki O. A., Odumosu J. O.,	• Access Road, Land Size, Internal Wall, Waste

Review	Popoola N. I., Ogungbenro M. T., Falana F. F., 2015	disposal, Water source and, Sewage System
	Ivy Drafor Amenyah, Ernest Afenyi Fletcher, 2013	• water and electricity supply, availability of facilities (toilet and bathroom
	Olujimi, 2010	• Electricity, water, access road, toilet, kitchen, drainage channel, wall-fence, burglary proof, waste disposal facility, day watch-security services, and night watch-security services
	Sikiru Jimoh Babalola, Abdulrazaq Isa Umar, Luqman Adedamola Sulaiman, 2013	• Age, tenement rate, number of houses built in the university environment and proximity to the university

(Source: Compiled by the author)

Definition of Relevant Terms

Government house(property) -Is a house which is confiscated by proclamation number 47/1967 E.C and rented over 100 birrs or a house constructed by the federal government or by any means owned by the government and rented for residential, commercial or any other service.

Private property- mean any tangible or intangible product which has value and is produced by the labour, creativity, enterprise or capital of an individual citizen, associations which enjoy juridical personality under the law, or in appropriate circumstances, by communities specifically empowered by law to own property in common.

CHAPTER THREE

3. Research Methodology

Under this chapter, the researcher briefly states how the case study areas have been selected, what data have been collected and how the data has been collected, why particular technique of analyzing data has been used and adopted.

3.1 Site Location and Selection

Addis Ababa is located at the latitude of 09°02’N and longitude of 38°42'. The modern city was founded in 1886, by Emperor Menelik II, at the site of a hot spring chosen by Empress Taytu Betul. Menelik, initially a King of the Shewa province, had found Mount Entoto a useful base for military operations in the south of his realm. Entoto, situated on a high tableland, was found to be unsatisfactory because of extreme cold and a shortage of firewood. The city is located at the southern foot of Mount Entoto, in the Entoto Mountains; at an elevation of about 8000 feet (2440 meters) above sea level, on a plateau that is crossed by numerous streams and surrounded by hills and mountains, in the geographic center of the country. It comprises 6 zones and 28 woredas. The city is divided into 328 dwelling associations (Kebeles) of which 305 are urban and 23 rural (Government of Ethiopia, 2018). Addis Ababa has ten sub cities and the total population according to the 2007 census was 2,739,551. The population size of Addis Ababa has grown from 443,728 in 1961 to 683,530 in 1971, (167,315) in 1978, (1,423,111) in 1984, (2, 112, 373), in 1994 and to its 2007 census value (Central Statistical Agency, 2007). According to the Federal Democratic Republic of Ethiopia Central Statistical Agency projection, the population of Addis Ababa was 3,434,000 at 2017 (Central Statistical Agency, 2013). This rapidly increasing population in urban areas with deficit of housing especially in the capital city of Ethiopia needs adequate real estate asset and real estate space policy for the long run and belong this there are a total of sixteen thousand five hundred houses administered by the federal housing corporation bring out for an auction for valuator to value those properties and so the site is selected for analysis the rent comparison of government and private residential apartments.

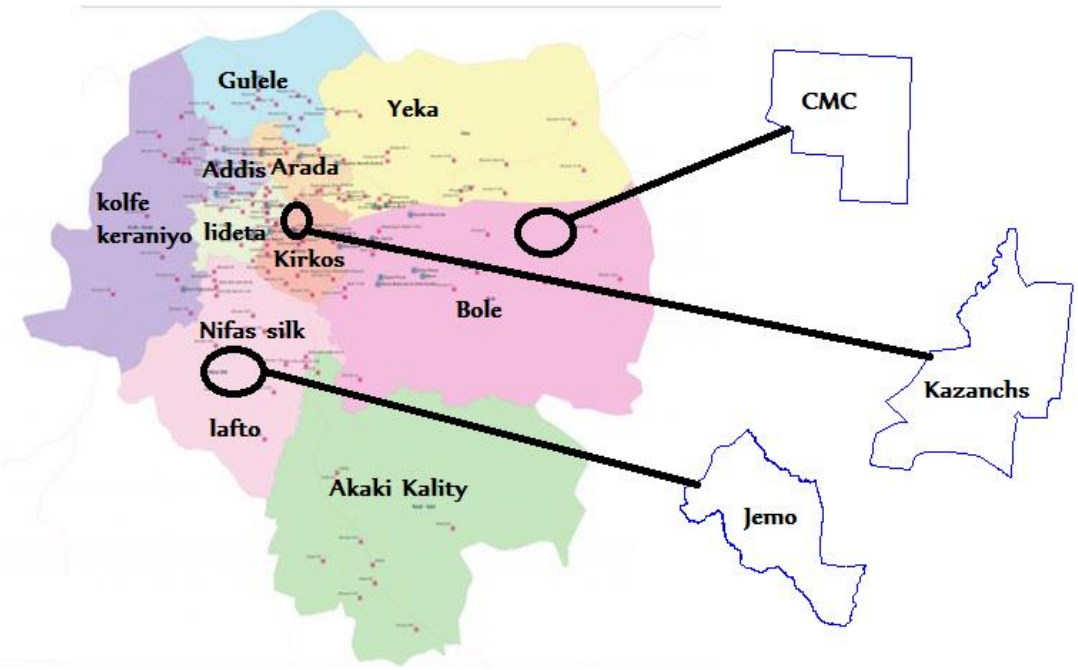


Figure 6 Geographical location of case study areas

Three case study areas (CMC, Kazanchs, and Jemo) were purposefully selected because of that first, there are concentrated comparables in those case study areas, Second for the purpose to handle location difference and its effect on the rent of residential apartments and last there is the completion of construction in these case study areas. There are three site levels set by the government in Addis Ababa and accordingly CMC, Kazanchs and Jemo are first, second and third level sites respectively and it is to include these differences that three case study areas were selected.

3.2 Sampling techniques and population

The population of the study is the total number of government administered residential apartments and private residential apartments in Addis Ababa. There are a total number of 4730 apartments administered by the federal housing corporation in Addis Ababa and Diredawa of those 101 apartments are in Diredawa and 4629 exists in Addis Ababa. The researcher prefers to use a case study method and document exploration method of data collection.

The case study areas of the study are CMC, Kazanchis and Jemo sites. From the CMC site, there are three types of private apartments. The first one is high rise apartments constructed by Tsehay real estate P.l.c.. housing units from this types has an access to lift and has relatively better views and security. The other category is housing units constructed by Sunshine real estate P.l.c. Thes types of houses are not a high rise like Tsehay real estate. The last type of housing units is from apartments that are constructed by cooperative individuals who are organized by the government and given a common site for construction. These types of apartments have a total of 16 housing units with ground plus four (G+4) floor levels. The second site is Kazanchs from which the Ayat real estate is included. From this site, there are medium rise buildings (G+8) and three apartments are included. The last site (Jemo), has a lower rise (G+4) apartments constructed by Nasew real estate Plc.

The target areas (CMC, Kazanchis, and Jemo) were selected purposefully and detail case study in these areas is conducted. There are concentrated comparable government and private residential apartments in the case study areas and the areas are selected purposefully. The study is conducted on purposefully selected 164 private rented residential housing units (53 apartments) at each floor level with a different number of bedrooms (from which 26 are at Jemo, 32 are at Kazanchis and 106 are at CMC) and 150 government- administered residential housing units (44 apartments). It is to encompass all divergent floor level, variations in the number of bedroom and bathroom, better view, access to parking and type of external wall finish that has relevant variations for which purposefully samples were taken. Since housing units are different from each other, data are collected carefully to encompass all types of variables and there was not in advance set up for selections and is decided on the filled. All private residential apartments are not included for the reason that some are not rented (vacant), some are occupied by the owner and some are still not sold and managed by the real estate developer and opened for sale.

The structured questionnaire was distributed to the tenant and other key people (rent valuators) in federal housing corporation and at the end, the questionnaires were collected. Value estimation procedural documents used in Federal Housing Corporation were examined and interpreted.

3.3 Data Source, type and collection methods

For this study, the researcher used both primary and secondary qualitative and quantitative cross-sectional data to increase the reliability and availability of the research. The primary data is collected by the questionnaire method of data collection from the tenants and professional experts (from federal housing corporation), and direct observations at the case study areas. Structured questions were prepared and tenants were asked to fill the structured questions and the questionnaires were collected. Secondary data was collected from secondary data sources like from similar studies, books, government reports, none governmental organization reports, and other related laws and regulations.

3.4 Data Analysis

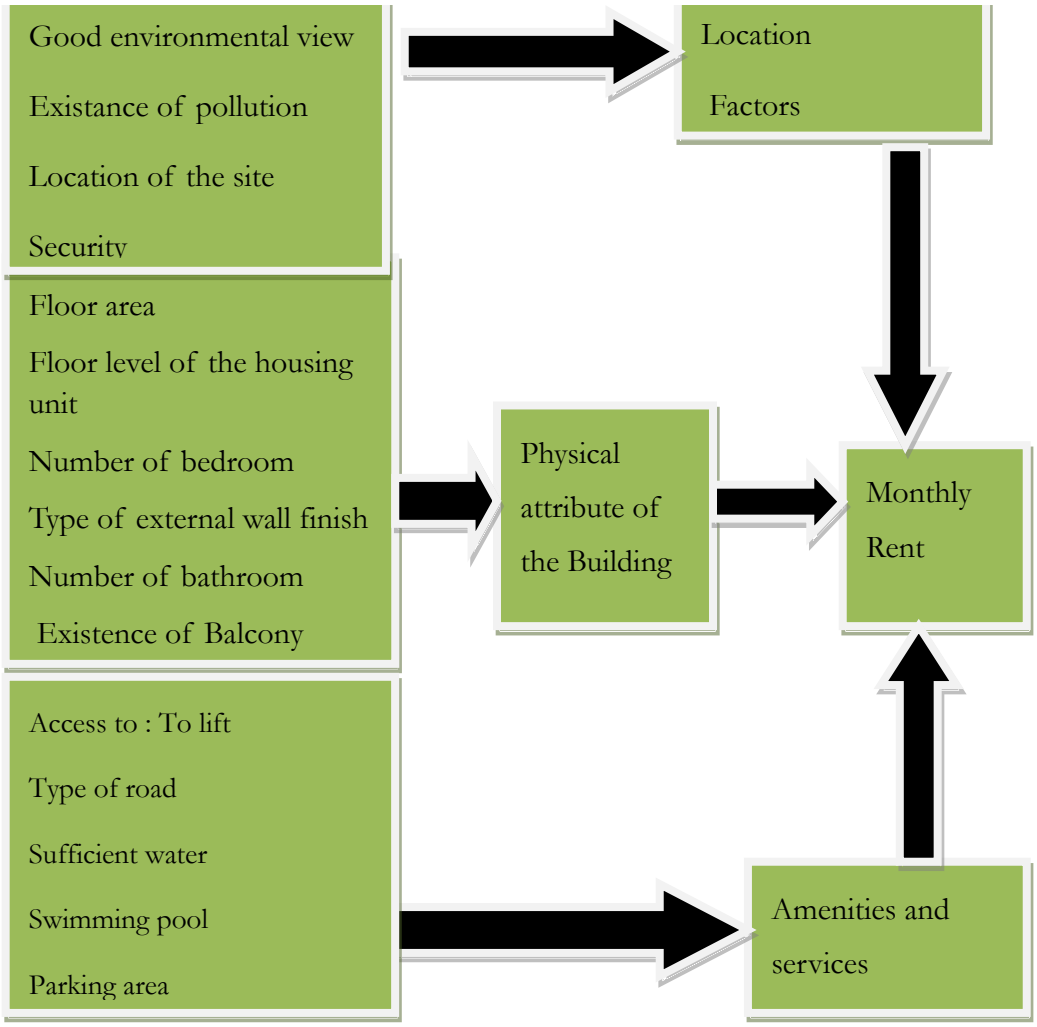
The quantitative data were collected and edited, coded, tabulated and finally disseminate the result. The collected data were analyzed by using measures of percentage and ratio, methods and analyzed through multiple regression using SPSS and Stata depending upon the data type and the qualitative data were interpreted, discussed, analyzed and summarized analytically. Kinds of Literature indicates as there are many variables that affect the monthly rent (dependent variable) of the property and for this study, 15 independent variables were statistically tested to identify their contribution for the rental value of private residential apartments. Thes are floor area, number of bedrooms, access to bath, access to the parking area, floor level, access to balcony, access to swimming pool, access to lift, environmental pollution, access to road, the existence of pollution ,access to sufficient water, good environmental view, location of the site and security of the apartment. These variables were selected based on the nature and type of housing types. For instance, apartments have almost the same sewerage system and due to this reason sewerage is excluded.

3.4.1 Analytical Framework

According to the relevant literature of empirical studies, there are substantial lists of factors that affect the market rent for residential properties and all of these can be categorized as the Physical attribute of the building, location factors and amenities, and services. There are a

couple of variables that affect monthly rents of residential properties but according to the nature and type of apartments, some of the variables indicated as below (figure7) are selected to test there significance. Thes variables are selected based on the nature and type of apartments. For instance block work has a significant effect on monthly rents as other studies result. But block work is the same(HCB) for apartments and in this case, it is not considered and instead external wall finish which is different for different real estates is considered. Similarly, More other variables are excluded based on the type and nature of the property.

Figure 7 Analytical Framework



(Source: Compiled by the author)

3.4.2 Dependent and Independent Variables

From 15 selected independent variables that determine the dependent variable monthly rent, floor area and rent are scale variables. The number of the bedroom and the bathroom are ordinal variables. The floor level is represented by the number of the floor level which the housing unit exists and is the nominal variable. The remaining variables are nominal variables. Access to balcony, parking area, access to lift, Swimming pool, good environmental view, access to sufficient water, security of the compound and existence of pollution and the location of the site are nominal variables and represented at SPSS statistical tool as:

1. Balcony

1.00 = "There is an access to the balcony"

.00 = "There is no access to the balcony"

2. Security for the compound

1.00 = "the compound is secured"

.00 = " the compound is not secured "

3. Access to the parking area

1.00 = "there is an access to the parking area"

0.00 = "there is no access to the parking area"

4. Access to road

.00 = "Access of natural ground road"

1.0 = "Access of Gravel type of road"

2.0 "Access of Asphalt type of road"

5. Access to lift

0.0 = "There is no access to the lift"

1.0 "There is an access to the lift"

6. External wall finish

1.0 = "quartz type of external wall finish "

2.0 ="granite paint type of external wall finish "

7. Environmental pollution

1.0 ="there is no pollution around the area"

2.0 "there is pollution around the area"

8. Swimming pool

1.0 = "There is no access to the swimming pool"

2.0 = "There is an access to the swimming pool"

9. Location of the housing unit

1.0 = "CMC site"

2.0 ="Kazanchis site"

3.0 ="Jemo site"

10. Access to sufficient water

.00 = "there is no sufficient access to water"

1 = "there is sufficient access to water"

11. Good environmental view

.00 = "there is no good environmental view"

1.00 = "there is Good environmental view"

After the variables were represented, the data were analyzed by using linear multiple regression by using SPSS statistical tool. The regression analysis is being the right method of analysis when the data fulfills the Linear relationship (distribution Graph), Multivariate normality (Shapiro Wilk test), No or little multicollinearity (VIF), No auto-correlation (Durbin Watson), Homoscedasticity (Scatterplot) and all are tested and for those that didn't meet, corrections were applied. On the other hand, government administered residential apartments rent estimation procedures were described and finally some variables pointed out and tested at a multiple regression through SPSS statistical tool.

3.4.3 The Theoretical Model

When there are two or more than two independent variables, the analysis concerning relationship is known as multiple correlations and the equation describing such a relationship is the multiple regression equation (Kothari, 2004). Based on the assessed literature, the following preliminary model for this study is developed to private residential apartments. It is clear that the government-administered residential apartments monthly rent is estimated by the regulation and it was not impressive to develop a model. From the procedures, the variables are taken and tested by the regression model to see their role on monthly rent and it is for this fact that the preliminary model was developed for private residential apartments only as the following.

Monthly Rent= $F(C + a_1A + a_2AB + a_3SC + a_4AP + a_5NB + a_6 RT + a_7AL + a_8 EWF + a_9SL + a_{10} BA + a_{11}GV + a_{12}WS + a_{13}PO + a_{14} FL + a_{15}SP + \mu i)$, where

C=Constant

a_1-a_{15} =Coefficients

A=Area of the housing unit

NB=Number of bedroom

AB= Access to balcony

RT=Access to road type

SC=Security of the compound

AL=Access to lift

AP=Access to the parking area

TWF=Type of external wall finish

SL=Site location

BA=number of Bathroom

FL=Floor level of the housing unit

GV=Good environmental view

PO=Environmental pollution

SP=Access to the swimming pool

μi=Error term

WS=Access to water supply

CHAPTER FOUR

4. Result and Discussion

Introduction

In this chapter, the two basic data's were analyzed. One group of data that were collected from the government residential apartments was analyzed. Tenants rented from the federally administered apartments has the responsibility to pay monthly rent for each month and to cover utility costs for electricity, telephone and water costs. The maintenance cost for the property is covered by the government. If the maintenance cost incurred is greater than 60 months income of the subject property, the rental value was revised and estimated. This is for the reason that if the maintenance cost is greater than the sixty-month income of the property, the level of the property may shift to better levels and this causes a variation in the rental value of the property. The right of the tenant is not transferable to the spouses. Spouses have no rental right for the property if the tenant who take the initial agreement withdraw the agreement. The rental value of the property is estimated by civil engineers who follow the procedure and perform the value based on the regulation number 42/2007 EC of proclamation 555/2000". The tenant screening is conducted by a committee which follows some procedures like position and experience (Council of Ministers, 2014/15).

The other one is the data collected from tenants who rent private apartments. The rent variations were described by using the statistical descriptions. The rent determining variables of private residential apartments were analyzed and finally, the factors that cause the difference in rent value for the government and private residential apartments were examined.

4.1 General descriptions of rent value determination of the government properties

The rent value of government properties was determined based on "the federally administered houses rent value estimation regulation number 42/2007 of proclamation 555/2000". The regulation for rent value determination of residential government administered properties is revised within ten years interval and for commercial properties is revised within five years interval. There are five types of rental values stated under the regulation. Those are:

- ✓ Commercial rental value
- ✓ Residential rental value
- ✓ For foreigner's rental value (Diplomatic)
- ✓ Rent for compensating maintenance cost
- ✓ Rent value for notice, dish, and others

For estimation of rent value, the measurements were taken at the internal perimeter of the floor. It did not include common use corridors, steps, lift areas, and other common use areas. Area for Balcony, parking, and basement were taken 1/3, 1/5 and 2/3 of the area of the main floor and finally added to the area of the main floor for find the total area of the property. But if the basement is between 1.6 and 1.8, the area is taken as 1/3 of the main floor and if it is below 1.6, its service is considered as small and did not consider.

In general, the government property rent value determining variables are categorized as:

A. Quality of property to be rented
B. The internal area of property
C. Tenant type (as local and diplomatic)
D. Site level

4.2 Government residential properties rent value estimation procedure

The federal housing corporation uses the bid auction price to estimate rental value of residential properties. The bid price is 20 ETB per meter square for local tenants and the final result is determined based on the area, variables considered for ranking the site and the subject property. The bid price for properties rented for foreign diplomats is 10 US dollar per square meter. There are three levels or ranks for the site and as the property is far from areas that are better for the living, rent will decrease and vice-versa. Rent values for properties that exist inside first level sites are the amount addressed by the formula and for second and third levels sites rent will decrease by 15% and 30% of the rent value respectively (Council of Ministers, 2014/15).

4.2.1 Illegal improvements constructed by the tenant

For tenants who construct services, kitchens and other improvements before the enactment of regulation number 41/2007 without taking an agreement with the federal housing corporation, if the existence of such improvement is assured by the federal housing corporation branches as it exists, the area used to calculate is 2/3 of the measured area multiplied by 20 ETB with deductions for the level of the site and the level of the improvement. There is no reason set out why 2/3 of the area is used and it deemed that the tenant incurs the cost for construction and is to compensate. For properties rented for foreign diplomacy keeping other things the same, the monthly rent is 10 American dollar per meter square.

For properties which its base is slid due to natural hazards and basic cracks of the wall, structural change any other damage, if the cost of maintenance is greater than the rent of 60 months of the subject property, then the rent is revised and estimated through the new renting procedure applicable on the time.

For apartment residents, there is a system in a share of one dish for money residents and the cost is covered by those users. For security and safety of the property, individual use of the dish is not allowed.

4.3 Rent and Area of Government Properties

As the area increase, rent increase at a decreasing rate for government property. The calculation of rent for different ranges of areas is indicated as below (Council of Ministers, 2014/15)

Table 3 Calculation of monthly rent in relation to the area

S no	Area	Formula for monthly rent
1	<=30	= floor Area*20- Site and Property level reduction
2	Between 31 and 60	=600+(floor area- 30)*5- Site and Property level reduction
3	Between 61 and 80	= 800+(floor area- 40)*7- Site and Property level reduction
4	Between 81 and 100	1080+(floor area-80)*5- Site and Property level reduction
5	Between 101 and 160	1650+(floor area-100)*7- Site and Property level reduction
6	Above 161m^2	2070+(floor area-160)*5)- Site and Property level reduction

(Source: Council of Ministers, 2014/15Regulation number 41/2007E.C)

The above table indicates as the area increase, rent increase at a decreasing rate and deemed to motivate to grasp better area. For areas up to 30m^2, the monthly rent is the direct product of the area and the base rent minus for property and site level reduction if not at the first level. For areas between 31 and 60, the monthly rent is: For the first 30 m^2 is 20*30=600 and for the next 30m^2 is the product of area and the difference of 20 and 75% of 20 and there is a reduction of the site and property level if are not in the first level. For areas between 61 and 80, the monthly rent is: for the first 40 m^2 is 20*40=800 and for the next 20 m^2 is the product of area and the difference of 20 and 65% of 20 and finally, there is a

reduction of the site and property level if are not in the first level. For areas between 81 and 100, the monthly rent is

For the first 40 m^2 is 20*40=800 and for the next 40m^2 is the product of the area and the difference of 20 and 65% of 20 and for the last 20 m^2, it is the product of the area and the difference of 20 and 75% of 20 and there is a reduction of site and property level if are not in the first level. For areas between 101 and 160, the monthly rent is: for the first 50 m^2 is 20*50=1000 and for the next 50m^2 is the product of the area and the difference of 20 and 35% of 20 and for the last 60 m^2, it is the difference of 20 and 65% of 20 and there is a reduction of the site and property level if are not in the first level. For areas above 161m^2, the monthly rent is: for the first 50 m^2 is 20*50=1000 and for the next 50m^2 is the product of the area and the difference of 20 and 35% of 20 and for the next 60 m^2, it is the product of the area and the difference of 20 and 65% of 20 and for the remaining areas, it the product of area and the difference of 20 and 75% of 20 and there is a reduction of the site and property level if are not in the first level.

When the monthly rent of a property is required to be estimated for one of the purposes (types of value) indicated as in part 4.1, the expert is assigned to measure and identify the subject property. Then the expert identifies the level of the property, the site location, tenant type (is the property rented for diplomats or local tenants), and the internal area of the apartments. Finally, the expert set the monthly rent for the subject property using the formula estated under table 3 based on the internal area of the subject property.

4.4 Site and property level

There are three levels for the site and four levels for the housing unit set by the federal houses corporation in Addis Ababa. According to rent estimation experts at the federal housing corporation, the level for the site was set by the committee which is organized by the corporation and those committee members set their criteria to rank the level of the site. Based on the questionnaires response federal housing corporation valuation experts, Some of the variables but not all used to set the level of the site are the distance to CBD, environmental quality, distance to supermarket, distance to different institutions like healthcare institutions, educational institutions and access to transport. There is no value

reduction for the site that has the first level and 15% and 30% of the value is reduced for the second and the third level sites respectively. The level of the house is determined by the variables set under art 1.2 of the federally administered houses rent value regulation number 42/2007. There is no reduction in rent value for the first level properties and 10%, 20% and 30% rent value of the houses is reduced to estimate the second, third and fourth level properties respectively (Council of Ministers, 2014/15).

4.5 Government Property Level determining variables

Basically, the variables that were used to estimate the level of the property were categorized into four components (Council of Ministers, 2014/15). These are:

A. The construction material used for the structural and external wall built up contains (weigh) 50%.

B. The external and internal finishing and painting materials, door and window materials, and ceiling and floor construction materials weigh15%.

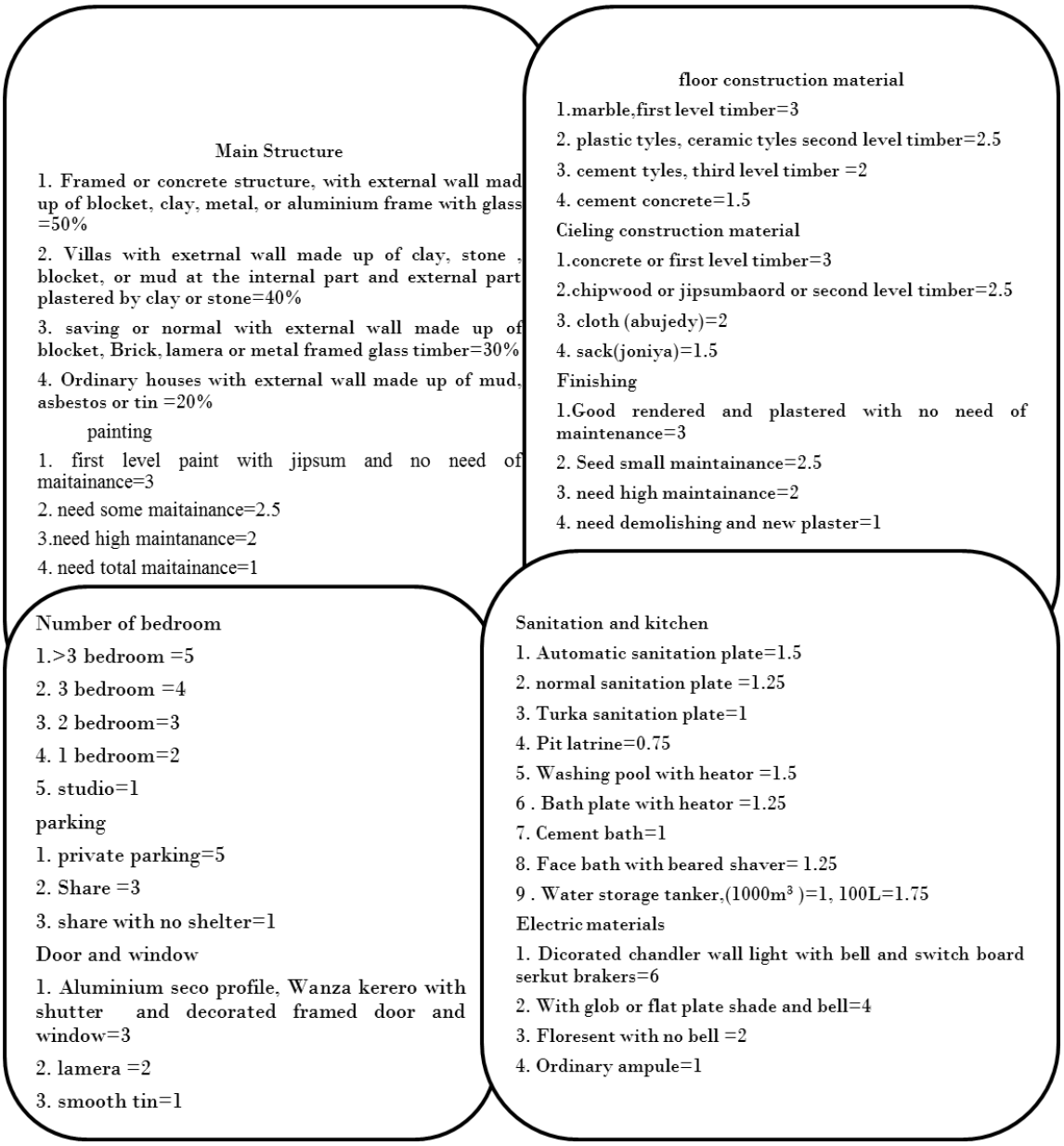
C. The construction materials for a sanitary system and weighs 9% and electric installation materials hold 6% with a total of 15%.

D. Other things that make the property comfort to use like access of parking area(5%), service(5%), no of the bedroom(5%) and external kitchen(5%). Based on these points the rank is:

If the score between 81% and 100%, it is ranked as the first and from 61% to 80%, 40%to 60%, below 40% as the second third and fourth ranks respectively.

Federally administered properties level (quality) is estimated based on the following variables. The point assigned for each type of construction materials is indicated below.

Table 4 Points given to identify the property level of the government Administered residential apartments



(Source: Council of Ministers, 2014/15), regulation number 42/7007)

For each type of construction materials as indicated from the above were identified and finally, the level of the property is set by the score given for each variable. For instance, if the property has a concrete or framed external wall that constructed from blocks, bricks or masonry, it has 50% value. If the final point given based on the variables is between 100

and 81, the property is level as the first rank and 80 to 61, 60 to 41, and below 40 as second, third and fourth levels respectively.

4.6 Regression Results of Rent Determining Factors of Government-administered Residential Apartments

4.6.1 General description of the data for government-administered residential apartments

Table 5 general description of the sample of government administered residential apartments

Variable name	Description	Frequency	Percentage	Sub tota1
1. Bedroom	One bedroom	14	9.3%	
	Two bedroom	16	10.7%	
	Three bedroom	42	28%	
	4 bedroom	47	31.3%	
	4+2 bedroom	31	20.7%	100%
2. Tenant type	Local tenant	27	18%	
	Deplomat tenant	123	82%	100%
3. Site level	Level one	108	72%	
	Level two	25	16.7%	
	Level three	17	11.3%	100%
4. Propertl level	Level one	71	47.3%	
	Level two	41	27.3%	
	Level three	20	13.3%	
	Level four	18	12.1%	100%
5. Access to balcony	Has an access	137	91.3%	
	Has not an access	13	8.7%	100%
6. Parking	Has an access	124	82.7%	
	Has not an access	26	17.3%	100%
7. Elevator	Has an access	37	24.7%	
	Has not an access	113	75.3%	100%

8. Bathroom	One bathroom	30	20%	100%
	Two bathroom	42	28%	
	Three bathroom	78	52%	
9. Access to water	Sufficient	92	61.3%	100%
	Not sufficient	58	38.7%	
10. View	Good view	84	66%	100%
	Not good view	66	44%	

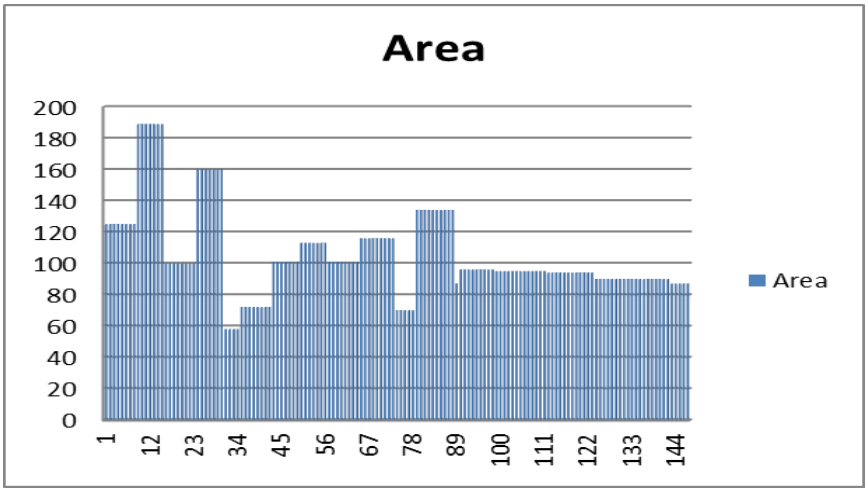
(Source: Field Survey)

From the above table, it is indicated the composition of the data for the ten independent variables. The government administered residential apartments rent value is estimated by the in advance regulated procedures. Some of the variables were taken from the procedures (tenant type, internal area, site level, and balcony). The others are included to test there effect on monthly rents even if not in the regulation. These variables are also included in the private residential apartments. The observations and their frequency are illustrated from the above table and the remaining two(area and floor levels) are indicated by histogram below.

Area

The minimum area of the apartment in the case study areas is 58 square meter and the maximum is 189 square meter and all others are in between these. It is noted from the regulation that area is one of the rent determinant variables. It seemed to motivate the tenant for a large area that the rent increases at a decreasing rate when the area increase. The area composition of government administered residential apartments in the case study area is indicated hereinbelow.

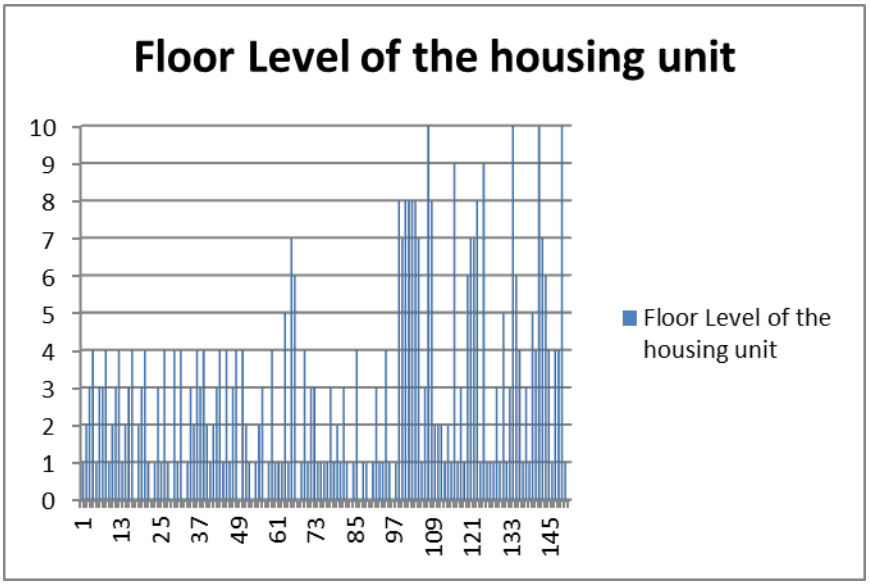
Figure 8 Area composition of government administered residential apartments



Source: Field survey, 2018

The floor level of the housing unit

Figure 9 Composition of the floor level of the housing unit for government-administered residential apartments



Source: Field Survey, 2018

The floor level of most of the data is within G+4 and the maximum is G+10 as indicated by the histogram above. These are needed to see the effect of rent as the floor level rise.

It is unary that the rent value of government administered residential apartments is estimated through in advance regulated procedures. To test as the effect of variables set under the procedure on rental value, The collected data was analyzed by using the multiple regression through SPSS statistical tool and the data must satisfy the preconditions of the regression as Linear relationship, Multivariate normality, No or little multicollinearity, No auto-correlation and Homoscedasticity. The result of the normality test indicates as the data is not normal (with a P value of 0.000).

Table 6 Normality test result of monthly rent for government-administered residential apartments

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
Monthlyrent	150	0.89187	12.581	5.741	0.00000

(Source: Compiled by the Author, 2018)

The result of the Shapiro-Wilk W test for normality indicates the p-value less than 5% and so the data is not normal. This problem is solved by Log transformation of the data through SPSS statistical tool (software) and the result of the test is indicated hereinbelow.

Table 7 Normality test of transformed monthly rent for government residential apartments

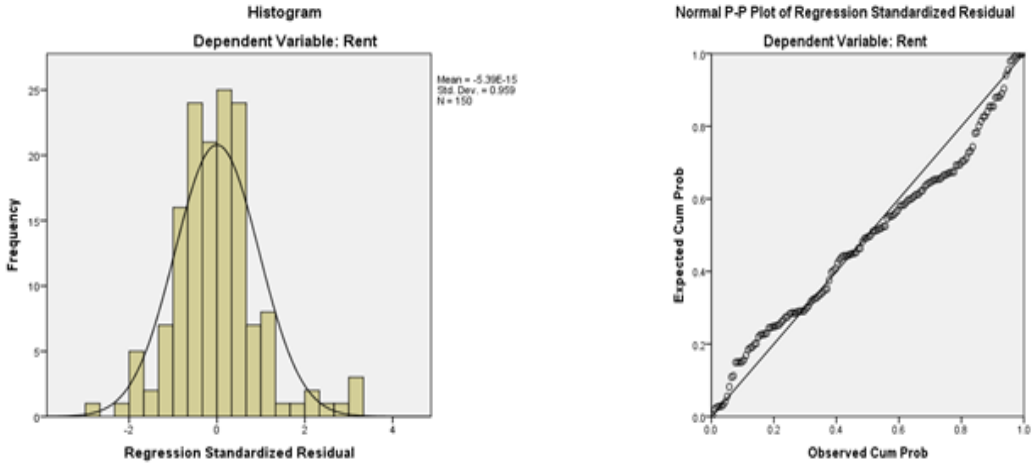
Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
Monthlyrent	150	0.98773	1.427	0.806	0.21004

(Source: Compiled by the Author, 2018)

Now the data is almost normally distributed and is indicated in the histogram below.

Figure 10 Normal distribution of monthly rent for Government apartments



(Source: Compiled by the Author, 2018)

The result of the regression indicates that 98.4% (R square) of the independent variable is expressed by the dependent variables included in the model below.

Table 8 Model summery of rent determining variables of government apartments

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.992[a]	.984	.983	.08968	1.557

a. Predictors: (Constant), View, Tenant type, Access to water, Number of bedroom, Access to lift , Property Level, Site level, Access to parking Area, Floor level of the housing unit, Access to Balcony, Internal floor area of the apartment, Access to bathroom

b. Dependent Variable: Rent

(Source: Compiled by the Author, 2018)

The Durbin-Watson test (1.557) indicates as there is almost no autocorrelation (little autocorrelation) problem of the data. The independent variables explain the dependent variable at 98.3% (adjusted R square) as indicated in the above table(table 8). The significance level of the model is also very high (less than 5%) as indicated below.

Table 9 Significance of the model for rent of government administered residential apartments

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	44.143	12	3.679	19.057	.000[b]
	Residual	26.446	137	.193		
	Total	70.589	149			

a. Dependent Variable: Transformed Rent

b. Predictors: (Constant), View, Tenant type, Access to water, Number of bedrooms, Access to lift, Property Level, Site level, Access to parking Area, Floor level of the housing unit, Access to Balcony, The internal floor area of the housing unit, Access to bathroom

(Source: Compiled by the Author, 2018)

The table (table 9) indicates that the model is significant. The p-value (Sig=000 which is less than 5%) indicates that the model is significant.

The other assumption of regression is to be free from the multicollinearity problem. This can be tested by variance inflection factor (VIF) and if the VIF is below ten, it is acceptable and the test indicates as there is no problem of multicollinearity as indicated in table 10.

Table 10 Variance inflection factor of transformed rent

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
    Bathroom |      3.59    0.278926
     Bedroom |      3.07    0.325389
     Balcony |      2.47    0.404645
        Area |      1.79    0.559364
       Level |      1.26    0.794736
  Tenanttype |      1.21    0.823697
     Parking |      1.13    0.881938
        Lift |      1.13    0.887762
        View |      1.12    0.889426
Propertyle~l |      1.12    0.892472
Accesstowa~r |      1.02    0.977302
-------------+----------------------
    Mean VIF |      1.72
```

(Source: Field Survey, 2018)

From the twelve statistically tested variables, only six variables have a significant effect on the rent of government administered residential apartments. These are the internal floor area of the apartment, tenant type, site level, access to balcony, access to the parking area and property level. These variables have a p-value less than 5% and are significant variables at a 95% level of the confidence interval. The other six variables are none significant variables for this data. The number of the bedroom, floor level of the housing unit, access to lift, access to bathroom, exposure to good view and sufficient access to water are non-significant variables. The P value of those variables is greater than 5% and so these variables do not significantly affect the rental value of a government residential apartment at 95% level of confidence intervals for these case study areas. The significance of each independent variable is also indicated in table 11 below.

Table 11 Significant rent determining variables of government-administered residential apartments.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	5.304	.085		62.319	.000	5.135	5.472
	Internal floor area of the apartment	.010	.000	.392	27.383	.000	.009	.010
	Access to Balcony	.088	.016	.093	5.524	.043	.057	.120
	Access to parking Area	.034	.032	.012	1.077	.0.04	-.097	.029
	Number of bedroom	.012	.012	.019	1.029	.305	-.035	.011
	Floor level of the housing unit	.001	.005	.002	.203	.840	-.008	.010
	Access to lift	.014	.018	.009	.783	.435	-.049	.021
	Access to bathroom	.014	.024	.012	.611	.542	-.032	.061
	Tenant type	1.162	.017	.832	69.442	.000	1.129	1.195
	Site level	-.174	.010	-.203	-18.047	.000	-.194	-.155
	Property Level	-.128	.008	-.184	-16.268	.000	-.144	-.113
	Access to water	.006	.017	.004	.357	.722	-.028	.041
	View	.029	.025	.013	1.183	.239	-.020	.078

a. Dependent Variable: Transformed Rent

(Source: Field survey results compiled by the author, 2018)

Based on the data and the results indicated in the above table (table 11), the constant, internal floor area, access to balcony, access to the parking area, tenant type, site level, and property level are significant variables. In the case study areas, the collected data did not indicate as the other variables (number of bedrooms, the floor of the housing unit, access to lift, access to the number of the bathroom, access to bathroom and better view) has an effect on the rent of government administered residential apartments.

4.7 Rent value determining variables of private residential apartments in the case study area

Kinds of literature indicate that the bundle of amenities and facilities, property specific factors and locational factors are the rent determining inputs. In addition to this, the rental value may be affected by the duration of contractual agreements, the payment mode (in

advance or at the end of the period), premiums and freedoms and other variables like sharing of maintenance, insurance, and utility costs.

In the case study areas, mostly the owner is reluctant to take long-term agreements and the most common agreements are annual and semi-annual fixed rent agreements within advance payment mode. This is from the expectation of the owner for rent increment from time to time. The owner raises an issue as the government is the reason in addition to the intervention of brokers and inflation for the increment of rent. To collect tax from rent, the government being reluctant to accept the same amount of monthly rent for consecutive years and the owner increases the amount of rent. In the case study areas, the tenant has also incurred costs for painting at the end when the contract is terminate and disinclined to revise the rent at the market rent.

4.7.1 General description of the data

A. Dependent and independent variables

The dependent variable to be statistically tested is the monthly rent of private residential apartments in the case study area. A total number of 164 housing units were collected and Some of the independent variables suggested but not commensurated as value determining variables were:

Floor Level	External wall finish
Floor Area	Environmental pollution
Access of balcony	Bathroom
Security of the compound	Swimming pool
Parking area	Location of the site
Number of Bed Room	Access to sufficient water
Access to road	Exposure to good environmental view
Access to lift	

General descriptive statistics of the transformed monthly Rent

The monthly rent of private residential apartments has the following general characteristics.

Even if the data is transformed and fulfill the normality test, it is still slightly negatively skewed.

Table 12 Genal description of transformed monthly rent

	Transformed monthly rent
Mean	9.4145
Standard Error	0.036745888
Median	9.47
Mode	9.74
Standard Deviation	0.434783209
Sample Variance	0.189036439
Kurtosis	-0.178264983
Skewness	-0.444134261
Range	1.72
Minimum	8.41
Maximum	10.13
Sum	1318.03
Count	140
Confidence Level(95.0%)	0.072653151

(Source: Field survey, 2018)

The composition of each independent variables is indicated in the table below.

Table 13 Compositions of independent variables for private residential apartments

Variable name	Description	Frequency	Percentage	Sub tota1
1. Bedroom	Studio	7	4.3%	
	One bedroom	20	12.2%	
	Two bedroom	62	37.8%	
	Three bedroom	75	45.7%	100%
2. Security	Secured	34	20.7%	
	Not secured	130	79.3%	100%

3. Site location	CMC	106	64.6%	
	Kazanchis	32	19.5%	
	Jemo	26	15.9%	100%
4. Number of bathroom	One bathroom	27	16.5%	
	Two bathroom	137	83.5%	100%
5. Access to balcony	Has an access	144	87.8%	
	Has not an access	20	12.2%	100%
6. Parking	Has an access	148	90.2%	
	Has not an access	16	9.8%	100%
7. Elevator	Has an access	54	32.9%	
	Has not an access	110	67.1%	100%
8. Access to road	Natual ground	42	25.6%	
	Gravel	68	41.5%	
	Asphalt	54	32.9%	100%
9. Access to Water	Sufficient	94	57.3%	
	Not sufficient	70	42.7%	100%
10. View	Good view	67	40.9%	
	Not good view	97	59.1%	100%
11. External wall finish	Quartz	142	86.6%	100%
	Granite paint	22	13.4	
12. The existence of pollution	Exist	16	9.8%	
	Did not exist	148	90.2%	100%
13. Swimming pool	All has not to access	164	100%	100%

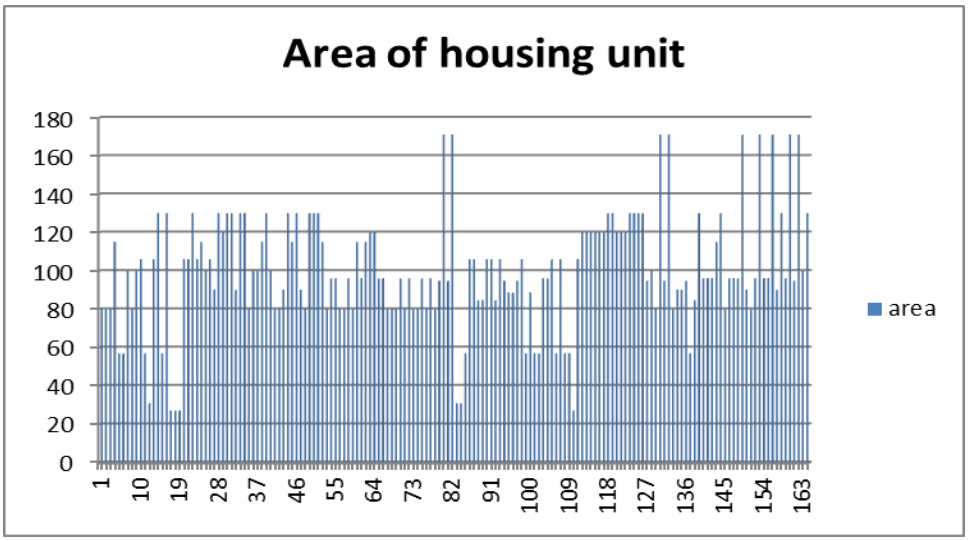
(Source: Field survey, 2018)

The composition of the thirteen independent variables indicated in the above table (table 13) and their composition is expressed by number and percentage. There are two independent variables that are not included in the above table. The area and flor level of the housing unit is better to be explained by the histogram and is indicated hereinbelow.

Area composition of housing units

The minimum area is 27 meter square for studios and the maximum is 171 meter square for three bedrooms as indicated below.

Figure 11 Area composition of private residential apartments

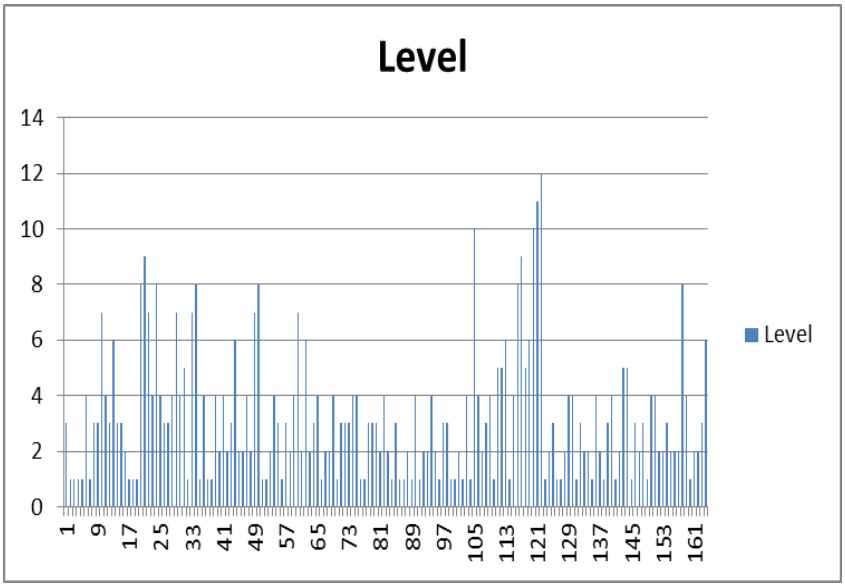


(Source: Field Survey, 2018)

Floor Level of the housing unit

The floor level of the housing units ranges from zero to 12 based on the availabilities and this composition is indicated hereinbelow.

Figure 12 Floor level composition of the housing unit



(Source: Field Survey, 2018)

A. Normality test and the histogram of the data

The regression analysis is being the right method of analysis when the data fulfills the:

- Linear relationship
- Multivariate normality
- No or little multicollinearity
- No auto-correlation
- Homoscedasticity

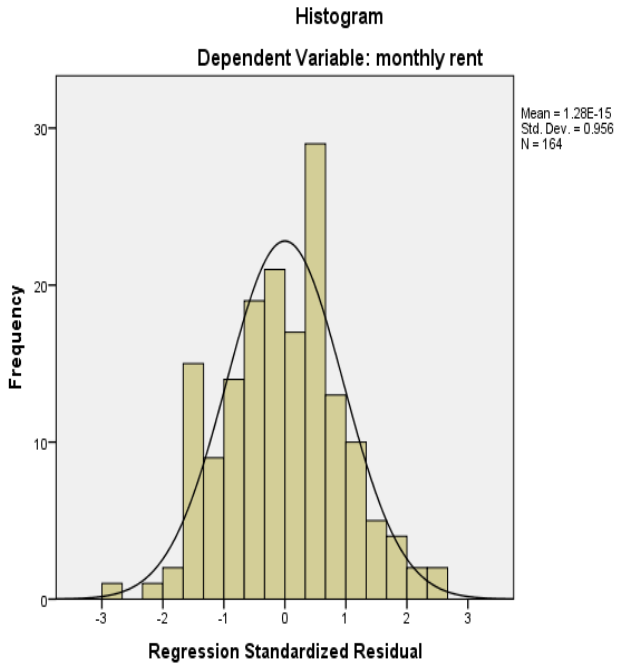
First, linear regression needs the relationship between the independent and dependent variables to be linear. This can be observed from the scattered plot of the data and as indicated below it is linear.

Figure 13 Scatter plot of private apartments Monthly Rent

(Source: Field survey, 2018)

Using the Stata statistical tool, when the data is tested with a normality test, the result indicates as it is none normal data. The histogram and Shapiro-Wilk W test result are indicated hereinbelow from this it can be observed as the data is non-normal.

Figure 14 Normality test of the monthly rent by the histogram



(Source: Field survey, 2018)

The diagram indicates the distribution of the data is not normal. It is slightly positively skewed.

Table 14 Normality test for rent of private residential apartments

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
Rent	164	0.95543	5.599	3.923	0.00004

(Source: Compiled by the Author, 2018)

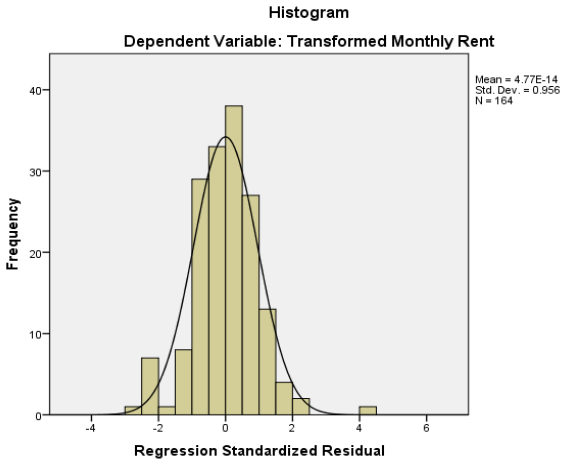
Ho: The sample data are not significantly different than a normal population.

Ha: The sample data are significantly different than a normal population.

The Shapiro-Wilk test rejects the null hypothesis (P value is less than 5%) and the data is not normal. Therefore to analysis the data, first it should be transformed.

The data was transformed by using log transformation in Stata statistical tool and the result was displayed hereinbelow.

Figure 15 Histogram for transformed data



(Source: Compiled by the Author, 2018)

Table 15 Normality test for transformed rent of private residential apartments

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
rent1	140	0.98556	1.584	1.039	0.14951

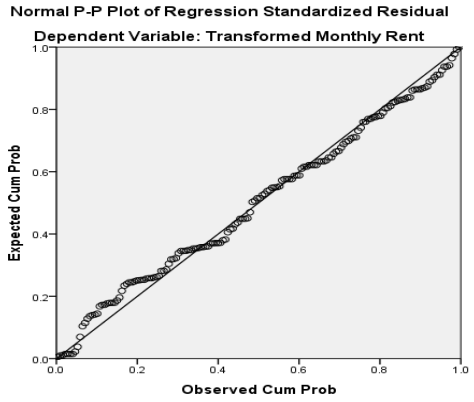
(Source: Field Survey, 2018)

Ho: The sample data are not significantly different than a normal population.

Ha: The sample data are significantly different than a normal population.

The Shapiro-Wilk test accepts the null hypothesis (P value is greater than 5%) and the transformed data is now normal.

Figure 16 P- P Plot of the transformed data



(Source: Field Survey, 2018)

The predicted probability (P-P) plot compares the observed cumulative distribution function (CDF) and of the standardized residual to expected CDF of the normal distribution. The plot indicates as the normality of residuals (along with the prediction line).

B. The autocorrelation and Multicollinearity test

Autocorrelation

The correlation between consecutive readings can be tested by Durbin-Watson Taste test which ranges from 0 to 4. When it is 2 indicates that the residuals are uncorrelated, 0 indicates the positive strong correlation and 4 negatively strong correlation. The Durbin-Watson Taste indicates almost there is no autocorrelation problem (1.827) in the table below.

Table 16 Autocorrelation of consecutive records

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.952[a]	.907	.898	.130	1.827

a. Predictors: (Constant), Good environmental view, Sufficient Access to water suply, Access of balcony , location of the site, Bath room , Floor Level, Parking area, Environmental polution ,Access to lift, External wall finish, Floor Area, security of the compound, Number of Bed Room, Access to road

b. Dependent Variable: Transformed Monthly Rent

(Source: Field Survey, 2018)

The above table (table 16) indicates two basic concepts. The first one is the percentage of how to match the independent variables explain the dependent variable. The independent variables explain the dependent variable by 89.8% (adjusted R square). The other one is the Durbin Watson (1,827) which indicates as there is no autocorrelation problem.

C. Multicollinearity test

The multicollinearity between variables can be observed by using the variance inflation factor(VIF) and if it is greater than ten almost there is a multicollinearity problem. The Stata statistical tool result of VIF is indicated hereinbelow.

Table 17 Multicollinearity test

. vif

Variable	VIF	1/VIF
Road	9.90	0.100982
Bedroom	8.91	0.112225
security	7.89	0.126802
Bathroom	6.03	0.165838
Area	5.70	0.175290
LIft	5.19	0.192854
Location	3.31	0.301887
Pollution	3.06	0.326770
Finish	2.21	0.452614
Parking	1.99	0.501593
Level	1.59	0.627563
Balcony	1.40	0.715589
Water	1.25	0.800428
View	1.21	0.829394
Mean VIF	4.26	

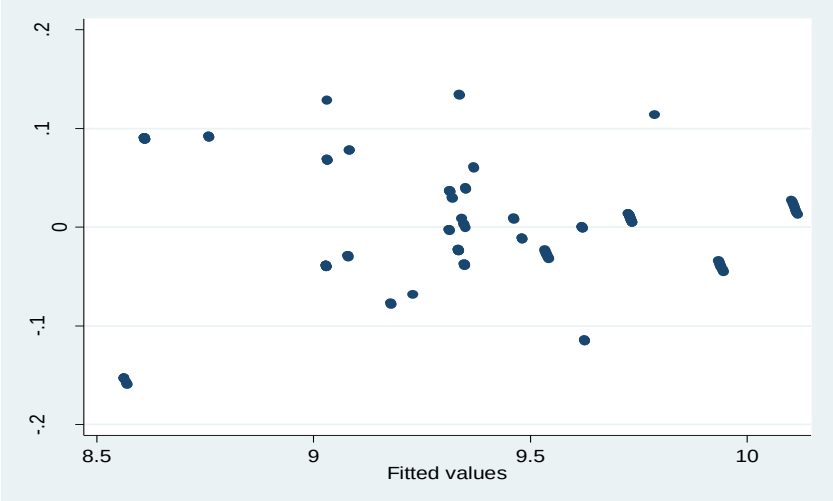
Source: Field Survey, 2018

The easiest way of correction for multi-correlation is to ignore the variable that has greater than ten VIF result but in this case, all are below ten and there is no exaggerated multicollinearity problem. From the correlation table 10, area and number of bedrooms are highly correlated (0.76) and Acces to bathroom and number of bedroom also has a higher correlation (0.83).

E. Homoscedasticity test

The scatter plot is a good way to check whether the data are homoscedastic (meaning the residuals are equal across the regression line). The plot indicates as there are no patterns and the data almost have not heteroscedasticity problem.

Table 18 A Plot for Homoscedasticity Test



(Source: Field Survey, 2018)

4.7.1 The Model and significant variables

Now all the assumptions of linear regression are satisfied and it is to identify as which variable is statistically significant. The result of the regression is indicated hereinbelow.

Table 19 The Model For Rent value of private Residential apartments

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.952[a]	.907	.898	.130	1.827

a. Predictors: (Constant), Good environmental view, Sufficient Access to water supply, Access of balcony , location of the site, Bathroom , Floor Level, Parking area, Environmental pollution , Access to lift, External wall finish, Floor Area, security of the compound, Number of Bed Room, Access to road

b. Dependent Variable: Transformed Monthly Rent

(Source: Field survey, 2018)

Now all regression preconditions are tested and verified and the next is to test the model whether it is significant or not at the 95% level of confidence and the result of the test is indicated hereinbelow.

Table 20 Significance of the model for the monthly rent of private residential apartments at the case study areas

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.650	14	1.761	103.739	.000[b]
	Residual	2.529	149.	.017		
	Total	27.179	163			

a. Dependent Variable: Transformed Monthly Rent

b. Predictors: (Constant), Good environmental view, Sufficient Access to water supply, Access of balcony, the location of the site, Bathroom , Floor Level, Parking area, Environmental pollution , Access to lift, External wall finish, Floor Area, security of the compound, Number of Bed Room, Access to road

(source: Field Survey, 2018)

The linear regression result in table 21below indicates that nine variables (Area of the apartment, Acces to balcony, Security of the compound, Access to road, Access to parking area, Number of bedrooms, Access to lift, Type of external wall finish and the Location of the site) affect the rental value of private residential apartments in the case study areas. The remaining five variables (floor level, Access to bathroom, Environmenta1 pollution, Good environmental view and sufficient access to water) did not statistically affect the rental value of private apartments in the case study area rather the vacancy rate increases for the housing unit that has lack of an access in such type of services. For sufficient access to water, all apartments have an access to water and there is a water tank with the water pump. The researcher try to assess the fair distribution of water in each floor level but still even if there is unfair distribution for varying floor levels when there is no electric supply, rather than decreasing the monthly rent for such housing units, the vacancy rate is increased i.e these housing units are rented after the others are occupied. For the floor level of the housing unit, the rent is decreased from down to up if there is no access to lift. From the demography, the interest of the tenant to up levels decrease as the age and number of family size increase. But in this model, the decreasing effect of floor level is dominated by the increasing level of access to lift and it is an insignificant variable and further study. For the swimming pool, there is no access to the study area and can not possible to test its significance statistically

Table 21 Significance of independent variables for private residential apartments

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	8.354	.088		95.144	.000	8.180	8.527
Floor Level	-.004	.006	.022	.702	.484	-.007	.015
Floor Area	.002	.001	.162	2.557	.012	.001	.004
Access of balcony	.240	.030	.039	3.326	.000	-.020	.101
security of the compound	.361	.067	.384	5.400	.000	.229	.494
Parking area	.071	.030	.083	2.347	.020	.011	.131
Number of Bed Room	.282	.048	.470	5.886	.000	.188	.377
Access to road	.135	.039	.285	3.469	.001	.058	.212
Access to lift	.196	.047	.241	4.146	.000	.103	.290
External wall finish	.106	.031	.133	3.474	.001	.046	.167
Environmental polution	-.056	.047	-.052	-1.176	.242	-.149	.038
Bath room	-.008	.051	-.009	-.151	.880	-.108	.093
location of the site	-.071	.026	-.132	-2.772	.006	-.122	-.020
Sufficient Access to water suply	.037	.024	.042	1.523	.130	-.011	.084
Good environmental view	.027	.025	.029	1.065	.289	-.023	.077

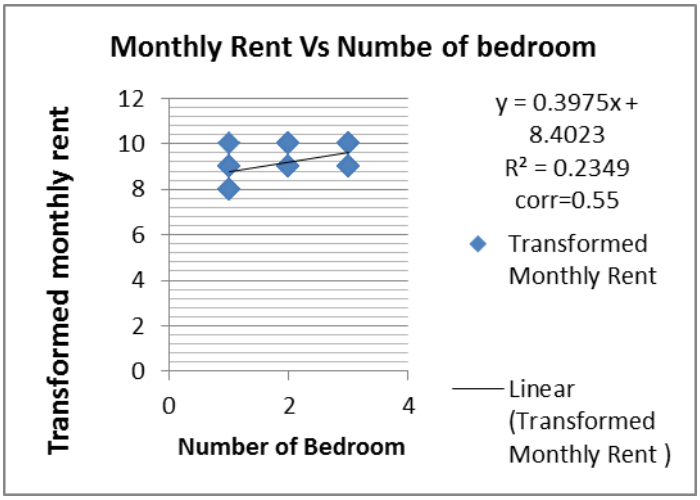
a. Dependent Variable: Transformed Monthly Rent

(Source: Field survey, results compiled by the author, 2018)

.The one to one relation of those significance independent variables to the dependent variable is indicated as below.

A. Number of the bedroom and monthly rent

Figure 17 The relationship between the bedroom and the Monthly Rent



The relationship between monthly Rent and the number of the bedroom in the case study area is in a direct relationship with a relation coefficient of 0.55. The number 0,2 and 4 indicates the number of the bedroom in the housing unit. As the number of bedroom increase rent also increases. The one to one relation is: Y=0.3975x+8.4

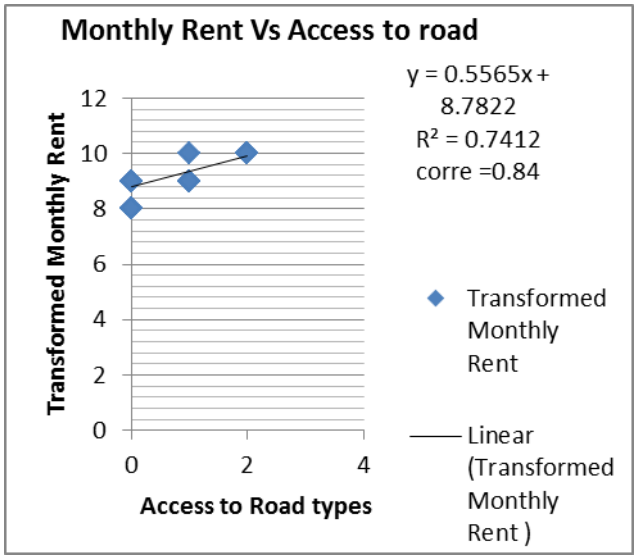
(Source: Field survey, 2018)

B. Access to Types of Road

Access to the road has also a direct relationship to the monthly rent with a strong correlation coefficient of 0.84. The number 0, 1 and 2 represents Natural earth, gravel and asphalt types of roads. The one to one relation of the dependent variable to independent variable is expressed as:

Y=0.5565x+8.78

Figure 18 Relationship of monthly Rent and access to road types



(Source: Field survey, 2018)

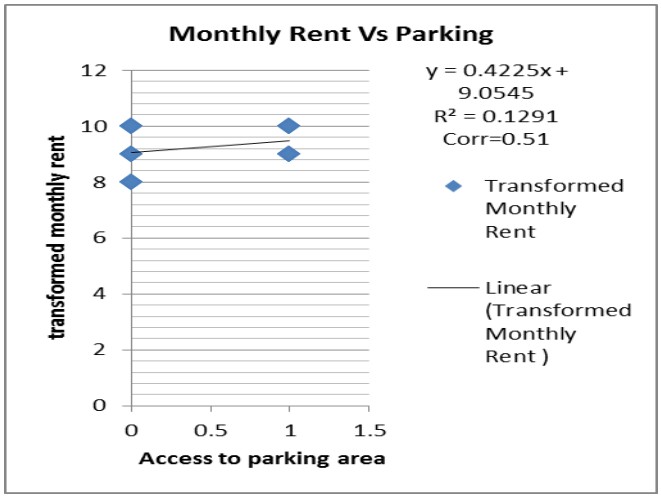
Figure 19 Access to the road at the sunshine real estate

(Source: Field survey, 2018)

C. Access to Parking Area

Access to the parking area and the monthly rent has a direct relationship with the strong correlation coefficient of 0.51. From the above diagram 0 indicates as there is no access to the parking area and 1 is for those that have access to the parking area. The picture on the right side indicates parking is along the road due to lack of access to the parking area. There is no sufficient space for parking from apartments that are constructed by cooperatives who are organized by the government and the shortage of access for parking area negatively affect the monthly rent of those apartments. That means apartments that have an access to parking area can generate better monthly rents than apartments that have not an access to the parking area.

Figure 20 Access to the parking area



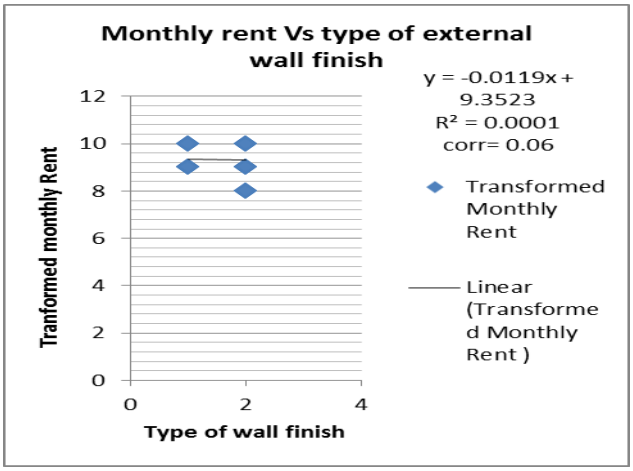
(Source: Field Survey, 2018)

Figure 21 Access to the parking area at private cooperative apartments

(Source: Field Survey, 2018)

D. External wall finish

Figure 22 External wall finish and monthly rent

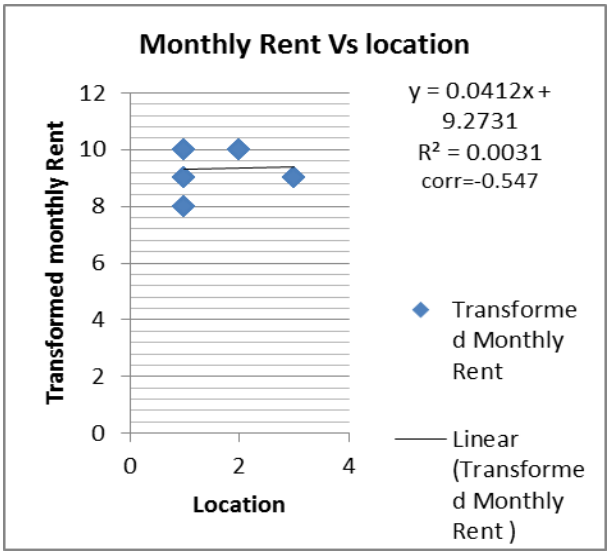


(Source: Field Survey, 2018)

The monthly rent and The type of wall finish has a weak positive relationship with the correlation coefficient of 0.06. Even if the correlation coefficient is very weak, it is statistically significant with the p-value of 0.001 which is less than 0.05. There are two types (quartz and granite paint) of external wall finishes from which quartz is represented by 2 and granite paint is represented by 1 in figure 23. Granite paint wall finish has better rental value than quartz external wall finish.

E. Location of the Site

Figure 23 The relation of location and monthly Rent

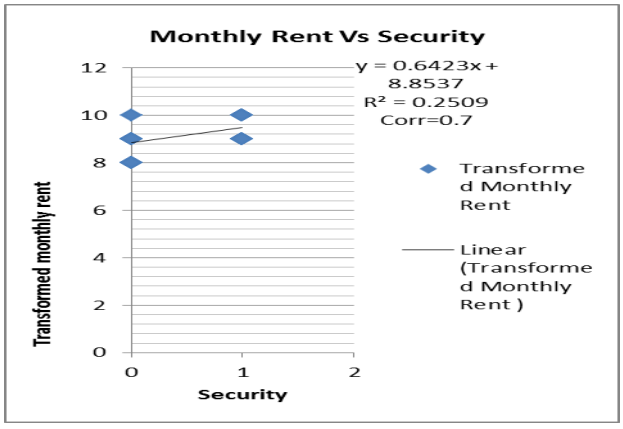


(Source: Field Survey, 2018)

The case study includes three sites (CMC, Kazanchs, and Jemo). The correlation coefficient of the location of the site and the monthly rent is 0.547 and from p-value, it is significant. The CMC site is represented by 1 and the Kazanchs and the Jemo sites are represented by 2 and 3 respectively in figure 18. As the correlation coefficient is negative and this indicates that the monthly rent of the apartment is decreased from CMC to Kazanchs and then to Jemo.

F. Security of the Compound

Figure 24 Security of the compound and monthly rent



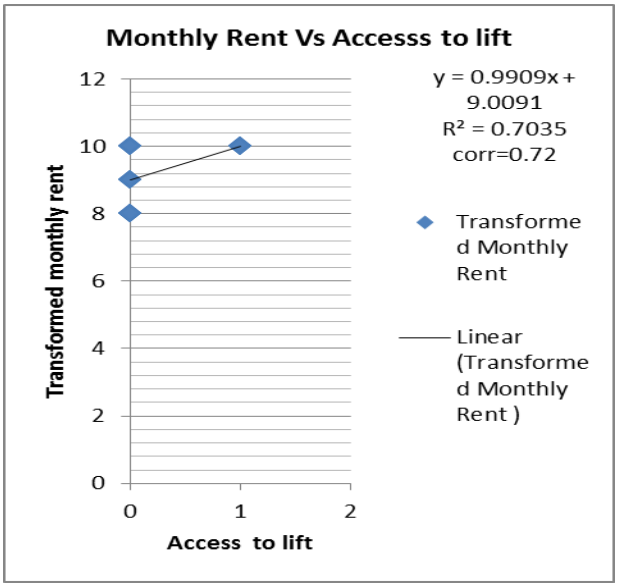
(Source: Field Survey, 2018)

Security of the compound in the case study area is identified as fenced and open. Rents at a fenced compound are higher than rents at the open compound. Open compounds are represented by 0 and fenced compounds are represented by 1 at figure 25 and it is indicated as the relation is the strong positive relation(0.7). That means monthly rents from secured compounds has a higher value than monthly rents from none secured compounds.

Real estate developers should now as there is the strong relationship between monthly rent to the security of the compound but still, it needs CBA analysis.

G. Access to lift

Figure 25 The relation of monthly rent and access to lift



(Source: Field Survey, 2018)

The relation between access to lift and monthly rent is a direct positive relationship with the correlation coefficient of 0.72. The existence of Access to lift is represented by 1 and 0 represents as there is no access to lift. Therefore the average monthly rent of buildings that has an access to lift is greater than those that have not access to the lift. The one to one relation is:

Y=0.991+9 and so it is a significant variable.

H. The Area of Apartment

The area of the apartment has a strong direct relationship with the monthly rent of residential apartments. The correlation coefficient of this independent variable to the dependent variable is 0.73

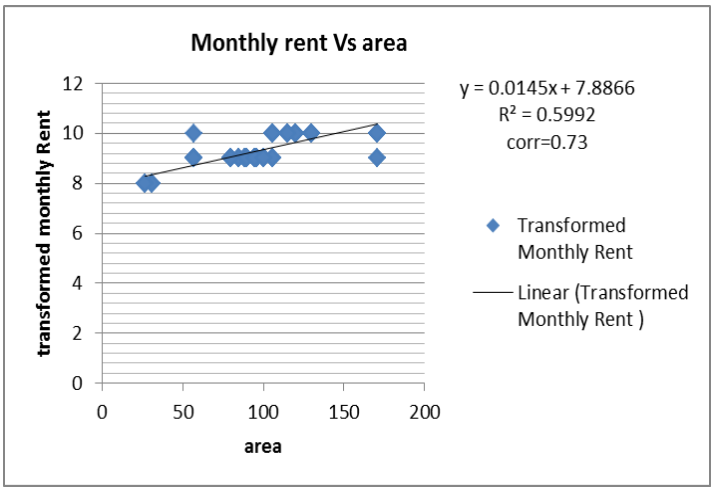


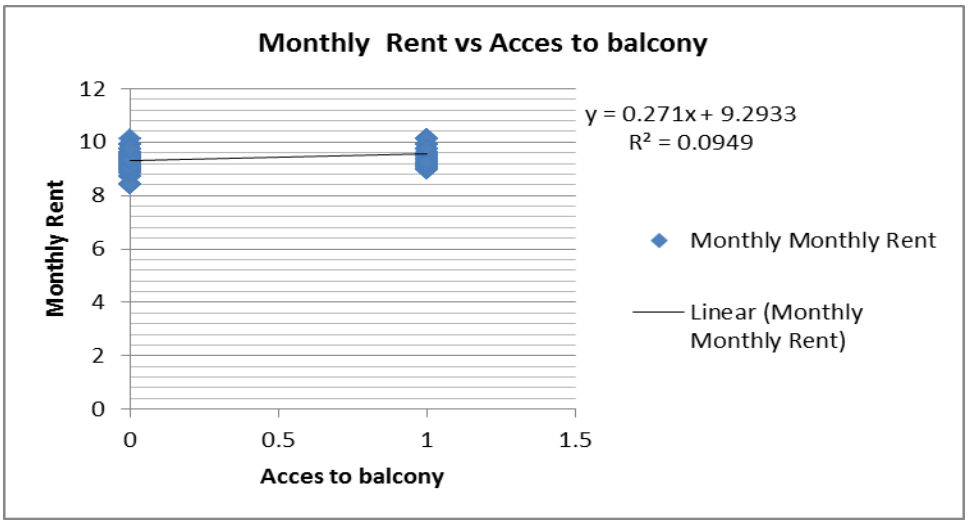
Figure 26 The Relation of Monthly Rent and Area of the apartment

(Source: Field Survey, 2018)

I. Access to balcony

Access to balcony also has a direct significant effect on the monthly rent of residential apartments at the case study area. Apartments that have access to balcony generates better monthly rent than those that have not an access to the balcony. This effect is indicated in the figure below.

Figure 27 The relation of Monthly Rent and Access to balcony

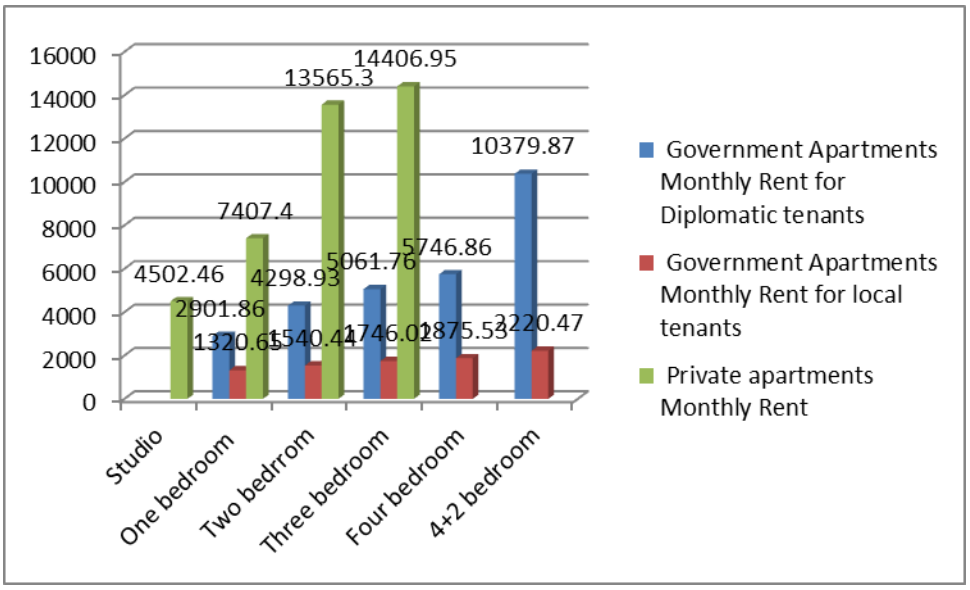


(Source: Field Survey, 2018)

4.8 Comparision of Monthly Rent and area of the government and private apartment

The average monthly rent of government apartments rented for diplomats is smaller than the private apartments. The average monthly rent of private and government apartments are indicated in figure 29 below.

Figure 28 Comparison of Average Monthly rent for government and private Residential apartments

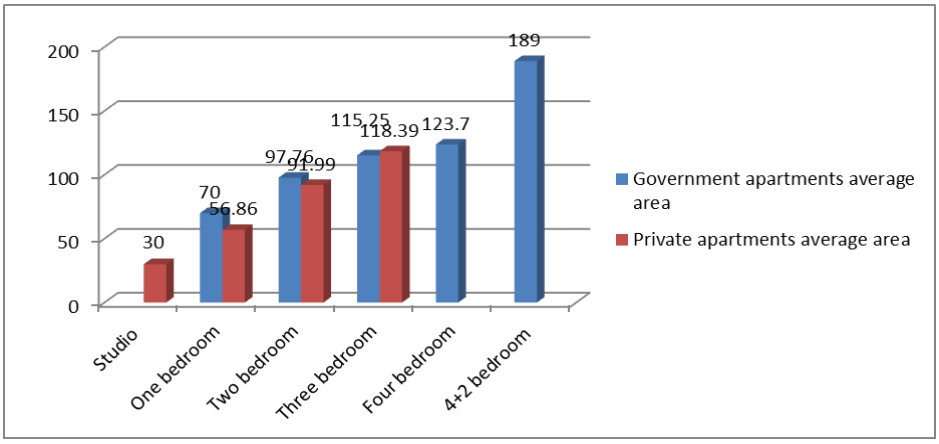


(Source: Field Survey, 2018)

The average monthly rents of one, two and three bedroom of government apartments for diplomat tenants is smaller than private apartments by 4,570ETB, 9,266 ETB and 13,845 ETB respectively and for the local tenant is smaller than from the private apartments by 6,087ETB, 12,025 ETB and 12,660 ETB respectively. For the studio, four bedrooms and a 4+2 bedroom, there are no comparables in the case study areas and hence impossible to compare. There are no studio apartments from Government-administered apartments and there is no four and 4+2 bedroom from private apartments and so has not comparables. The expression for the 4+2 bedroom is the housing unit that has four bedrooms and 2 reserve rooms for the tenant to use as his interest either for the bedroom or mini library or any other

uses. When the area of private residential apartments are compared with the area of government residential apartments as indicated below almost are comparable and has no significant variation.

Figure 29 Comparision of Government and Private apartments by floor area



(Source: Field Survey, 2018)

4.9 Factors that cause rent difference in private and government residential apartments

It is pointed out from part 4.8 as the average monthly rent of government-administered residential apartments in the case study area is match smaller than the average monthly rent of private residential apartments. Some variables are included from the private residential apartments but not in government-administered residential apartments for the reason that is constant for all housing units. For instance, the external wall finish, Acces to types of road and security of the compound are the same for all government-administered housing units in the case study areas and are delayed. The rent of government-administered residential apartments is determined by advanced regulated procedure but it is regressed to test the effects of independent variable and based on the regression result of the variables, only six variables (internal floor area of the apartment, tenant type, site level, access to balcony, access to the parking area and property level) are significant statistical at 95% level of confidence interval and the rent is a function of the constant and those six determinant variables. The original data is transformed by log transformation through the Stata statistical

tool to reduce the highly skewed to less skewed distributions and so the result of constants and coefficients is in the transformed form.

$Lg(Y) = F(C+a_1FA + a_2TT + a_3SL+ a_4AB + a_5AP + a_6PL)$,Where

- ✓ Y= Monthly Rent and, a_2-a_6 are coefficients
- ✓ C=Constant
- ✓ FA=Internal floor area of the apartment
- ✓ TT=Tenant type (Local and diplomat tenant type)
- ✓ SL=Site level
- ✓ AB=Access to balcony
- ✓ Ap= Access to the parking area and
- ✓ PL=Property level

Since the data is transformed to reduce the skewness, the coefficients are in log-transformed form and can be re-written with coefficients as:

Log(Y)= 5.304 + 0.01*FA + 1.162*TT + (-0.174*SL) + 0.088*AB + 0.034*AP +(-0.128*PL)

This implies that as the floor area of government-administered residential apartments increased by one unit area, the rent will increase by 1%. There are two types of tenants (local tenant and diplomatic tenant) and for a diplomatic tenant, the rent will increase by 116.2%. There are three site levels set by the regulation number 42/2007 of proclamation 555/2000" and site level two is decreased by 17.4% from site level one and increased by 17.4% from site level three. The presence of Access to balcony and parking area increases the rent at 8.8% and 3.4 % respectively and the lack of access to these variables decrease the rent by the respective percentages. There are also four levels for government-administered properties and the monthly rent of the second level of the property is reduced by 12.8% from the first level and increased by 12.8% and 25.6% from third and fourth level properties respectively. Although the number of the bedroom is stated as a significant variable to estimate the monthly rent under regulation number 42/2007 of proclamation 555/2000" part 1.3.4, it is insignificant statistically at 95% level of confidence interval from

the regression model. In addition to this, the monthly rent of government-administered residential apartments did not increase unless the regulation number 42/2007 of proclamation 555/2000" is revised or substituted by the other regulation.

Recalling table 21, the significant determinant variables for the monthly rents of private residential apartments, there are nine significant variables(Area of the apartment, Acces to balcony, Security of the compound, Access to road, Access to parking area, Number of bedrooms, Access to lift, Type of external wall finish and the Location of the site) that determine the monthly rent and so the rent is the function of those significant variables and a constant. Therefore:

Monthly Rent = F(C + A + AB + SC + AP + NB + RT + AL + EWF + SL), where

C=Constant

A=Area of the housing unit

AB= Access to balcony

SC=Security of the compound

AP=Access to the parking area

NB=Number of bedroom

RT=Access to road type

AL=Access to lift

EWF=Type of external wall finish

SL=Site location

The original data is transformed to reduce the skewness and the model with the constant and the coefficients can be re-written as:

Log(Monthly Rent)= (8.354 + 0.002*A + 0.024*AB + 0.361*SC+0.071*AP+ 0.282*NB + 0.135*RT + 0.196*AL + 0.106*EWF + (-0.071)SL

It is to note from this model that, as the area increases by one unit, the rent increase by (0.2%) and if there are access to balcony, parking area, lift, and security of the compound, the rent will increase by 2.4%, 28.2%, 19.6%, and 7.1% respectively. For road type, access to gravel road increases the monthly rent of private residential apartments by 13.5% than access to natural ground and decreases by 13.5% from the asphalt type of road accessed. The monthly rent of apartments that has two-bedroom decreased by 28.2% from three-bedrooms and increased by 28.2% from one bedroom. Similarly, the monthly rent of the studio is decreased by 28.2 % from the one bedroom. The monthly rent of the apartments

that have aluminum plaster external wall finish increases by 10.6% than quartz external wall finish types. The last determinant variable is the location of the site and the monthly rent apartments at kazanchis site is greater than from Jemo site by 7% and decreased from the CMC site by 7%.

The above two models indicate that access to lift and the number of the bedroom are determinant variables for private residential apartments and these variables have no effect on government-administered residential apartments in the case study area. The other significant difference is the constant and is 4,247 ($e^{8.354}$) for the private residential apartments and 201 ($e^{5.304}$) for government-administered residential apartments where e is 2.72 (natural logarithm). In addition to this the coefficients of the area, access to balcony and access to parking area are different from the two models and this affects the monthly rent of government-administered and private apartments at a different scale.

CHAPTER FIVE

5.Conclusion and Recommendation

5.1 Conclusion

The study is conducted on the comparison of monthly rents for government-administered and private residential apartments at three purposefully selected case study areas (CMC, Kazanchs, and Jemo). Beside this, it assesses the rent determinant variables for government and private residential apartments and rent estimation procedures specifically for government-administered residential apartments. The regression result indicates that the monthly rent of private residential apartments is a function of the constant and nine independent variables that can be categorized as physical attribute of the property (Area of the apartment, Acces to balcony, Number of bedrooms, Type of external wall finish), Amenities and services (Access to lift, Access to road, Access to parking area), and location factors (Security of the compound and Location of the site) are significant at 95% level of confidence interval.

When the monthly rent of residential apartments is compared by one independent variable (number of bedrooms), the average monthly rents of one, two and three bedrooms of government-administered residential apartments for diplomat tenants is smaller than private apartments by 4,570 ETB, 9,266 ETB and 13,845 ETB respectively and for local tenant is smaller than from the private apartments by 6,087ETB, 12,025 ETB and 12,660 ETB respectively. This implies that government-administered residential apartments are undervalued and from the highest and best use principle of real estate, it is not in the highest and best use. The government should address this variation by applying the highest and best use (privatize or adjust rent estimation procedure).

The rent of government-administered residential apartments is determined by advanced regulated procedure but it is regressed to test the effects of independent variable and based on the regression result of the model, only six variables (internal floor area of the apartment,

tenant type, site level, access to balcony, access to the parking area and property level) are significant statistical at 95% level of confidence interval and the rent is a function of the constant and those six determinant variables.

The comparison of the models for private residential apartments and government administered residential apartments indicates that access to lift and the number of the bedrooms are determinant variables for private residential apartments and these variables have no effect on government-administered residential apartments in the case study area. Although the number of the bedroom is stated as a significant variable to estimate the monthly rent under regulation number 42/2007 of proclamation 555/2000" at part 1.3.4, it is insignificant statistically at 95% level of confidence interval from the regression model. The other significant difference is the constant and is 4,247 ($e^{8.354}$) for the private residential apartments and 201 ($e^{5.304}$) for government-administered residential apartments where e is 2.72 (natural logarithm). In addition to this the coefficients of the area, access to balcony and access to parking area are different from the two models and this affects the monthly rent of the government-administered and private apartments at a different scale.

The monthly rent of government-administered residential apartments did not increase unless the regulation number 42/2007 of proclamation 555/2000" is revised or substituted by the other regulation whereas the monthly rent of private residential apartments increase in each termination of rental agreement and so it is possible to conclude that the apartments administered by the government did not generate the appropriate effective gross income for the government. On the other hand, it does mean that tenants rented from government apartments seek inapt advantage.

5.2 Recommendation

- ✓ In comparison of private residential apartments, the government-administered residential apartments are rented at smaller amounts of monthly rents with vague variation and also the rent did not increase through time and to address this variation the government should either privatize the properties (the properties can generate better income if privatized for the highest and best use

principles) or adjust the rent estimation procedure and tie the monthly rent with consumer price index (CPI) to avoid the static rents.

- ✓ Tenants rented at the private residential properties in the case study area face a challenge in unexpected increment of rent at the revision of the contract. The monthly rent of the private residential apartments is very high compared to government-administered residential apartments. To mitigate the random increments, the government should have the regulation that guides tenant-landlord relation as other countries. For tax collection purpose the government takes the agreed monthly rent and people agree at a bogus paper to be submitted for the government and if there is residential tenant regulation, that helps to estimate the monthly rents based on the model, the government can take the appropriate percentage of tax. That means the government can take the rents based on the model and determinant variables.
- ✓ On the other hand, real estate developers should know the monthly rent determinant factors and consider those factors at the construction of new apartments. The sales price of the property depends on its power to generate an income and if the property is rented at a high amount, the price will increase and properties to be rented at better amount the variables like Area of the apartment, Acces to balcony, Number of bedrooms, Type of external wall finish, Access to lift, Access to road, Access to parking area and security of the compound. Therefore the real estate developers should include these variables for new apartments.

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Appendixes

Appendix One

Questionnaires prepared for Tenants rented at private Residential apartments.

This questionnaire is designed to collect data to conduct a research on the title "comparative analysis of rent value for the government and private residential apartments in Addis Ababa". This information will be used only for the purpose of Partial fulfillment for MSc in urban land and property valuation and so it is confidential thus you are highly requested to provide genuine response. I would like to thank you in advance for your genuine response.

1. Name (if willing) …….. Age …….House No …….
2. Number of family number's

- ☐ One
- ☐ Two
- ☐ From three to five
- ☐ Above five

3. Education level

- ☐ Illiterate
- ☐ Read and write
- ☐ Primary
- ☐ Secondary
- ☐ Preparatory
- ☐ Higher education (College and university)

4. Occupation

- ☐ Student
- ☐ Government employ
- ☐ Private employ
- ☐ Self-employed
- ☐ NGO
- ☐ Other specify ……

5. Monthly gross Salary

- ☐ Below 5000
- ☐ From 5000 to 8000
- ☐ From 8001 to 10000
- ☐ Any other specify ……..

1.2 Rent determining factors of private residential apartments

6. How match is the area of your housing unit ----------

7. How long is the frequency of rent payment?

- ☐ Monthly
- ☐ Quarterly
- ☐ Semi-annual
- ☐ Annual
- ☐ More than Annual

8. What is the payment mode?

- ☐ In advance
- ☐ Latter (end of the period)

9. Is the rent value increased from time to time?

- ☐ Yes
- ☐ No

10. If question 9 is yes, how the rent value is increased?

- ☐ Based on in advance periodic agreement (Step up)
- ☐ Based on the change in CPI (indexed)
- ☐ Randomly by the interest of the owner
- ☐ Other specify ----------

11. Is there a rent premium at the time of rent renewal?

- ☐ Yes
- ☐ No

12. If yes, in what form is it?

- ☐ Pecuniary
- ☐ In the form of repair?
- ☐ Property improvement (addition of facilities that does not exist before)
- ☐ Other specify ……

13. Who has the responsibility to pay costs for repair, insurance, and management?

- ☐ Tenant
- ☐ Owner

14. Who has the responsibility to pay costs for electricity and water utility?

- Tenant
- Owner

15. How is the right of alienation strong?

- Full right to sublet the whole
- No right to sublet
- The right to sublet in part

16. How long (far) your apartment is to your workplace?

- Below 2 km
- 7 to 9 km
- Between 2 and 5 km
- Above 9 km
- 5 to 7 km

17. Is there enough access to transport?

- Yes
- No

18. If yes, what is/are the mode of transport? (multiple answers are possible)

- Train
- Public bus
- Public Service (free access)
- Taxi
- If any other specify

19. Is there sufficient supply of water?

- Yes
- No

20. If yes, how many times you access per week?

- Seven days
- Five days
- Six days
- Other, specify……..

21. Is there a shortage in electric supply?

- Yes
- No

22. Is there an access of parking area?

- Yes
- No

23. If yes, how enogh is the space?

- Beyond the required
- As match as required
- Below required

24. Is there a public school within 1 km distance to your apartment?

- Yes
- No

25. If the answer for the above question is no, how match far is the public school?

- Within 2 km
- Within 4 km
- Within 3 km
- Other, specify…….

26. How far is your apartment from the religious institutions?

- Within 2 km
- Within 3 km
- Other, specify ……
- Within 4 km

27. How far is your apartment from the healthcare institutions?

- Within 2 km
- Within 4 km
- Within 3 km
- Other, specify…….

28. Is there an access to lift in your apartment?

- Yes
- NO

29. If yes, is the access sufficient to all?

- Yes
- NO

30. Is there an access to the bathroom?

- Yes
- NO

31. Is an access to the swimming pool?

- Yes
- NO

32. How many bedrooms are in your housing units

- One
- Four
- Two
- Other, specify……..
- Three

33. Is there a balcony?

- Yes
- No

34. Location of Floor level of your housing unit……

35. Is there access to toilet??

- Yes
- No

36. If Yes, how is the access to the toilet?

- Share
- Alone (private)

37. Is there an access of green area (recreational area) near to your apartment?

- Yes
- No

38. Is there security for your apartment?

- Yes
- No

39. How is secure your apartment?

- Secured by guard
- Secured by high rise fence
- Secured by electric dangers
- Other specify

40. Why you prefer to rent for this Apartment?
……
……..

41. Do you think that the apartment is standard in quality?
……..……..
.....
.....

42. What are the restriction set by the landlord in relation to the rent agreement?.....……
……
……

43. Do you think that rent amount paid is fair in relation to the access you get?**.....**
.....……
……
……
……
….

Appendix Two

Questionnaires prepared for valuation experts in Federal Housing Corporation

1. Sex

   ☐ Male ☐ Female

2. Qualification

   ☐ Civil engineer ☐ planner

   ☐ Valuator ☐ Other specify……

   ☐ Architect

3. When you estimate the rental value of properties administered by the Federal housing corporation?

   ☐ Change in the purpose ☐ Tenant exchange

   ☐ After maintenance ☐ Other specify……..

4. Who has the right to apply to rent in federal administrated houses?

   ☐ All Ethiopians who live in Addis Ababa ☐ Those who have positions

   ☐ Government employees ☐ Other, specify ……

5. How you screen out the tenant?

   ☐ Through the time of application ☐ Other, specify ……..

   ☐ Through their position

   ☐ Randomly at the lottery method

6. How long is the frequency of rent payment?

   ☐ Monthly ☐ Annual

   ☐ Quarterly ☐ More than Annual

   ☐ Semi-annual

7. What is the rent payment mode?

   ☐ In advance ☐ Latter (end of the period)

8. Is the rent value increased from time to time?

   ☐ Yes ☐ No

9. If question 8 is yes, how the rent value is increased?

- Based on in advance periodic agreement (Step up)
- Based on the change in CPI (indexed)
- Randomly by the interest of the owner
- Other specify ----------

10. Who has the responsibility to pay costs for repair, insurance, and management?

- Tenant
- The government

11. Who has the responsibility to pay costs for electricity and water utility?

- Tenant
- The government

12. How is the right of alienation strong?

- Full right to sublet the whole
- The right to sublet in part
- No right to sublet

13. How is the right of spouses is strong

- As match as the spouse take the contract
- No right at all
- Other specify ……

14. For how long the tenant has the right to live in their rented house.

- As his interest
- Determined by the contract
- As long as he was in the assigned position at the time of contract
- Other specify…….

15. Which of the following has an effect on the rental value of the property? Please mark as the effect as negative or positive or as has no effect in the table below.

Variables	Positively	Negatively	No effect
Frontage			
Floor Level			
Balcony			
Bed room			
Lift			
Green area			
Orientation			
Area			
Swimming pool			
Parking area			
Access to toilet			
Distance to supermarket			
Distance to health care institutions			
Distance to religious institutions			

Access to transport			
Sound pollution			
Environmental pollution			
security			
Age of building			
Kitchen			
Bath room			
Distance to CBD			

Any other specify ……

16. When the rent is revised

- ☐ yearly
- ☐ within two years
- ☐ within three years
- ☐ Other specify……..

17. Who has the responsibility to maintain the property?

……

18. What are the variables considered in determining the level of location

……

19. What are the variables considered in determining the level of property?

……

20. Other suggestions comments and assumptions

……

……

……

Appendix Three

Interviews prepared for Federal houses rent value estimation director

1. Who has the right to rent from government administered residential apartments?.....

   .....

2. How you screen the tenants?.....

   .....

3. Did the screening method consider the income levels(pro-poor? ……

   ……

4. What are the rent estimation procedures that you follow?.....

   ……..

5. What are the rent value determinant variables that you set to estimate the monthly rents?

   ……

6. Do you think that monthly rents are comparable to private residential apartments?.....

   …….

7. What are the determinant variables to set the land grade (site level) ? ……

   ……

8. Did the monthly rents increase from time to time? ……

9. When the monthly rents were revised?.....

10. Who has the responsibility to incure monthly utility costs like water, electic phone? ……

    ……

11. Who has the resiponsibility to cover maintenance costs? ……

    …….

12. Did the tenant has the right to sublet? ……

    ……..