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The Role of Brokers on Determination of Residential Real Estate Price in Addis Ababa

BY

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A Thesis Submitted in partial fulfillment of the requirements for the award of a Master's Degree in Urban Land and Property Valuation

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December, 2020

Addis Ababa, Ethiopia

Declaration

I, Wondu Fikadu, do hereby declares that this thesis is my original work and that it has not been submitted partially or in full by any other person for an award of a Master's Degree in any other University and that all sources of materials used for the thesis have been duly acknowledged..

The Role of Brokers on Determination of Residential real estate Price in Addis Ababa

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Approval

As principal supervisor, we hereby approve that this thesis entitled "**The Role of Brokers on Determination of Residential real estate Price in Addis Ababa**" is prepared and submitted by Wondu Fikadu in partial fulfillment of the requirements for the award of a Master's Degree in Urban Land and Property Valuation.

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Acknowledgment

First, I would like to thank the almighty God for everything. Secondly, I want to give the deepest and sincere gratitude to my advisor Eyassu Kumera (MA) who gave valuable time into my study. I would like to give great appreciation and thanks for his intensive guidance and continuous advice throughout the process of doing this thesis. He devoted his valued time where and whenever I need his advice. All his quick responses, valuable and very constructive comments have made me to look into things carefully and played a great role to finalize the thesis this way.

At last I would like to thank residential real estate managers in selected site as well as brokers for being cooperative in providing information and willing to allow me visit the center.

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Acronyms and Abbreviations

DOJ	Department of Justice
DRC	Depreciated Replacement Cost
FTC	Federal Trade Commission
FSBO	For-sale-by-owners
GDP	Growth Domestic Product
HPF	Housing Provident Fund
IVS	International Valuation Standard
LIS	Land Information System
MLS	Multiply Listing Services
NAREE	National Association of Real Estate Exchanges
NAR	National Association of Realtors
OLS	Ordinary Least Squares
TOM	Time on the Market
USPAP	Uniform Standard of Professional Appraisal Practice

Abstract

The purpose of this paper is to probe the role of brokers on residential real-estate price escalation in Addis Ababa. Real estate housing market is one of mechanisms that transfer ownership rights of a house with a combination of different attributes that is defined by its prices. The process and procedure in Real estate housing market is complex both for the sellers or buyers. Market participants lack sufficient information to undertake transactions. The paper tries to examine the influencing factors of the Real estate housing market and show how brokers facilitate the market. The price of the real estate house is not determined arbitrarily. The implicit price of residential housing characteristics concerning the physical and location of Addis Ababa are examined in this paper. The elements of sales comparison of residential real estate house depend on a package of attributes that· are, valued by the consumers. A model that incorporate for the quality of the house, age, area, number of rooms, neighborhood availability of such as market, elementary school etc. are presented and discussed. Hedonic price model is used to estimate the most important determinant factors. Data is collected from households' that buy residential Real estate houses in Addis Ababa. The data collected were analyzed using the multiple linear regression models. The result of the study suggested that the price of a house has increased tremendously over a short period of time. Most buyers of a house prefer plot size, older and structurally poor quality houses. The paper tries to demonstrate the behavior of residential house market consumers given the present housing condition of the city. The policy implication of this study is that the implementation of the urban land and housing policy of the city administration should be accompanied by improvement in the residential house market.

Key words: brokers, real-estate price, determinants of house price, model of housing price

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the study

Real-estate brokers (locally called "Dellalas") are middlemen, who use their knowledge and ability to facilitate the exchange of homes between buyers and sellers. Many sellers and buyers choose Dellala to communicate with agents than direct market participants for getting valuable residential houses to be sold or bought. Since home represents a large portion of an individual`s wealth, understanding the transaction process is important. So the real estate brokerage thus becomes a large industry in the world (Anderson and Eric, 2013).

As can be understood from different countries in the global context, there are well-established duties and responsibilities, rules and regulations, and ethical codes to govern and control the task of unethical behavior of real estate brokers through registered real estate brokerage industry in the modern system. This is done to have an efficient real estate transaction (Jayewardenepura, 2015). Furthermore, among many countries, some of them have their own procedure for control of real estate transactions by brokers. United States real estate brokers began brokerage in 19C. While in Australia, the practice of real estate sales has been a recent practice and real estate brokers come together to form agents. Before the Malty List Service (MLS) was introduced in 1967, brokers only represented sellers by providing a service to present legal documentation on the transfer of real property. In the post-World War II world, in the 1940s and 1950s, real estate sellers acted as soldiers to lead family for coming for a new place to purchase the home. Later, homes were ready for the market in rapid time (Real Estate Brokers History 2018).

In the industry of Sri Lankan brokerage, two types of brokers-individuals and organizations exist. In their brokerage industry, individual brokers have usually entered by with experience. But in the case of the brokerage industry, most of those industries are reputed as good and are expanded throughout the country. These Sri Lankan companies perform their tasks by engaging in various types of properties such as residential, industrial commercial, recreation, etc. Sri Lankan brokerage is still unprofessional and there is, unfortunately, no sophisticated database to obtain information regarding real estate brokers. Besides, there is no registered brokerage industry; there is a free entrance to brokers. While ensuring maximum profit to brokers in Sri Lankan brokerage; there is no structured or well-established way to enter into the profession. There is an opportunity to have an efficient transaction for brokers, but it puts

the interests of consumers at risk in terms of maximum benefit to consumers. Real estate brokers in Sri Lankan are one of the main drivers of the growing economy. Enriching brokers and ensuring the satisfaction of the customers is the manifestation of the brokerage industry. (Jayewardenepura, 2015)

Among a lot of countries, housing is generally the single and largest investment for households. House prices may be considered to be the major financial risk they face (Cocco, 2004). As the study of Yao and Zhang, 2005) shows, fluctuations in residential property prices tend to have a bigger wealth effect than those of financial assets. This is because of the fact that the purchase of a house is predominantly funded on real estate property which widely used as a major collateral asset for bank loans. House price rise risk has attracted much attention in recent years. A number of industrialized economies, including those of the United States, the United Kingdom, and Spain, have witnessed a recent, protracted period of significant increases in house prices. Among most countries, Asian economies have been in relative tranquility during the same period by comparison on housing markets. However, the situation of this Asian economy has shown a very rapid change several years ago. China, Hong Kong, SAR, and Korea have witnessed very strong house price inflation. (Campbell and Cocco, 2007)

In recent years, there has been growing academic interest in the workings of the residential brokerage industry. Researchers have examined the question of how the price of housing is affected when homeowners sell through a real estate broker and when the sellers themselves sell it. Several empirical studies (Doiron et al., 1985, and Jud and Frew, 1986) have found evidence that brokers obtain higher sales prices, enabling a typical seller to pass some part of the commission on to the buyer. (Donald and Winkler, 1994)

Currently, productive agents who speculate in the housing market have rational expectations of strong demand for alternative stores that value can induce. Nearly twice as fast as national income over the past decade, China’s housing prices have been growing, despite a high job amount and a high rate of return to capital. As it can also be shown in this type of models, China’s housing price is growing fast. (Chen and Yiwen, 2014)

According to the Journal of Real Estate research, most brokers try to represent themselves as having special abilities and knowledge that enable them to sell a home more quickly and at a higher price than their rivals. Sellers often are encouraged by broker advertising to select the agent for selling a home at a higher price in a shorter period of time. The question of which we are interested in whether the seller's choices of real estate agents are affects housing liquidity or TOM. From the seller's perspective, there

are savings in marketing time to listing with some agents or firms in preference to others. (Winkler et al, 1996)

By establishing requirements for licensure, such as minimum age, education, experience, and various requirements and prohibitions regarding business practices, statutes on licensing brokers form the framework to state regulation and oversight of the profession has heightened. Frequently, state commissions composed of real estate brokers oversee complaining and drafting of these laws and regulations. Brokers and agents thereinafter most of the time they are informed about the real estate market and the procedure of a real estate transaction than most home buyers and sellers. These informational benefits are derived from two category sources. First, they have direct access to the MLS brokers only which is a regional or local joint venture of real estate brokers who pool and disseminate information on homes available for sale in their particular geographic areas. The Malty List Service (MLS) provides organize information for both buyers and sellers on the homes of current times for sale in a particular geographic location and on previous sales data, which are typically used in determining a home's listing price or a buyer's offer price. The second one is the most brokers have participated more in real estate transactions than their clients. This experience leads experts in guiding the direction of market conditions and knowledge in the details of those involved in completing a real estate transaction. (James, 2007)

In Ethiopia, the real estate brokerage business is not well developed as in other developed countries. There is no formal education given for real estate brokers and for any other brokers as well. They are traditional agents known as ``Dellalas``. According to the real estate sector study (2010), the residential real estate market in Addis Ababa has varying features; which ranges from a state built massive housing schemes to housing cooperatives and individuals. The housing price tagged by these providers; in fact, varies depending on the quality of housing units, financial assessment, construction material quality & design.

This paper attempts to investigate the role of brokers on residential real-estate price escalation in Addis Ababa city, Ethiopia. History, factors, and patterns of the brokers' role are investigated using pertinent research methodologies.

1.2 Statement of the problem

A broker is a person who serves as a trusted agent or intermediary in the negotiation of transaction or commercial price. Where specialized knowledge required is related to finance, insurance, and real estate, brokers are usually licensed from state professionals in the field's skill practice. State-licensed or state-certified appraisers give appraisal services that may be performed by a registered trainee. The term appraisal or appraising appears in the means of the definition of the term broker. The term broker also includes any person who is a partner, officer, or director of a partnership or corporation. A broker or entity undertakes to sell for a period of time on behalf of any number of persons. The rate of compensation called brokerage or commission is determined according to the custom of the particular-trade or by law as computed commonly either as a fixed percentage of the value of the transaction or on a sliding scale. The higher the value be lower the percentage of transaction of the real estate (Garmaise and Moskowitz, 2000)

"A real estate broker may provide a lot of economic and social uses or benefits to a country if it is operated with a skilled method. Real estate brokerage as a business sector includes many services and operations well beyond the real estate market for the transaction of brokerage. This market is potentially rich to accommodate many services and operations for societal and national uses which in turn enhance stability". (Lawson, 2016)

Regarding real estate brokers in Ethiopia, there is, unfortunately, no well-organized and developed database to obtain information on Real estate transactions. One of the major unregulated areas of the real estate business sector is that most real estate companies most of the time pre-sell the properties before building them and in the end fail to deliver such houses as per the contract they concluded. Due to the absence of a well-organized mechanism to participate in the brokerage market system, there is free entry and exit in the task of transaction which often leads to risk. The buyers and sellers great reliance on agents that participate locally are called "Dellala" and give a great guide for buying and selling homes. Dellalas' task on real estate transaction situation shows more traditional and lacking formal education in real estate trading. Great guidance on deals of negotiation is involved in buying and selling homes by brokers (Menen, 2010).

In the market, the brokerage is currently dominated by the traditional 'Dellala', and the business is appealing even for professionals to enter and play their roles. Most crucially, the 'Dellala' plays a critical role in convincing both sellers and buyers to come to an agreement. Dellalas do normally not help buyers in completing the legal paperwork needed to complete the Real Estate transaction

(Aqubamicheal, 2009). Most of the real estate home buyers in Ethiopia are Diasporas than internal peoples when compared with each other. They have high financial class due to the expensiveness of real estate homes. Addis Ababa's house price level is relatively higher when compared to African countries with a higher income level than Ethiopia. In many areas, prices doubled, and even tripled in a span of a few years (Aschalew, 2018). So, in Ethiopia, the real-estate price is currently seriously unaffordable and hence the market's future might be gloomy when relatively seen to the household income level of the nation.

House transaction valuation needs to be valued by skilled technicians. Whenever a transaction takes place rather than by brokers, and there is no standard valuation procedure. According to (Sisay, 2006), brokers can facilitate the home market faster than others through efficient information. Brokers can facilitate the housing market when housing transactions are undertaken are indicated with information flow. But by what factors brokers consider facilitation and escalation of real estate price is the question unstudied. Another study conducted by (Kiros, 2009) shows how housing price is related to an increase in the cost of construction materials which greatly contributes to hiking housing prices. Additionally (Sabal, 2005) in his study on the residential property market in Spain, found out the presence of several factors including economic growth, money supply, and population growth that affect house prices.

Although there are studies on how the real-estate market functions in Ethiopia, a few studies have been conducted on factors contributing to the escalation of housing prices due to real estate brokers. This study is therefore meant to fill the gap on the issues related to attributes affecting housing prices. By probing into the traits, the study forwards pertinent recommendations in this regard.

1.3. Objectives of the study

1.3.1 General objective

The major objective of this study is to probe the role of brokers on residential real-estate price escalation in Addis Ababa city.

1.3.2 Specific objectives

- To gauge the professionalism of residential real estate brokers using pertinent measurement parameters.
- To assess factors considered by real-estate brokers to determine residential house price and its escalation
- To develop a model for real estate housing price value differentiation in the selected site area of Addis Ababa.
- To recommend appropriate strategies to reduce the problem understood in the study

1.4 Research questions

To address statement of the problem, the following major and specific research questions are prepared. What is the role and effect of the factors of real-estate brokers use to determine residential real-estate price escalation in Addis Ababa?

- How can professionalism of residential real-estate brokers be gauged using pertinent measurement parameters?
- What are the factors considered by real-estate brokers to determine residential house price and its escalation?
- How to develop model for real estate housing price value differentiation in the selected sites area Addis Ababa?
- What are the appropriate strategies to reduce the problem understood in the study?

1.5 Significance of the study

The finding of this study will add an understanding and knowledge in the field of real estate pricing and its regulation. The residential house buyers and sellers will also obtain relevant information from brokers about the location of the residential house they want to buy. The result of the study further provides information on the general factors considered by real-estate brokers for determining the real-

estate prices. It also shows the reasons behind the rise of residential housing prices and potential problems due to the price escalation. The output of this research can also be used as a reference for other studies to be done on issues related to the tasks and roles of brokers in residential real estate transactions. In addition, this study can serve as a base for concerned bodies including municipalities, banking mortgages, participants of the real-estate market, house transaction managers' agents, etc to manage house price escalation and to formulate a strategy for regulating housing price surge.

1.6. Scope of the study

Geographical

The geographical scope of the study has been delimited to Addis Ababa. The study has considered the Residential Houses in the city using information obtained from the Documents Authentication and Registration Agency branches functioning in the city, brokers, and valuers operating in the study area.

Thematic

The study investigated Residential house price determination factors considered by brokers that contribute to residential property price escalation. Information related to transferred property characteristics and conditions that create price like has been identified and collected. This research therefore only focuses on how brokers play their role in determining residential house prices in Addis Ababa.

1.7 Limitation of the study

Major challenges encountered while conducting this study encompass a shortage of related literature and empirical studies connected to Addis Ababa; lack of willingness of respondents and brokers to provide complete information, difficulty to reach subjects at their place for the interview, and lack of organized data about the study area.

1.8 Organization of the study

The paper has been organized into five chapters. The first chapter begins with an introduction that incorporates background, problem statement, objectives and research questions, significance, scope, and limitations of the study. The literature review in chapter two offered all theoretical and conceptual frameworks on real estate brokers and their influence on residential house pricing determination. The third chapter discusses the study methodology. The fourth chapter deals with the analysis of the findings. The last chapter winds-up by presenting conclusions and recommendations.

CHPTER TWO

2. LITERATURE REVIEW

2.1 Conceptual Framework

Brokerages: A fee charged by negotiation global organization agency facilitates true estate dealing between the two parties. Levitt and (Syverson, 2008) analyzed whether or not any shopper protection justifications laws exist for brokers' service exists. In line with their ideas, they connected variables for homes listed with limited-service brokers with those listed with full-service brokers. They found that homes listed with limited-service brokers take longer to sell however eventually sell at similar costs to those listed with full-service brokers. They weighed the trade-off between the lower fees charged by a limited-service broker and to boost the longer time on the market, They reasoned that customers victimization by limited-service and flat-fee brokers weren't worse off than those of victimization by full-service, full-commission brokers. Supporting this analysis, their conclusion expressed that brokers' minimum service laws don't seem to be required to guard shoppers. (Pancak, 2008) examined specific state brokerage laws that will be understood as requiring a minimum level of services. Characteristic associate degree outsize various restrictive provisions; she compared state provisions with the DOJ's computing device that lists states with minimum service laws. She found that the DoJ list was incomplete and incorrect.

Real Estate marketing: Selling a residential house as a multi-dimensional artefact, characterized by sturdiness, structural inflexibility furthermore as abstraction fixity is tough to form group action. Every residential unit encompasses a distinctive bundle of attributes: its accessibility to figure, transport, amenities, structural characteristics, neighbourhood, and environmental quality (Yang, 2000 and Watkins, 1998).

A house represents not only a group of structural characteristics but also a collection of location-specific characteristics conjointly. Considering the market within which housing is listed, (Raymond and Peter, 2000) mentioned that the housing market differs from that of the much alternatively differentiated merchandise. It is not like alternative merchandise that doesn't seem to be spatially unnatural producers (i.e. property owners) who cannot transport their product from one location to another. Within the

housing market, there may be a 'Package Purchase" that has managed purchases of three things at the location of the house, and neighbourhood.

The real estate market contains a massive impact on the economy as fully perceived in a lot of definitions of unremarkably used terms of close land and housing. The term land means real or physical property, buildings, air rights higher than the land, and underground rights below the land. “Real” comes from the Latin root res or things. Others say it’s from the Latin word rex, which means “royal,” since kings are accustomed to owning all land in their kingdoms. (Amadeo, 2019)

The residential land market is characterized by advanced, confidential, and rare market transactions, with the heterogeneous product and high information and group action prices. Getting a house is typically the only largest monetary call created by patrons in their life and represents over a half-hour of a family’s web price. A National Association of Realtors 2008 survey reports that, in 2007, eighty-four of sellers were aided by true agents. On commerce, their home and eighty-one of patrons used a true estate agent to get their home. Solely thirteen house owners selected to proceed to pay a commission and conceive to sell their home as a For-Sale-By-Owner (FSBO). (Peng Liu, 2009)

Broker: Means a person who performs any act specified in the definition of a salesperson who performs professional service. A broker is a person who functions as intermediation between two or more parties in negotiating agreement bargains or the like. The other terms of brokers are persons or a company that acts as an intermediary between buyers and sellers. Brokers exist not just in the financial markets, like in the real estate market, the commodities market, and the art market, the boat market, and the labor service market. Their mission is to complete documentation for a real estate transaction between the buyer and seller. Brokers can work independently or employ other agents. The biggest difference between brokers and agents is that the broker can work on his own, while an agent must work under a licensed broker. (Beck, 2009)

Real estate broker: Means a broker representing a buyer, a seller, or both, in a real estate transaction and who is of licensed loyalty and facilitate a real estate transaction by assisting both the buyer and the seller. Their mission is to complete documentation for a real estate transaction between the buyer and seller. The real estate brokers’ characteristics influence sale outcomes for house agents provide knowledge of local market conditions, home presentation, and marketing know-how to buyers. Real

estate brokers are usually compensated for their services through a commission rate calculated on the final sales price of the house. A broker refers to an individual with a state-issued license to transact real property (Jackson, 2003)

Valuation: Property valuation is the heart of all economic activity. In everything, we tend to do as an individual or as teams of people in business or as members of society are influenced by the useful thought. A sound operating data of the principles and procedures of valuation is important to all types of choices about property shopping, selling, financing, developing, managing, owning, leasing, trading, and within the ever-more-important matters involving taxation concerns (Pornchokcha, 2006).

The basic goal of property valuation is to produce a life of the utility derived through access and management of the property. (Davanzati, 1588) explained the utility theory useful by the conflict that the worth of products depends on their utility and rarity. It's not the absolute utility that counts rather it is a utility concerning the number offered (Screpanti and Zamagni, 2005). The worth of property is set through the flow of services it's capable of producing for the satisfaction of human needs; i.e. the increment in well-being it is dependent upon, or – what's an equivalent – the impairment of well-being that its loss should evoke (Mises, 1998). In general, the term property describes a legal concept. It refers to the foundations that govern people's access to and management of physical things (tangible assets) like land, natural resources, and made merchandise further as of non-physical things (intangible assets) like inventions or written agreement rights and monetary claims belongings. It refers to the possession of the land and its semi-synthetic enhancements hooked up to land e.g. buildings (Appraisal-Institute, 2001).

The requirement for appraisals arises from the heterogeneous nature of property as an associate investment class: the number of properties in the identical area and every property disagrees from one another in their location - that is one among the foremost necessary determinants of their worth.
(Hutchison, 2005), states that a properly written appraisal is helpful if the property may be distinctive. There hasn't been a lot of activity within the seller's space recently. Co-owners disagree concerning value, or the area unit, alternative circumstances that create troublesome to place a price on a property.

Approaches: Participants within the property market unremarkably consider worth in three ways: the present value of reproducing or exchange a building minus associate estimate for depreciation, and the

worth of the land (and entrepreneurial incentive, if applicable to the worth indicated by recent sales of comparable properties within the market. These different viewpoints form the idea of the three approaches that appraisers use to value property. These are the value, sales comparison, and income capitalization approach. One or more of those approaches might not apply to a given assignment or could also be smaller due to the character of the property. The approaches to value are applied within the context of the valuation process.

Appraisal: Are professional valuation services. "A real estate appraisal is the process of developing an opinion regarding the value of the real property based on the knowledge, experience, and professional assessment of value by real estate appraisers". While performing credible estimating, appraisers must use approaches specified by the International Valuation Standards (IVS).In the appraising of the property value, the importance of property location is influenced by various factors: distance to work, proximity to health institutions and other important facilities, proximity to public transport, good traffic connection, parking, quiet neighbourhood, view, orientation, tidiness of neighbourhood, and green environment (Appraisal Institute, 2013).

Professional land appraisers perform a useful function in society and offer a spread of services to their clients. They develop opinions of several sorts of property values and assist in various decisions about land. Standards for the appraisal profession are set forth within the Uniform Standards of Professional Appraisal Practice (USPAP) developed by the Appraisal Standards Board of The Appraisal Foundation. USPAP specifies the procedures to be followed in developing and communicating an appraisal and the ethical rules for appraisal practice. As defined in USPAP, an appraisal is an act or process of developing a useful opinion. The valuation process may be a systematic procedure the appraiser follows to answer a client's question about real estate value.

The most common sort of appraisal assignment is that of the development of an opinion of the market price. However, due to their specialized training and knowledge, appraisers can provide a good range of additional appraisal services from investment consultation to advice on various businesses and personal financial decisions.

Real estate property: Real estate property refers to land and the improvements made to land, alongside the right to use them. Land can be viewed from physical reality on which we do all the activities and found materials we use. From the legal point of view, it encompasses from the center of the earth the infinite in the sky. Land as a commodity embodies an economic concept and is a basis of economic

production and development and creation of wealth. As it is immovable and indestructible, it has cultural and psychological attachments for the people at all (Land Administration Guidelines, 1996). In short, it has multiple competing and conflicting attributes.

There are four sorts of land properties and their definitions. Consistent with (Amadeo, 2019), Commercial land includes shopping centers and strip malls, medical and academic buildings, hotels, and offices. Apartment buildings are often considered commercial, albeit they're used for residences. Industrial land includes manufacturing buildings and property and warehouses. The buildings are often used for research, production, storage, and distribution of products. Some buildings that distribute goods are considered commercial land. The classification is vital because the zoning, construction, and sales are handled differently. Land includes vacant land, working farms, and ranches. The subcategories within vacant land include undeveloped, early development or reuse, subdivision, and site assembly. Residential land includes both new construction and resale homes. The foremost common category is single-family homes. There also are condominiums, townhouses, high-value homes, and vacation homes (Henilane, 2016).

Real estate: means any interest or estate in land and any interest in business enterprises. Modern definitions specialize in the very fact that a true estate refers to the land and fixtures together, as distinguished from the real estate about ownership rights of the land itself. An up to date definition of land is provided by investors: land may be a term that encompasses land alongside anything permanently affixed to the land, like buildings, specifically property that's stationary or fixed in location. The term land is often defined as, the private ownership of a limited parcel of land, which incorporates the air above it and the ground below it, and any buildings or structures attached to the bottom (Miles, 2007). Land can exist within the sort of business and/or residential properties, which may be sold either by relate or directly by the individual who owns the property. Ownership of land is taken into account as a true property that has a sale or transfer right granted by law (Miles et al, 2007).

The housing problem has become a feature of most countries, especially developing countries that face ways to deal with huge numbers of individuals. The demand is different from one country to another consistent with country characteristics, which affect all economic sectors particularly the housing sector. Housing plays a crucial role in countries' economies, and therefore the housing sector represents a notable ratio in total economic activity of most countries. (G Sheibani and Dr. T. Havard, 2004)

Residential housing isn't a liquid asset, as anyone who has ever tried to sell a house can attest. Because housing is illiquid, home sellers often employ land brokers to help with a purchase. The degree of

housing market illiquidity is most frequently measured by time on the market (TOM). Varieties of studies that have examined the determinants of TOM (Belkin, Hempel, and Leavey, 1976) demonstrate that TOM may be a positive function of the difference between the listing price and asking price.

2.2 Theoretical underpinning

2.2.1 Prospect Theory

"According to the Prospect theory, people value gains and losses differently and as such will base decisions on perceived gains rather than losses". Price is given to gains and losses rather than to final properties and likelihoods which are replaced by decision weights. In particular, people's skinny result is just likely in comparison with results that are acquired with certainty. In addition to this, "the price function is usually curved in for gains, turned in for losses showing diminishing bordering price, and is normally vertical for losses than for gains. Therefore, decision weights are generally lower than the corresponding probabilities for events that are most probable but higher for those that are less probable" (Kahneman and Tversky, 1979).

"Thus, house suppliers with a prospective loss were expected to put a higher reservation price than one with a potential gain. Evaluating seller behavior in Boston housing found evidence that loss of a vision explained the behavior of real estate sellers in their choices of asking prices and in their decisions as to whether to accept an offer or not" (Genesove and Mayer, 2001).

2.2.2 Transaction Cost Theory

According to Coase's influential article that sparked modern work on transaction costs and property rights, it had been the work of the property rights school. Transaction costs are often defined as checking out trading partners, negotiation, verifying information, monitoring, controlling, and enforcing the contract including eventual litigation expenses and all costs of getting into an agreement or contract (Coase, 1960).

Complete property rights, complete information and transaction costs, and no income effects, private negotiation are considered as assumption of four conditions to satisfy his argument and can be sufficient for the optimal amount of externality to be attained. Coase supposing if conditions one (1) to four (4) are satisfied, he infers non-public intervention between the purchaser(s), and therefore the supplier(s) are going to be adequate for achieving the optimum amount of transaction. Hence, the Coase statement suggests that the optimal condition is often touched without straight state interference nonetheless

through complete assets of rights (Pearce and Turner, 1990). This doesn't make state rule needless. Property rights are never that complete and the informational requirements are unrealistic and transaction costs, e.g. in obtaining information and enforcing property rights, are likely to constrain private bargaining (Farrell, 1987). Hence, a more direct role for state intervention to deal with environmental externalities and improve the knowledge structure is often justified.

Based on the Coase theories, valuable insights are needed especially for market imperfection or transaction costs. Therefore, the idea directs the state action that can thus prove useful to define, clarify, and enforce property rights and to disseminate information and to scale back transaction costs. North operation sized the concept of transaction cost and showed how it often won't understand and interpret institutions in economic history. North's central hypothesis is that the aim of institutions is to economize on transaction costs (North and Thomas, 1973) and an establishment that gives relative prices, and the technology minimizes transaction costs which is efficient.

North asserted that, within the course of history, western societies have developed from hunter-gatherer to agriculture and to industry by means of ever-increasing degrees of specialization. It's this specialization of labor, facilitated by a concurrent development of institutions, which has made possible the big growth in productivity and income enjoyed by the industrialized countries (North, 1989). In early society, most production and trade take place in small firm units where control and agency problems are minimal because the economy develops, still more trade takes place on distant impersonal markets, and therefore the scale of operations increases. Control and supervision measures, therefore, become essential.

A modern market economy with financial markets, long-distance trade, and large scale production requires a high degree of trust and effective institutions to monitor agents and to punish those who cheat (North, 1991). Hence, the ability of a society to develop efficient institutions that allow for specialization while limiting transaction costs plays a large role in its long-term growth pattern.

"According to the User Cost model, to a homeowner, the cost of using and owning one unit of housing in a given period is the user's cost. The cost is made up of the opportunity cost (forgone after-tax returns of housing equity on alternative assets), out of pocket expenses (mortgage interest payments, maintenances, taxes, etc), and value variation (depreciation and capital losses).When the user cost of owner-occupied housing is lower than the rental price, households would prefer to purchase houses

instead of renting and liquidity constraints are likely to be the main deterrence from homeownership" (Rosen, 1979).

2.2.3 Efficient Market Theory

This theory explains the various types of markets in terms of their efficiency to reflect the available information on stock prices. The theory assumes that all assets are viewed as informational efficient only if the following set of data is readily available. The public data, private data, and historical data are a means of getting superior returns. However, real estate is not considered as being traded in an efficient market, simply because of high transaction cost, infrequent traded assets, and then the big players in the market having specific knowledge (not available in the public domain) of a market may take advantage and earn greater than normal returns, without violating any insider trading laws. Thus, if costs are high, fewer transactions will be undertaken by the firms in the market resulting in less implementation or investment in positive net present value resulting in less employment of the factors of production and lower economic growth. For this study, the efficient market theory will be employed to explore whether the prices of residential real estate properties represent the true price and whether the real estate market is efficient. (Parseen, 2017)

"According to (Fama, 1991) the State of the economy is influenced by various forces and the capital market is no exception". The effectiveness of the market produces fast replies to the financial influences that border every investment. Also, "market actors are progressively directing on the real estate industry the innocent style of investment. Perceived that a market is effective if it corrects slickly to completely reflect wholly accessible data, procedures the evidence real ethically in that the information is not ignored and systematic errors are not made. In an efficient market, information is quickly reflected in the market prices hence giving no opportunity for abnormal profits. In our context, it means that the values of real estate and the growth in the sector will be a perfect reflection of all the information available at any one time". (Fama, 1991)

2.2.4 Agency Theory

"An agency relationship occurs where one party (principal) engages another party (the agent) to perform a task on their behalf. In the real estate market, the principal is the seller or buyer of the house and the agent is the real estate broker" (Rottke, 2001).

"An agency problem occurs in such a relationship when asymmetric information is available to either party. The different types of asymmetric information that come into play in these relationships include

hidden characteristics, hidden information, hidden action, and hidden intentions. All these happen in the time between when the investor realizes he has a problem needing a solution and when the action is executed. This asymmetry affects the pricing of residential real estate's because either party may overprice as they speculate the intentions of the other party. These threats can be countered by solution and approaches which incorporate management and financial elements into an incentive-compatible investment model" (Rottke, 2001).

2.2.5 Theory of real-estate brokerage

Brokerage is usually modeled as listing agents and expending effort to first secure listings then match with selling agents related to prospective home buyers during a nearly and influential paper, (Yinger, 1981) discusses the character of the brokered transaction and develops a proper search model which offers random draws from the population of potential buyers. Search activities of agents are inputs to their output matching buyers with sellers and are the choicest variable for agents within the model.

"The theoretical results of indicated that the no-broker case yields rock bottom sale price and the largest net benefits to the customer and the seller. The transactions which involved one broker and two brokers with the disclosed agency are found to end in higher prices and lower net gains. But still an equitable split between the customer and things during which two agents don't show disclose agency in reference to the customer, the model anticipated the very best sale price, seller net benefit superior to the one obtained within the two previous scenarios, and a zero net benefit to the customer. The latter case is unfavorable to the customer as he mistakenly believes that the subagent is his representative and thus may reveal tips like reservation price. Finally, buyer brokerage and agency disclosed to the vendor with percentage commissions and equal bargaining power yielded an equivalent sale price as within the no-broker case but a lower equitable net benefit. All the agency arrangements considered lowers the seller's net proceeds and increases the buyer's net costs than the no-broker case. However, that the brokerage services enable to scale back search time and administrative tasks that aren't accounted for within the authors' theoretical model" (Bajtelsmit and Worzala, 1997).

The existence of the important estate brokerage industry is usually attributed to high transaction costs inland markets. Brokers are typically expected to plug sellers' properties, assist in contract negotiations, and coordinate the post-contract tasks necessary to shut transactions. Presumably, brokers can perform these duties at a lower cost than sellers. Additionally, to cost efficiencies, brokers can also impact market outcomes. Numerous researchers have investigated whether the utilization of brokers as various

broker actions, broker characteristics and broker/seller legal relationships affect market outcomes within the sort of price and/or time-on-the-market effects (Journal of land Research, 2015)

2.2.6. The modern valuation system

The appraiser used instructions in valuation for an appraisal and this includes the terms "all three appraisal methods to be used. In historical terms, appraisal practice has recognized that there are three main methods of appraisal, namely the Comparison Approach, the Income Approach, and the Cost Approach. Many older appraisal texts give the impression that each one of the three methods should be used when appraising improved property valuation. (Bulletin, 1995)

To facilitate the setting-up of residential property pricing within the countries, there are still missing improvements to the existing price which is often deemed necessary. It's designed to offer practical guidance on the compilation of house pricing, both in developed and developing countries and to extend international comparability of land valuation. It explains the various user needs, gives details on data and methods which will be used to compile residential property price indices (Walter and Radermacher, 2013).

2.2.7. Property Valuation /pricing Methodology

A. Cost approach

The cost approach is one of the three basic valuation methods in real estate appraisal. It has a set of procedures through which a value is derived for a property, by estimating the current cost to construct a reproduction or replacement for the existing structure plus any profit or incentive deducting depreciation from the total cost and adding the estimated sit land value.

Under this approach, the property is valued as a function of what it would cost to buy the land and construct the buildings. The fundamental premise of the cost approach is based on the principle of substitution which asserts that no prudent buyer or investor will pay more for a property than the amount for which the site could be acquired and improvements that have equal utility and desirability can be constructed without undue delay.

The cost approach method is used where properties rarely change hands such as Residential, church, school, libraries and etc. This method determines the capital value of a property by relating its value as a whole to the value of constituent parts and building cost. It is also called the Depreciated Replacement Cost (DRC) basis. This method of estimating the replacement costs of the building and adding to them the value of the land method.

Procedures/Steps in Cost Approach

1. Estimating the value of land as though vacant and available to be developed to its highest and best use,
2. Determining which cost is most applicable to the assignment: reproduction cost or replacement cost,
3. Estimating the direct and indirect costs of improvements as of the effective date of the appraisal,
4. Estimating an appropriate entrepreneurial profit
5. Adding the estimated direct costs, indirect costs and the entrepreneurial profit and there by determine the total cost of improvements,
6. Estimating the amount of depreciation in the structure and allocate it among the three major categories: Physical deterioration, Functional obsolescence, External obsolescence,
7. Subtracting estimated depreciation from total cost of improvement to obtain an estimate of depreciated cost of improvement,
8. Estimating site value improvement,
9. Adding the land value and site value improvement to the total depreciated cost of improvements to arrive at the indicated value of the property,
10. Adjusting the indicated value of the property for any personal property (such as furniture, fixture, and equipment) or intangible asset value that may be included to the cost estimate.

B. Sales comparison approach

According to the sales comparison approach, the market value is equal to the price recently paid for a similar property or interest in the property. The price's problem is to determine what the market considers to be recent in similar cases. Modifications may need to be made for differences between properties used in the comparison and changes that have subsequently taken place in the market or are of a structural nature. If an almost identical house were recently sold next door for a known price but which lacked a particular facility such as a garage or central heating, then slightly different assessments would be expected. The method is often the most simple and efficient means of determining market value, especially for single-family residential properties in an active market (Dale and Mclaughlin, 1988).

Income Approach

Based on the theory within the income approach, the approach is a comparative method and holds that the market value of uninteresting houses is equal to the present value of the net income that

should in the future come from the house. The net income is the gross income less the cost of overheads, such as the depreciation of the building stock and its maintenance and upkeep. It is equivalent to a national rent and must be discounted at an appropriate rate. The value's problem is to determine the net benefits that should come from the property by comparison with similar properties; and then to determine the market discount rate by analyzing recent sales of similar assets (Dale and Mclaughlin, 1988).

Comparison of the valuation methods

The sales comparison approach, the cost approach, and the income approach all three methods used to determine market value are market-oriented and must reflect market data and the market behavior of buyers. According to the sales comparison approach, the market value is determined by adjusting the sales prices of recently sold similar properties. The sales price of the market comparable reflects the behavior of typical buyers in the market place. Adjustments may need to be made for differences between the properties used in the comparison and changes that have subsequently taken place in the market or are of a structural nature. With the cost approach, market value is determined by calculating the replacement cost of an identical home plus the cost of the land underneath the home minus any depreciation over the years since the home was first constructed. Under this approach, the property is valued as a function of what it would cost to buy the land and construct the buildings. The fundamental premise of the cost approach is based on the principle of substitution which asserts that no prudent buyer or investor will pay more for a property than the amount for which the site could be acquired and improvements that have equal utility and desirability can be constructed without undue delay (Bulletin, 1995).

The income approach analyzes the market rents of comparable properties and applies the gross rent multiplier in relation to expected rents from the subject property to determine the market value. The approach is a comparative method and holds that the market value of an interest in houses is equal to the present value of the net income that should in the future come from the house. The net income is the gross income less the cost of overheads, such as the depreciation of the building stock and its maintenance and upkeep. The sales comparison approach is the generally preferred approach to valuing land and residential property. Assessors across North America are making expanded use of automated sales comparison models, especially multiple regression analysis (Dale and Mclaughlin, 1988). These techniques have powerful advantages in terms of keeping values

current and ensuring uniformity. Therefore, for this research, the sales comparison approach has been selected to analyze the residential house price.

Model specification
A general sales comparison model is:

$$MV = S_C + ADJ_C$$

Where MV is a market value estimate, Sc is the sale price of comparable property, and ADJc is the total Rmb adjustment to the sale price of the comparable for quantitative and qualitative differences between attributes of the comparable and the subject property (Eckert 1990).

2.2.8 Brokers issues and dilemmas for property pricing

Regarding the broker's issues for property pricing, they typically necessitate comparisons between the subject property and available market comparable in terms of their relative size, age, condition, tenure, letting status, and quality of the subject property. Sometimes brokers will be faced with a difficult dilemma in that there may have been no comparable transactions to provide any sort of benchmark to work from and this is one of the numbers of imperfections found in the property price. Even when there have been broadly comparable transactions, the motives and power relationships between the parties in any particular deal will never be fully understood by a third party. The economic context for property transactions is constantly changing so that the shelf life of a valuation can be quite limited in rapidly changing markets (David and John, 2004).

“The housing market is facilitated by real estate brokers and agents. This section begins to consider the role of broker intermediation in real estate transactions. It describes the activities of real estate brokers and discusses how they play the role that they do. The nature of brokers' intermediation and entry into the brokerage works the incentive issues that impact transaction performance and the efficiency of brokering allocation in their sector”.

According to (Yavaş, 1994) “a market maker sets an asking price and a bid price, at which he/she buys and sells for his/her own account”. The theoretical model of (Yavas, 1992) “shows that the search costs associated with finding trading partners help to explain the dominance of brokers over dealers in the housing market. More specifically, real estate agents and brokers are licensed professionals whose main job is to match a home seller with a home buyer. Together, they provide a bundle of services to buyers and sellers”. An agent working with a buyer is often referred to as the cooperating agent or selling agent.

Cooperating agents typically attempt to find houses that match buyers' tastes, show buyers prospective homes, advise them in making offers, and provide assistance in the negotiation process. An agent working with sellers is often referred to as the listing agent. The listing agent helps sellers list the house on the Multiple Listing Service (MLS), assists sellers in staging and marketing the house, advises sellers on the listing price, helps sellers evaluate offers and formulate counteroffers; helps negotiate directly with the buyer or the buyer's agent, and provides assistance in closing a transaction. (Han and Strange, 2014)

2.2.8.1 Role of Real Estate Brokers in House Transaction

The role of a real estate broker in the residential real estate market is increasingly important for a number of reasons. First of all, where there is a market economy and an intermediate. The housing market is not an exception for house brokerage as a result of real estate development. Secondly, the shape of a rational housing consumer structure depends on the activity and good operation of house brokerage service in the market. At last, house brokerage can be built a highly efficient housing transaction market by increasing the information efficiency and decreasing the transaction cost in order to ensure the benefit of buyers and sellers (Jud, 1983). House brokers indeed ensure the smooth circulation of the real estate market. Meanwhile, the development of house brokerage services and the service itself depends on the demands of buyers and sellers for the service. Brokerage firms often market their services to home sellers by claiming that intermediation can help find a buyer faster and negotiate a better price as compared to selling the property without aid (Huang and Rutherford, 2007). Some of the early theory and empirical work assume that brokers can better match buyers and sellers, which results in higher sales prices and lower marketing times (Yinger, 1981). This assumption is rooted in the fact that most brokers have access to multiple listing services (MLS). Users of the MLS claim that the system provides a broker with more up-to-date pricing, financing, and market information as well as access to a larger pool of buyers as compared to non-MLS users. If true, then the likelihood of selling at a higher price and in a shorter time frame through the MLS reduces the net cost of hiring a broker. Rational sellers will weigh the net cost of hiring a broker against the opportunity cost of marketing the property without aid. Whether brokers or the MLS help sellers obtain higher sales prices and shorter marketing times is an empirical question.

In recent years, there has been growing academic interest in the workings of the residential brokerage industry. Researchers have examined the question of how the price of housing is affected when a homeowner sells through a real estate broker in preference to sale by the owner. Several empirical

studies (Doiron et al, 1985, and Jud and Frew, 1986) have found evidence that brokers obtain higher sales prices, enabling a typical seller to pass some part of the commission on to the buyer. The task affects real estate brokerages firm and agent characteristics on the price received by home sellers in a multiple listing service.

"An alternative way to examine the importance of commission incentives is to compare the sales performance of properties sold by brokers and properties sold by owners themselves. In recent years, with the diffusion of the internet, the practice of FSBO sales for sale by owner referring to homes that are sold without using a listing broker has gained increasing popularity. Thus in principle, researchers can quantify the benefits of hiring a broker by examining price and liquidity effects of broker listed versus FSBO properties. The estimated premium can then be compared with the commission fees, permitting an evaluation of the efficiency of the commission contract. Although the task for estimating the price premium of the brokers' services relative to the FSBO sounds straightforward, in recent years a debate has ensued over how to transform the estimated price premium into a measure of the net benefit of brokerage services. For example, the National Association of Realtors (NAR) Report (2005) finds that FSBO houses sold for a median price of $198,200, and those sold through a broker went for a median price of $230,000. The report concludes that using an agent brings sellers a significantly higher price (16%). A legitimate concern with such analysis is that it is not clear whether sellers and their houses are otherwise similar for broker-listed and FSBO homes; hence, measured differences in sales price may reflect a combination of effects" (Han and Strange, 2014)

"When the listing brokers receive the commission income from the seller, under the MLS guidelines he then equally splits the commission with the cooperating broker who works on the buyer's side. This is because historically the cooperating broker was viewed as a subagent of the seller and represented the seller's best interest. So it was logical for the seller to compensate the subagent. The obvious incentive problem with such an arrangement is that, while it gives brokers an incentive to work on behalf of the seller to obtain a higher price, it also creates perverse incentives for the broker to work on behalf of the buyer" (Lindeman, 2004). "The advent of buyer brokerage in many states has changed the legal representation in this relationship. In this case, the broker working with the buyer is no longer a subagent of the seller, but rather an agent of the buyer referred to as a buyer broker. Buyers with higher opportunity search costs and less knowledgeable about local market conditions are more likely to seek buyer brokers. (Curran and Schrag, 2000) also looked at the effect of buyer brokerage, showing that

buyer brokerage lowers buyers' search cost and improves buyers' negotiation position in the case of high-end properties".

The broker who works with the customer is usually mentioned because the "cooperating broker typically plans to find housing from the available stock that match buyers' preferences, show prospective buyers homes purchasable, provide them information about comparable home sales that have occurred within the area, assist prospective buyers in becoming pre-qualified for a particular level of financing, advise them on making offers, and assist in closing the transaction. Buyers typically don't pay their brokers directly. Rather, listing brokers compensate cooperating brokers consistent with the terms stated within the MLS listing, which usually specifies an unconditional offer of compensation to any broker that's the "procuring cause" of the sale (John and R. Read, 2007)

. For instance, an inventory broker who charges a six percent commission may offer to compensate a cooperating broker with 3 percent, half the listing broker's commission. Differences in offers of compensation can also support local norms for historical reasons. During the 1990s, most states revised their laws to permit buyer representation, and at an equivalent time, NAR revised its policies, eliminating seller-sub agency as a condition of participation within the MLS. Today, after a decade of agency law reform across the country, it's more common for the cooperating broker to owe fiduciary duties solely to the customer. In some states, however, a cooperating broker could also be a "transaction" broker who has limited fiduciary duties to both the customer and seller and whose role is to assure that the transaction proceeds smoothly altogether. Brokers are required to confide, in buyers, the sort of relationship that exists. Buyers know whom the cooperating broker represents, although the timing of this disclosure varies by state. (Chief and Litigation, 2007)

For decades, buying and selling a house within the US has been a routine process. Residential land agents have traditionally provided a bundle of services to both buyers and sellers. For instance, the local multiple listing service (MLS), which may be a directory of listing typically maintained and purchased by local land firms, enables sellers to list their properties and buyers and agents to look at these properties. Agents also often help with marketing a house through advertising and open houses negotiating a price, and addressing contracting and shutting issue. Examples include helping with inspections, mortgage insurance, and financing (Robert W. Hahn and Jesse Gurman, 2004).

2.2.8.2. Factors affecting the role of Real Estate Brokers

Winkler (2002) has identified economic benefits available for land brokers and customers by using the internet as superior productivity and margin of profit. They also build confidence between land brokers and other services like financing institutions, construction firms, and developers. Presently Sri Lanka has entered into an internet-based brokerage system by developing internet sites and web marketing. The foremost successful businesses, either small or large, make customers feel as they're a part of the business team. The customer feels included in decisions, important to the business, and a valued voice in providing feedback and suggestions for improvement. It must keep in step with its customer's changing needs for a business to thrive. It must accurately identify needs and implement changes to satisfy those needs (Winkler, 2002)

Most businesses can satisfy the essential expectations of a customer by delighting customers and always exceeding their expectations in some way. If the business aims to exceed customers' expectations on every interaction and is consistently ready to do that, they need an honest chance of keeping customers at all times. Providing personal attention to customers, who are getting to reciprocate by being consistently good purchasers of the company's products or services, is a sweet business which confirms the business to hold personal information about customers with their permission in order that they will be personally contacted with special deals or information. The more customers feel as if you're treating them individually, the more likely they're to continue their relationship with the organization (Tahsin, 2004).

Reward customers for being loyal. It provides an important link between business and your customers, improving customer satisfaction and sales. Rewards are often designed to suit business and should include product discounts, free gifts, and special personal assistance. Always ask customers if they know of the other folks that would have an interest in your products or services. Existing customers may be a major source of referrals and new businesses. Through them, get access to new customers who already realize you and have a positive opinion of what you are doing. Thanks to customers for referrals, feedback, and suggestions they create. It makes them feel recognized and reinforces positive behavior in order that they like helping you and referring your business. Merriam Webster revealed that "Ethics are standards of professional conduct and business practices adhered by professionals so as to reinforce their profession and maximize idealism, justice, and fairness when handling public, clients and other members of their profession" (Eaton and Lipsey, 1982)

2.2.9. Factors considered by brokers to decide housing price

These are the most important factors that the brokers need to consider when valuing a home:

1. Historical sale prices

A historical sale price is one of the primary things land agents, appraisers, and prospective homebuyers check out the property of the house. Homebuyers rarely have complete information about the standard of a property within the market and brokers have about seller person's life status. However, each buyer may receive some information. For instance, a buyer can also additionally visit the property face to face and determine whether it's a convenient plan or hire a home inspector to see whether the basement has been flooded. Supported this private information, the customer may decide against purchasing the house. Therefore, if a home has spent too many days on the market, this is often usually interpreted as a negative quality signal, as buyers speculate that there may be flaws that made the property not to be sold to previous buyers and brokers who gather information about the private reason. The sale of a house as the free sale or imposed by other bodies is done to make a decision to rice or reduce the price (Taylor, 1999).

2. Neighbourhood

The neighbourhood is one of the most important influencers of a home's value, liable for both qualitative and quantifiable aspects of a home's appeal. Accessibility to conveyance, school, and market places are a serious consideration for house prices during a highly urbanized area. Land houses with direct access to the general public transport, school and market places, and taxi stands are more attractive and have high price value rates (Tesfaye, 2001). Additionally, by providing more parking spaces for personal care within the area of the houses, their accessibility by private vehicular travel can also be increased. Park which measures the number of parking spaces in residential house sites is thus having a positive effect on the prices of the homes (Tahsin, 2004).

In addition to the above, the varsity system quality and residential prices tend to be strongly correlated. Crime rates, similarly, are negatively correlated with home values within the neighbourhood. Since housing units are fixed in location, they differ in terms of their surroundings, the type of community during which they're located, and their nearness to employment and shopping places. (Aluko Ola, 2008).

3. The market

The current state of the housing market will also influence a home's value. Home prices are shaped by supply and demand, like all other economic assets, and should fluctuate supported by subtle changes within the area's economy. For instance, if there's a shortage of obtainable houses and many individuals looking to manoeuvre to a selected area, home prices will rise. If the general economy is doing well, home prices also will increase.

4. Location

The value of a residential house depends on many characteristics that are associated with both the physical aspects of the property and its location. The location incorporates employment possibilities and other leisure and recreational advantages. The characteristics of the neighbourhood, which include amenities like views, parks, schools, community services, etc., are attributes that influence residential property value. Other attributes that also affect residential property value are those associated with the environment, like environmental factors, safety levels, and existing urban infrastructures, including sewing drainage systems, roads, conveyance, health centers, education centers, and other community services. (Pollakowski, 1982)

5. Area

Eppli and Shilling (1996) test Lakshmanan and Hansen's model, showing that a larger area normally has a better image and is predicted to draw in more buyers for it is a large space, which is more competitive than a little one. Houses in an "intra-center" locality, and following Lusht (1997), the connection between unit size and price tends to be nonlinear, with the price increasing at a decreasing rate with size; thus resulting potentially in a lower cost per unit area for the scale at which the acquisition of single space floor areas increases. It's common within the leasing market that the larger the world leased, the lower the worth value per unit area. This variable is measured in square meter and has a negative effect on price. Due to the attraction of multi-purpose house behaviour, Eaton and Lipsey (1982), Mulligan (1983) conclude that houses located in large centres have a competitive advantage over houses in small centres. Therefore, the larger the centre of the home, the upper the worth per unit area for individual houses; mainly caused by positive external economies emanating from the broader range of products offered and increased in the larger house areas.

6. Age

Residential house designs have modified over time and the age of a house reciprocally affects the worth charged to shop for. Compared to newer houses, older ones suffer from a series of issues, like

inappropriate combine, physical neglect, additionally as older facilities. As a consequence, once facing robust competition from newer homes, older ones got too lower worth levels (Benjamin et al., 1990).

Buildings usually deteriorate over time; consequently, the age of a property is anticipated to own an immediate influence on its condition. Factors like associated availableness of services usually have an inverse relationship with age, whereas older retail units may suffer from building defects like water run and condensation. Lusht (1997) argues that the common-sense assumption is that the higher the condition of the building, the bigger ought to be the utility and therefore the higher the worth. Previous analysis suggests that value commonly do go down with the age of the homes (Sirmans and Guidry, 1993). Age, therefore, represents a look at the value per unit space of a unit stricken by age which is measured in years.

7. Number of levels

Flooring level is the vertical distance between a housing unit and the ground level of a building, whereas structure height is the vertical distance between the roof and ground levels. These vertical structures are important design parameters that designers have to wisely consider at the feasibility stage of a construction project. For example, given a fixed expansion density (plot ratio), a designer needs to decide whether he should construct one super-tall tower or multiple blocks of shorter buildings. Consistent with the earlier results as expected the value of a housing unit is negatively related to its number of floors or units located on floors further away from the ground floor which enjoyed a discount in the price rates and it is statistically significant(Chau, 2007).

8. Quality

“Valuing the monetary value of the house quality and the level of maintenance of a house is an important gap in house price study. Such approximations would be valuable for numerous actors in the housing marketplace. Home-based buyers would have an advantage from this information during the bidding process. Home proprietors would profit from it during renovation particularly when financing their homes with a home equity line of credit and deciding on the need for renovation before selling their homes. Property price evaluators would be able to make available better estimates of property values, and developers might make better decisions regarding the quality of new construction projects. Lastly, advancing organizations and public sector housing agencies would benefit when providing loans or grants for housing rehabilitation and renovation. According to (Mathur 2019), a medium-quality house sells for approximately 25% more than a low-quality house, and a well-maintained house sells for

approximately 5% more than a house that is not well-maintained. The study also reports on the interaction between the quality and maintenance variables and how these variables vary with house size and the number of bedrooms" (Shishir, 2019).

9. Number of rooms

Overall, the rooms in an apartment include a bedroom, a living room, a family room, a kitchen, a dining room, a study, an office. However, bathrooms, laundry rooms, foyers, storage rooms, closets, mudrooms, and lunch nooks are not counted as rooms. In some real estate marketplaces, rental units utilize an open floor plan design, with the open area encompassing the living room, dining room, and kitchen. In such cases, the open area, which is sometimes referred to as a great room, may be counted as three rooms even though there are no walls that divide them up. The limited body of research and expert opinion available on the relationship between the number of rooms and house prices is that homes with more bedrooms are sold for many prices on average. In fact, a study of median home price data by Andrew (Crossley, 2018) for New Delhi found that an extra room increases house prices (Andrew, 2019).

10. Per-capital financial gain

The personal capital financial costs co-integrated once as financial gain and high price conjointly will increase the gap between the 2 which could also be a helpful indicator of housing price. Square measures that are higher values than or below their equilibrium values are a helpful predictor of future change in housing values. Conversely, if costs and financial gain aren't co-integrated, the error correction specifications which are common and house costs needn't stagnate or fall simply because they need full-grown financial gain. Suppose that the availability of housing, as well as land, slopes up either as a result of there's a restricted provision of enticing land or owing to partition restrictions (Glaeser and Gyourko, 2002)

11. Interest rates and Residential land evaluation

The real estate markets will extremely be compact by the volatility of interest rates. The power of an individual to buy residential property is greatly stricken by the rate volatility. This can be a result of a drop-in rate of interest. The value of shopping for a house on the mortgage is considerably reduced, consequently increasing the demand for land property and escalating the costs. On the contrary, an increase within the rate mechanically will increase the price of exploiting a mortgage, consequently reducing the demand for land, and therefore lowering their costs. Low-interest rates would encourage consumers to accumulate a lot of homes as a part of the money that might otherwise be accustomed to

pay interest to the investor which is obtainable to them. Such a situation might attract new consumers into the market, resulting in various offers bids on homes associated with an uptake within the overall costs. The speed of interest has a massive impact on getting power to the extent that a great deal of individuals mistakenly believes that the sole deciding factors within the valuation are land. Land costs are driven in several directions by interest rates since they have an effect on the demand and provision of capital as the specified rate of investment and capital flows (Karoki, 2013).

12. Inelastic housing supply

House prices are a 'jump' variable, equating short-run housing demand with fixed short-run supply. Quantities and prices of houses adjust over time to establish spatial equilibrium whereby the benefits and costs of living in an area are equated. Regional house price dynamics in response to demand shocks are of central policy importance. Resources may be misallocated where short-run prices diverge from equilibrium; prospective purchasers (sellers) suffer where prices are higher (lower) than equilibrium. Social policy concerns relating to housing affordability are magnified where prices jump well above long-run equilibrium. Given these concerns, we analyze two inter-related features of new housing supply determinants and the dynamics of price adjustment. We treat housing supply as fixed in the very short run, so demand shocks are reflected initially only in-house prices rather than in quantities (Roback, 1982).

New house supply reacts to house prices and to costs of developing new houses. Rational agents anticipate these supply responses in their pricing decisions following a demand shock; thus, the dynamics of price adjustment are related to anticipatory local house supply responsiveness (Blackley and Dixie, 1999).

13. High concentration of aggressive mortgage disposition instruments

Banks play a vital role in the finance of land through mortgage finance. They lend for the acquisition of land for development and existing buildings; they finance construction projects; they lend to non-bank and finance firms that they'll finance land and that they lend to non-financial corporation’s supported by land collateral. In America, residential construction is peculiarly obsessed with mortgage loans, for example, the majority of one to four-family housing square measures being bought with the help of mortgage loans, and this have semiconductor diode to an amazing growth within the land sector in the USA. With improved mortgage facilities, the performance of the $64000 estate during a country can rise in terms of less risk, higher returns, and a lot of income. These 2 variables square measure completely related to associate improvement in one in every one of them can mechanically cause improvement

within the alternative. With a poorly developed land finance market, it makes it troublesome for corporations or households to mobilize the capital affianced inland. This denies corporations the chance to use the land as collateral for raising investment finance (Constantine and Magdlini, 2006)

14. Psychological factors

It is easy to know that physical defects during a house will reduce its value, but the difficulty becomes less clear when the defect is psychological instead of physical. Assume home is in excellent fitness, but suppose it's also either reportedly haunted or has been the location of a murder, suicide or another mayhem it's as valuable as a comparable property where these events haven't occurred, such properties are mentioned as ‘‘psychologically impacted.’’ More formally, a psychologically impacted property is any parcel of real estate, or structure thereon, where the existence of certain circumstances, suspicions or facts, may create an emotional or psychological disturbance or concerns to a prospective purchaser, with the potential of influencing the buying decision. If prospects are discomforted by such events, they'll either not make a suggestion on the property or reduce their bid. (Kang and Gardener, 1989)

15. Public expectations of future price increases

The financial risk effect associated with a household’s current dwelling. Under standard assumptions, an increase in asset price uncertainty increases the financial risk associated with future asset returns and hence makes the asset less desirable. The performance of single-step estimation, because there is less too learned from estimation because there are more limited in terms of statistical power. In this respect, note that estimate a single coefficient common to all urban areas for the distance to the centre. (Haurin and Gill, 2002)

2.2.10. Hedonic price Models

The theory of hedonic price models has been widely applied to analyze housing prices in countries like the US (Sander & Polasky, 2009), France (Gourieroux & Laferrere, 2009), Norway (Osland, 2010), Japan (Shimizu, Takatsuji & Nishimura, 2010), Austria (Helbich, Brunauer, Vaz, & Nijkamp, 2013), and Netherlands (Ozyurt, 2014). Similar studies in China are still scarce. The residents' average income in Shanghai was less than one-tenth of that in the US; the average housing price in Shanghai was higher than that in New York and Chicago. The ratio of housing price and revenue at middle-income residents lacked housing affordability through bank loans. Under such circumstances, it is meaningful to further identify patterns and determining factors of housing prices. In this study analysis questions such as what the most important factors are determining the market value of house prices are still unidentified regard to brokers considered. Therefore, the main purpose of this study is to examine the determinant of

housing prices considering their relations with a series of independent variables including income, information, finances, Market, neighborhood, and accessibility to the infrastructure. (Luan and Zhou, 2012)

There have been many studies on housing prices in China in the last ten years. For example, (Zheng, Kahn, and Liu, 2010) used hedonic models to examine housing prices. However, while many studies have analyzed the real estate market on the macro level, studies of housing prices on the micro-level are still limited. Housing prices in Chinese cities, particularly in Shanghai, Beijing, Guangzhou, and Shenzhen are among the highest in the world. The price is clearly showing as beyond affordability for most families and strongly affects the quality of life in urban populations. Accordingly, the price for one house is likely to be most strongly affected by the price of neighboring houses, although the degree of influence remains to be explored. Hedonic models may be the most appropriate tools to understand this Hedonic model deconstructing housing prices into component attributes and acquire the estimated values of these attributes and evaluate housing prices according to their attributes (Zhonget al, 2012). Cited in (Journal home page, 2017)

Several different approaches have been adopted to improve the accuracy of housing price predictions. Among these, Ordinary Least Squares (OLS) regression is perhaps the commonly employed hedonic pricing approach. OLS has several distinctive features, such as simplicity of calculation, fast computation, and easy interpretation. However, since many hedonic problems have been generated by the variables, researchers have challenged the validity of the (OLS) regression. The resultant t-values make it impossible to decide; whether some explanatory variables are significant in modeling the housing prices. Small sampling variability is also a potential weakness in OLS regression (GAOLi, 2011). Cited in (Habitat International, 2017)

In the past three decades, the hedonic price model was widely used to evaluate the value of houses worldwide. The hedonic price model decomposes its object of study into factors attribute and acquires the estimated values of these attributes. In the field of real estate, the hedonic price model commonly uses regression analysis to estimate the effects of various housing attributes including structural attributes, accessibility attributes, and neighborhood attributes on housing prices (Wilhelmsson, 2002). Among them, the accessibility attributes and neighborhood attributes contain the main location factors. To reflect the impact of house price determinants on the housing prices, the brokers' effect should be considered. To resolve this problem, we further apply the factors using the hedonic price model. One

important issue of house hedonic price model construction is the integration of factors effects into the model. If the brokers' factors consider effects are not properly identified, a series of problems can face establishing house price transactions. (Journal homepage, 2017)

The hedonic housing prices model is a method to analyze the relation between housing prices and their attributes. Traditional hedonic price models set every attribute of housing as an explanatory variable and set housing prices as the dependent variable (Chau& Chin, 2002). Generally, the housing price can be classified as:

P = f (H, N, M, L, C, I, S, A, P, F,)

Where H is the historical sale prices, N is the neighborhood, M is the market, L is the Location, C is the per-capital income, I is the Interest rates and residential real estate pricing, S is the Inelastic housing supply, A is the High concentration of aggressive mortgage lending instrument, P is the Psychological factors, F is the Public expectations of the future price increase. Ordinary Least Squares (OLS) is usually used to estimate housing prices in traditional hedonic price models. OLS assumes that error terms are independent and identically distributed, samples are independent of each other, and explanatory variables are independent and exogenous. OLS model can be defined as:

$$Y = \alpha + X\beta + \varepsilon$$

Y is a *n* vector of the housing prices, *a* is a *n* vector of parameters, *b* is a *k* vector of the parameters, *X* is the *n x k* matrix of the combination of attributes and ε is an *n x 1* error term. By examining their parameters, the effect of each attribute can be analyzed.

2.2.11. Criteria for the brokering professionalism

1 Broker's professionalism

Brokerage professionalism may be a critical element of professionalism in supporting organizations to develop and maintain competency and organizations report. The competence of brokerage helps the clients' community confidence and trust in their tasks. Professionalism is additionally considered as a broad concept that encompasses education having a sound for brokers' professional qualifications. The training and knowledge development has a commitment to participating in continuing professional development. The broker ethics adopt and apply high standards of ethics and integrity. Clients also specialize in treating clients honestly and fairly and acting in their best interests and continual improvement striving to exceed legal and regulatory standards implementing. Professionalism is closely

linked with competency, and terms are sometimes used interchangeably. All aspects of professionalism including the education required of skilled services professionals; their ethics and integrity of the extent to which they act within the interests of clients. During this study, identify as professionalism on the brokers' trust deficit of Ethiopia. (IBCC own motion Inquiry Report, 2018)

2. Educational qualifications of professional broker

The Knowledge on the brokerage task rules of applicable legislation, regulation, duties and levies, standards, and organizational policies. Such knowledge is gained through a mixture of formal education, training, and on-the-job experience. Many brokers have recognized the necessity for competency and professionalism within the industry for an extended time. Formal educational brokerage qualifications also are an important element of professionalism. Subscribers noted that gives the theoretical foundation to enable brokers to know the task upon their advice and therefore the complex legal context during which they work. Recognizing and identifying a sound educational qualification together for the crucial elements of brokerage professionalism. Formal educational qualifications also are a key way during which brokers can meet an equivalent regulatory training standard (Ibid).

3. Competency-based professional brokers training

Competency is the backbone of service standards and to develop it. A brokerage needs on-the-job support and knowledge additionally without just formal education. Identifying competency-based training is as essential or a high priority within their task activities, including on-the-job technical and self-guided study, online or computer-based events and training, various peer learning opportunities, and attendance at seminars and conferences. Competency-based training is additionally valued by staff themselves, who fiend that it increases job satisfaction and contributes to their individual career development. As needed by the Service Standard the organizations keep records undertaken by staff and indirectly assess its effectiveness by monitoring staff performance (Ibid).

4. Job skills and tasks of professional brokers

Brokerage organizations identified a good range of skills and tasks that a private must be performed to be considered competent. These include hard skills like the power to manage placement, process a claim, prepare a quotation summary, provide advice, or manage renewals. Hard skills also include the technical ability to use systems, like core broking and document management systems; the capacity to follow the organization's procedures and processes; and self-management skills like the power to manage one's time and produce accurate work. Software skills including the power to figure collaboratively with others during a team for the advantage of clients are needed. (Ibid)

5 Attitudes and behaviors brokerages

Attitudes and behaviors are considered by many organizations to be equally important for the knowledge and skill to perform job skills and tasks. Positive behaviors and attitudes like client focus, commitment to quality, respect, and empathy or working positively during a team are vital for service quality evidenced by client satisfaction and retention (IBCC own Motion Inquiry Report, 2018).

Overall land Valuation purpose

Consistency, objectivity, and transparency are fundamental to putting together and sustaining public confidence and trust in valuation. Successive achievement depends crucially on valuation providers possessing and deploying acceptable skills, knowledge, experience, and ethical behavior, both to make sound judgments and to opinions useful clear, and unambiguously to clients and other valuation users in accordance with globally recognized norms. (RICS Valuation Standards, 2011)

Exchanging information about future as against moment prices

People's analysis focused principally on price transparency regarding past or current prices including the competitive impacts of transparency concerning future prices. It's common practice in some markets for sellers to pre-announce price changes. Buyers could presumably enjoy learning future prices since this enables them to have more optimal time for their purchases. Buyers may additionally provide a minimum of future price announcements utilized in effect to supply "sale" prices to raise informed buyers. Neither of those benefits will probably be realized in situations where advance price announcements are focused on sellers instead of buyers, or where there's no commitment to transact at the pre-announced prices (i.e. sellers are liberal to change prices beforehand of their becoming effective). At an equivalent time, there appear to be some clear dangers involved in permitting sellers to speak no committed price intentions to their rivals.

A little controversy could be suggested that, given the risks posed by upward and downward market movements, an excessive amount of faith is usually placed in property valuations. There's some misunderstanding on the part of some clients regarding what a property valuation really signifies. Some clients of values believe that simply because the worth of a property falls, they will successfully sue a valuer for providing miss leading information. Such action is unlikely to succeed unless there's clear evidence of negligence within the process that a valuer followed and which led to an erroneous valuation. Peoples don't have an understanding of policy which guarantees that the worth of a property will never fall below the datum provided by the valuation (RICS Valuation Standards, 2011).

2.3. Empirical Review

The empirical review section will explore both the developed and developing countries' studies which are related to the study topic.

In the global context, most of the developed countries have well-established procedures for entrance to the real estate brokerage industry and they obtain the license. The argument for maintaining service requirements as a condition for having a license is not persuasive. Licenses exist to ensure a standard of service quality in a given profession, but there is no reason to believe that agents who narrowly tailored services and charge accordingly will do any worse of a job or harm consumers in any way. It is obvious that just having a license may not ensure the standard of quality of performance. Efficiency means maximizing the benefits to consumers as well as profits to brokers. Efficient transaction indeed refers to both aspects of consumer and broker, but maximum profit cannot be merely considered as an efficient transaction to a broker. An efficient broker should gain something beyond profit such as customer loyalty, enhancement of image, free marketing. In the sense of that when considering the view of customers, there are several types of research carried out to determine the perceptions of customers on service quality of brokers (Wickramasinghe and Ariyawansa, 2015).

2.3.1 International practice

In the international context, most of the developed countries have well-established procedures for entrance to the $64000 estate brokerage business and get a license. The argument for maintaining service necessities as a condition for having a license isn't persuasive. Licenses exist to make sure a regular service quality in a very given profession; however, there's no reason to believe that agents WHO narrowly tailored services and charge consequently can do any worse of employment or hurt customers in any approach. It’s obvious that simply by having a license it should not make sure the customary of quality of performance. The economical mean maximizes the advantages to customers likewise as profits to brokers. Economical group action so refers to each aspect of client and broker, however, most profit can't be simply being thought of as associate economic group action to a broker. The associate economical broker ought to gain one thing on the far side profit like client loyalty, improvement of image, free selling. Within the sense of that once considering the read of shoppers, the area unit searches are allotted to work out the perceptions of shoppers on service quality of brokers (Wickramasinghe and Ariyawansa, 2015).

Moreover, Stewart (2009) has mentioned that understanding the angle of the buyer isn't a straightforward task. Consumer’s perspective of service quality differs from each other and takes a

unique approach. In association, thoroughgoing north geographic region study noticed that commerce ability; competence, integrity, market information, and talent to know consumer desires area unit important factors property customers contemplate in their alternative of the property agent. Likewise, as known property as a capital investment property has additionally been represented as a capital-intensive business. It is usually this can be as a result of property investment needs large capital outlay that is often on the far side of the capability of the medium money establishments. It is, therefore, necessary that one makes the proper alternative concerning who to handle what most likely is ones' single largest money investment. Consequently, barely associate expense however additionally associate investment which can gain international corporations, with their producing plants, their distributors and suppliers and currently more and more service sector corporations, starting from money to legal, have international footprints (Wickramasinghe and Ariyawansa, 2015)

2.3.2 The practice in developed countries

2.3.2.1 The USA Practice

In many ways, the residential property brokerage trade resembles the yank ceremonial trade that Mitford as an expert exposed in 1963 within the yank. Families composing for funerals were frequently asked to pay one worth for a bundle of services, several of that they failed to want or wish. The words of the 1983 Federal Trade Commission (FTC)'s a multi-year study of the residential property brokerage trade still stand the marketplace for property brokerage service doesn't accord with the customary model of competitively functioning markets.

The strange nature of the fee structure has additionally LED the trade and press to report that average commission rates have fallen from regarding six p.cto five p.c between 1991 and 2004. Even the typical commission has still accumulated in bucks over that amount, even once adjusting for inflation (Mark S. Nadel 2012).

Ten states have recently enacted laws requiring a true estate broker to produce a true estate shopper (buyer, seller, landlord, or tenant) with a minimum level of services, as well as needs to assist and take over, to give and receive offers, and to answer queries. The U.S. Department of Justice (DOJ) antimonopoly Division and the U.S. Federal Trade Commission (FTC) each oppose these kinds of needs as a result of their anti-competition, and each agency lobbied heavily against state enactment. These kinds of laws are unit deemed anticompetitive, primarily as a result of the forestall in a limited-service

property broker from catching with a merchant to produce solely in multiple listing services (MLSs) for a flat fee (Alabama property Commission, 2011)

According to USA broker's expertness procedure, once gaining some years of expertise in property sales, a salesman might plan to become authorized as a true estate broker (or Principal/qualifying broker) so as to have, manage, or operate their own brokerage. Additionally, some states permit school graduates to use for a broker's license. CA permits authorized attorneys to become brokers upon passing the broker communicating while not having to require the requisite courses needed of an associate agent. Unremarkably a lot of work and a broker's state communicating on property law should be passed. Upon getting a broker's license, a true broker might still work for an additional broker in an exceedingly similar capability as before (often cited as a broker associate or associate broker) or take control of their own brokerage and rent different salespersons (or broker), licensees. Turning into a branch workplace manager might or might not need a broker's license. Some states permit authorized attorneys to become property brokers while not taking any communication. In some states, there are not any "salespeople" as all licensees of area unit brokers.

Regarding the connection between agencies with purchasers conventionally, the broker provides a traditional full-service, commission-based brokerage relationship below a signed listing agreement with a merchant or a "buyer representation" agreement with a purchaser. So, making the below common law in most states centers relationship with fiduciary obligations. The vendor or purchaser is then a shopper of the broker. Some states even have statutes that outline and manage the character of the illustration. Agency relationships in residential property transactions involve the representation by a true estate broker (on behalf of a true estate company) of the principal, whether or not that person(s) may be a purchaser or a merchant. The broker and his authorized property salespersons (salesmen or brokers) then become the agents of the principal (Blanche, 2003).

2.3.3 Developing Countries Practice

2.3.3.1 Practice in Sri Lanka

In a global context, there are well-established duties and responsibilities, rules and regulations, and code of ethics to govern the unethical behavior of real estate brokers through the registered real estate brokerage industry to have an efficient real estate transaction (Bardhan and Kroll, 2012)

In the Sri Lankan context, the economy of Sri Lanka has gained a significant boom due to the cut back of uncertainty in investment after ending up the war which continued for 30 years. Because of stability in macro-environment factors, perceptions of investors to invest in every section of the economy have enhanced. Among all these sections real estate industry will be one of the most attractive segments as it, directly and indirectly, affect development (Gardiner, Heisler, Kallberg and Liu, 2011)

In the Sri Lankan brokerage industry, mainly there are two types of brokers as individuals and organizations. Usually, individual brokers have entered into the brokerage industry just by their experience, other than having a knowledge-based background. But in the case of brokerage companies, most of those companies are well-reputed and expanded throughout the country. These companies are performing their tasks and engaged in various types of properties such as residential, commercial, industrial recreation (Steven and Syverson, 2013)

Still, the Sri Lankan brokerage industry is at the primary stage as a profession. As well as unfortunately there is not any sophisticated database to obtain information regarding real estate brokers. Since Sri Lanka is not having a registered brokerage industry, there is a free entrance to brokers. Hence it is clear that with this expansion, the entry of new brokers has significantly increased. Furthermore, as there is no structured or well-established way to enter into the profession, the opportunity to have efficient transaction is at a risk in terms of maximum benefit to consumers while ensuring maximum profit to brokers (Steven and Syverson, 2014). Real estate brokers are one of the main drivers of the growing economy and the enrichment of the role of the broker will be one of the pillars of industry success by not only reaching the profit of broker but also ensuring customer satisfaction. (Lawrence, 2012)

2.3.4 Local practice

(Negash, 2010) investigated the real estate price in Addis Ababa for small families by using the hedonic pricing model. The results of the study revealed that location and plot size has a significant effect on the real estate price. Accordingly, a ten percent increase in plot size around CMC will cause a 5.5 percent increase in real estate prices. The same percentage increase in Alemgena results in a 4.5 percent increase in real estate prices. The study also identified that house prices go up by 10 percent during the Easter holiday period. In line with this study Sisay (2006), examined the implicit price of housing characteristics concerning the physical and location of Addis Ababa. The result of the study indicates that the housing typology, plot size of the house, and floor area of the house have a positive significant

impact on the house price of Addis Ababa. Whereas, the age of the house has a negatively significant impact on the house price of Addis Ababa (specifically on real estate prices).

As (Sebsbe, Muhdin, and Solomon, 2017) examined rental house price determinants in Hawassa city. To achieve the intended objective, the study used cross-sectional data obtained from 190 samples selected from 3 sub-cities in Hawassa city. To identify the major determinants of rental price, Ordinary Least Square (OLS) method is adopted. The regression result for determinants of rental price indicates that a number of rooms, the total area occupied by the house, health center availability and housing typology dummy variable for transport or taxi availability, hospital or clinic availability and categorical variable for housing typology (i.e. categorical variable for housing typology being private and condominium house) are statistically significant and positively affect rental house price. On the other hands, the floor area of the house, number of bedrooms, dummy variable for the availability of market and school are statistically insignificant, therefore has no statistical effect on rental house price.

The market of residential houses in Addis Ababa is not well developed when compared to most developed counties. Both the buyer and seller of a house involved higher transaction costs in the searching process of the house. The prevalence of higher transaction costs in the housing market is the result of inadequate knowledge about the market value of residential houses. Because of information asymmetric, the need for the broker in the housing market becomes a necessity. Brokers assist buyers and sellers of the house by providing information about the price or determinants of the house in the market. But the way and the manner how brokers operate are not known. Besides, whether the process of house transaction facilitated or impeded house transaction needs to be identified. The other significant problems of housing price-relates to its valuation, and factors that affect its price. The value of the total housing stock in Addis Ababa was estimated for property taxation. So even if the LIS hence estimates the price of the house; its establishment the data is not updated in the valuation system of the main determinant factor of the house. Lack of updating of the information in the database has created a problem for the city government to collect the required revenue gotten from transaction charges of the residential houses. They constructed houses should have been valued by skilled technicians whenever these houses are transacted rather than guided by brokers, and there is no standard valuation procedure across sub-cities.

Generally, the value of a house is highly correlated with attributes that are attached to it. The proximity to employment, schooling, availability, and accessibility of public transport facilities and social

infrastructure in the neighborhood are among the major quality attributes of housing (Anthony, 2012). Therefore, the rental units located in the inner city with easy access to social infrastructure and services would attract higher rent compared to the urban periphery where access to these facilities is difficult or simply non-existing.

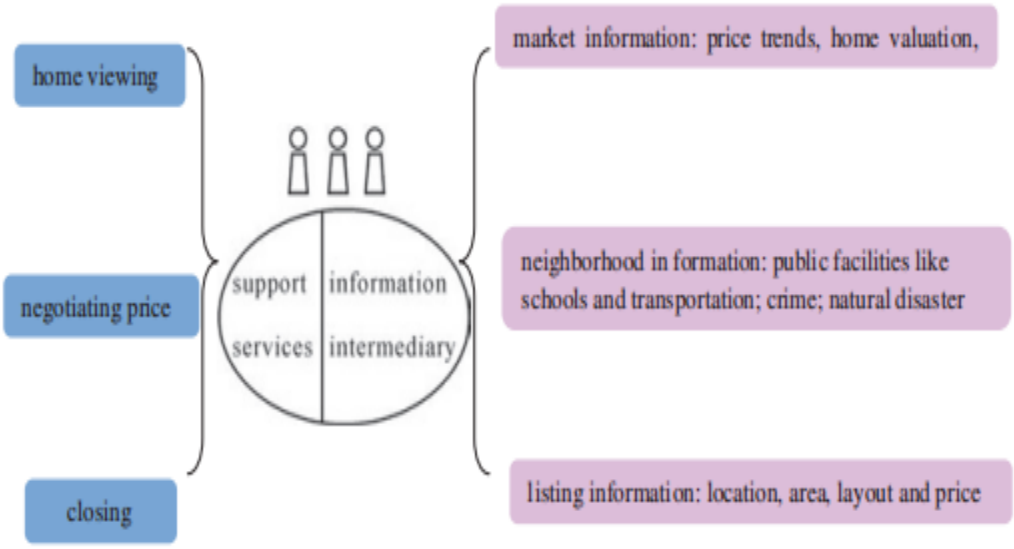
The main actors that facilitate and assist the market of residential houses are Brokers who participate in housing transactions. The basic information providers for both buyers and sellers about the house transaction are Brokers. The information provided for buyers and sellers by the brokers depends on the list of houses sold or comparative sales of the residential houses. However, to determine the price of a house based on practice and knowledge of the brokers is the only option that prevails transacting the house in Addis Ababa. There is no one that gives accurate price information on house transactions. However, for practical purposes, the functioning of the house market transaction brokers is responsible to undertake this service. The other situation of marketing of house is that brokers find a seller or buyer of a house and the seller fixes the selling price of the house as to be good for negotiation. While the buyer indicates the possible house anticipated to buy, that is, the bundle of characteristics the house he/she likes to handle. As soon as the brokers get the information either from the buyer or seller, they start to find the other part to facilitate the transaction or marketing of that house. The brokers can also have a possibility to find and get both sides of the parties - buyers and sellers. In practice, brokers however have a network within each other for within which they operate their task. The broker who obtains potential buyers will tell his position status to find a seller of a house by providing the relative information he obtained from the buyer, to get facilitated communication between brokers. The frequent, mutual support and trust is the main principle in their brokers' activities (Sisay, 2006)

2.4. Summary of the chapter

Generally, the value of a house is highly correlated with attributes that are attached to it. The proximity to employment, schooling, availability, and accessibility of public transport facilities and social infrastructure in the neighborhood are among the major quality attributes of housing. Therefore, the price units located in the inner city with easy access to social infrastructure and services would attract higher price compared to the urban periphery where access to these facilities is difficult or simply non-existing.

Although brokers do strive to be as accurate as possible, valuation is not just about predicting the precise price that a property will be exchanged for; it is as much about providing a realistic estimation which can act as an aid to decision making. The valuations will have helped the bank to frame the decision ultimately reached and in that respect, the valuations will have served their purpose by helping to improve the decision taken. Pricing is an estimate made before a transaction takes place hence the expression which means 'predicted before the event' and in this context the event is the sale of a property. In that context, an appraiser will usually be working from comparable data which has emerged from the market to make this prediction. Thus when an appraiser is called upon to establish the value, say, of terraced house, recent transactions on similar houses will obviously provide a very good guide to the value of the subject property. In contrast, the expression 'after the event' if the property were a house being purchased as somebody's primary residence, then it is unlikely that the purchaser will be thinking about benefits in monetary terms. It is more likely that the householder will be interested in the property because of what economists call its utility, which is the combination of benefits derived from living in the house and the area.

Figure 1 Conceptual frame work of the study



CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the research methodology and design that are used to achieve the objective of the study. Research approaches & methods, sources & instruments of data collection, the population of the study, sampling procedure & technique, sample size determination, procedure of data collection and method of data analysis, and reliability and validity of the study are discussed.

3.1.1 Area Description

Addis Ababa is the capital city of Ethiopia and also due to its historical diplomatic and political significance for Africa; it is often referred to as the political capital of Africa. Geographically it is located at the center of the country. It is located between 8°49` 55.929`` and 9° 5` 53.853`` North latitude and between 38° 38` 16.555`` and 38o 54` 19.547`` East longitudes. It lies at an average altitude of 7,546 feet (2,500 meters). Its topography ranges from rolling plain to hilly areas with a relatively steeper gradient and numerous rivers, stream valleys. The City of Addis Ababa occupies an area of 522 square kilometers (0.05 percent of the Ethiopian landmass) and is comprised, according to official statistics, of an estimated 3 million inhabitants and is sub-divided into 10 sub-cities. (CSA, 2007)

The city is sub-divided into ten sub-cities, each of which has an average population of around 300,000 people (see below)

Table 1: Sub city of Addis Ababa

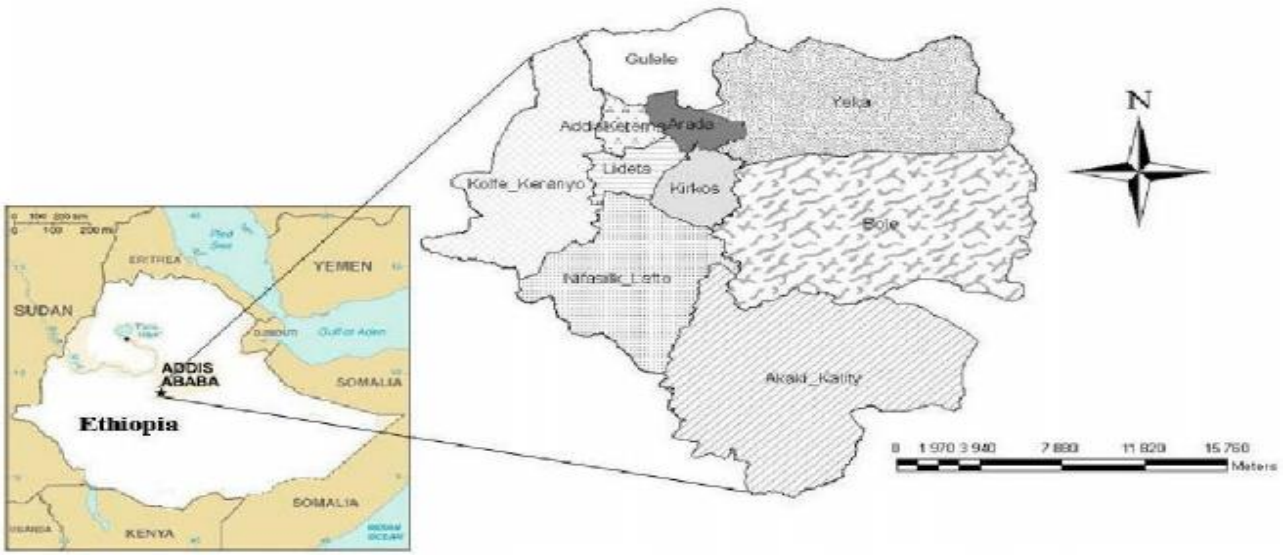
Sub-city of Addis Ababa	**Population of sub-city**	Area in (KM2)
AKAKI KALITY-sub city	232,801	123.46
NEFAS SILK-LAFTO-sub city	406,303	58.76
KOLFE KERANIYO-sub city	550,862	*63.48*
GULELE-sub city	343,733	*31.19*
LIDETA-sub city	259,101	*9.18*
KIRKOS-sub city	284,215	*14.65*
ARADA-sub city	271,707	*9.5*
ADDIS KETEMA-sub city	327,970	*8.64*
YEKA-sub city	445,363	123.46
BOLE-sub city	396,947	*82.13*
Total population	**3,519,000**	519.49

Source: (Addis Ababa City Central Statically Agency, 2018)

The three largest sub-cities by population are KolfeKeranio (with 550,862 inhabitants), Yeka (445,363), and Nefas Silk Lafto (406,303). And the three smallest sub-cities by population are Akakikalati (232,801), Lideta (259,101), Arada (271,707).

In terms of land area, the largest sub-cities are AkakiKality (123.46 km2), Bole (118.5km2), and Yeka (82.13km2) each of which covers an area exceeding 80 square kilometers, and the four smallest sub-cities by areas are Addis ketema (8.64km2), Lideta sub-city (9.18km2) and Arada sub-city (9.5km2), Kirkos sub-city (14.65km2) each of which covers an area less than 15 square kilometers. Population densities vary considerably among the sub-cities, with Addis Ketema and Arada showing the most densely populated neighborhoods while Bole and AkakiKality are the least densely populated sections of the city.

Figure 2: Map of Addis Ababa city



3.2. Research Design

A descriptive research design was adopted by this research. Descriptive research aims to present a complete description of a subject within its context. Descriptive researches are often used when an amount of knowledge about the subject already exists, this knowledge was then be used to categorize into models and frameworks. Consequently, the approach with in-depth interviews, document review and the use of questionnaires as data collection techniques are very useful in the study of the major constructs.

To accomplish the objectives of this study, a mixed-method research design merging both qualitative and quantitative research methods were applied. As Creswell (1995) has recently illustrated, mixed-method approaches now provide rationale ahead of triangulation.

The study employed the concept of the hedonic model to make empirical research on housing price determinant factors. The study used a combination of a survey and case study methods and to answer the research questions and arrive at valid and reliable results, the study uses both qualitative and quantitative data. Structured questionnaires are employed to collect primary data. The primary data was collected from real-estate brokers and households of real estate and also government employers that are related to real estate transaction employers were asked for the interview questions.

3.3 Research Approaches

This research is exploratory and observational in its type. The research aims at studying the experience and prospects of private real estate brokers in alleviating housing problems in Addis Ababa. The qualitative and quantitative research approach adopted for this research requires the collection of data by a means of a survey and also some analysis that elaborated by some mathematical calculations. This research contains literature review and data collection by means of critical observations, written and oral interviewing techniques with open-ended questions which used to understand the processes and acquire organized information regarding the real estate pricing in alleviating housing problems.

These above-mentioned ways are the most reliable ways of primary data collection for this particular study. There is a need to incorporate both methods because the researcher believes that a face to face meeting will give a straight forward answer to those questions that are not answered on the questionnaire due to different personal reasons.

Qualitative research is applied to get insight and understanding of the situation of the real estate brokers in Ethiopia. A quantitative research method in which the researcher has collected quantitative data through close-ended questions using a questionnaire is also used to examine the variables of the study: that are the quality of brokers' task, house price escalation situation, purchaser personnel credibility, level of brokers professionalism, and factors price determinants of residential homes as independent variables and pricing effectiveness as the dependent variable. The questionnaire was divided into 3 sections such as observation, interview, and questioner.

3.3.1 Target Population

"The target population is the entire set of units for which survey data is to be used to make inferences. It is a well-defined or set of people, services, elements, events, groups of things, or households that are being investigated" (Ngechu, 2004). In this study, the population is all residential real estate of selected eight sites and real estate brokers of the city. Therefore, the target population for this study is all the 8 real estate site residents i.e. 855 housing units and 30,729 total populations according to the real-estate transferring registration office in 2017.

3.3.2 Selection of Sample Site

The real-estate transferring registration office of the Documents Authentication and Registration Agency in Addis Ababa city, which has 14 branches, is the source of document used to arrive at the list of transaction information of the houses. Only four branches, namely 1st, 3rd, 8th and 10th branches which exhibited high transaction records were selected as a sampling frame for this study. Location preference reflected by the house buyers is the major selection criteria of samples from the identified branches. Attributes such as house numbers have been utilized to further screen out the specific location of the respondents.

3.3.3 Sample Size and Sampling Technique

When investigating a large population, it is often empirical and usually unnecessary to measure all the population of interest. On top of this, the sampling frame for this study is a purchased residential house conducted at four branch offices in Addis Ababa from fourteen of the Documents Authentication and Registration Agency.

In respect of this study, a simple random sampling technique was used to select residential sites and households of real estate. This type of sampling is also known as chance/ lottery sampling or probability sampling where each and every item in the population has an equal chance of inclusion in the sample and each one of the possible samples, in the case of a finite universe, has the same probability of being selected.

The required sample size is given by the formula.

$$n = P(1-P)(z_x/c)^2[1+P(1-P)(z_x/c)^2/N]$$

Where z_x is the upper x% point of the standard normal distribution and following are some common values of x and zx,

x 80% 90% 95% 99%

zx 1.2816 1.6450 1.9600 2.5758

For large values of N the second term in the brackets is close to 0, and so this expression for n reduces to

$$n=.25(z_x/c)^2$$

Thus, if the required precision is c=.05 this simple formula also tells us what the precision is, at 95% confidence, for any sample size.

Table 2 Sample Size for Given Precision

Sample Size for Given Precision					
Confidence Level:		**80%**	**90%**	**95%**	**99%**
z-score:		**1.2816**	**1.645**	**1.96**	**2.5758**
Precision +/- =	5%				
	30				
Population Size =	30,729	**What is my sample size?**			
Assumed P =	95%	60	98	138	238
Conservative P =	50%	164	269	380	650

Precision for Given Sample Size					
Confidence Level:		**80%**	**90%**	**95%**	**99%**
z-score:		**1.2816**	**1.645**	**1.96**	**2.5758**
Sample size=	138				
Population Size =	30,729	**What is my+/- precision?**			
Assumed P =	95%	1.96%	2.52%	3.00%	3.94%
Conservative P =	50%	3.27%	4.19%	5.00%	6.57%

The sample size was determined using the population, 95% confidence interval and with 5% margin of error via using assumed 95% P.

Table 3: Residential Real Estate Sites Selected for the Samples and their Sample Distributions

No.	Name	Location site	Building height	Total no. of housing units	No. of housing units sampled	Approx. sample size
1	Akakas Real estate PLC	Around Ayat	Up to G+6	167	167*138/855 = 26.9	27
2	AyatS.c	Ayat	Up to G+5	153	153*138/855 = 24.6	25
3	CCD PLC	Legetafo	.... G+4	52	52*138/855 = 8.15	8
4	Enyi Real estate PLC	Jimma Road & bole bulbula	.... G+5	150	150*138/855 = 24.3	24
5	Gift	Yeka	.... G+3	54	54*138/855 = 8.97	9
6	Kara Kore	Kara Kore slopes in the Ayer Tena District	.... G+3	60	60*138/855 = 9.68	10
7	Sunshine	CMC, Gerji, Legetafo, & Bole-beshale	.... G+6	162	162*138/855 = 26.1	26
8	Zenebeferew	Karakore	.... G+5	57	57*138/855 = 9.1	9
Total				**855**	**137.8**	**138**

Source: - Own survey result, 2019

3.4 Instruments of data Collection

3.4.1 Secondary data Sources

Secondary data was gathered from both published and unpublished sources such as books, journals, research papers, articles, reports, etc. This helped to frame the research via acquiring relevant theoretical and methodological understandings as well as empirical pieces of evidence. Five years' time series residential houses transaction data (numbers and price) were also collected from theCity's Authentication and Registration Agency.

3.4.2 Data Collection Instrument

3.4.2.1 Questionnaire

This instrument of data collection is the vital data acquisition technique in the study used as the data collecting for helpful in securing pertinent information for the study and its suitability for survey research. Thus, questions that consist of different sections and different items: open-ended and closed-ended were prepared to collect relevant data from the sample representatives. The questionnaire survey enables the researcher to captures multiple information for the study.

3.4.2.2 Interview

In this study, to obtain additional information on the data gathered through a survey questionnaire, an in-depth interview was conducted with various relevant bodies. Open-ended and semi-structured interview questions were prepared and interviews were undertaken with relevant experienced experts selected in the subject area. In this regard, experts selected from the Documents Authentication and Registration Agency and other public institutions were approached and interviewed.

3.4.2.3 Observation

Direct observation of brokers and residential house purchasers (with their houses) was one of the data gathering methods employed in this study for triangulating information collected by other sources. Before conducting the actual data collection, a visit to the study site was made to establish some contacts with households, brokers, and managers on the ground to explore the study area and get some general sights about real estate housing price determinant.

3.5 Methods of Data Analysis

After the collection of the necessary information has completed, data processing is performed with SPSS and the data are analyzed using different statistical methods and techniques.

3.5.1 Qualitative Data Analysis

In qualitative data analysis, data is very important to discover what is important and what is to be explained and deciding what to tell others qualitatively. The researcher used qualitative data analysis tools of open coding and to present and analyze the collected qualitative data. Coding in qualitative data analysis is the process of examining the raw qualitative data which was in the form of words, sentences, or paragraphs and assigning codes.

3.5.2 Quantitative Data Analysis

The statistical package of Social Science Software (SPSS) is used for analyzing the quantitative data collected through questionnaires from participants. The analysis includes representations of results using numbers, charts, graphs, tables, and description. Descriptive analysis is employed to analyze the frequencies and percentages of respondents' perceptions and their level of agreement or disagreement with the given statement under each question and multiple alternatives.

3.6. Specification of the Model

Analyzing the quantitative data collected through questionnaires from specification of the model includes determination of the best functional form for the model and selection of the independent variables to be included in the model.

The choice of functional form that most appropriately explains the relationships between the explanatory variables and the residential housing price is critical in determining accurate and consistent econometric model. (Janssen et al., 2001) observed that there is no agreement in the literature as to what is an appropriate functional form for the effect of property attributes as neither economic theory nor previous studies provide clear guidance regarding the choice of functional form. However, this study employed the double-log function models that have been most widely used in similar studies. Additional reasons for choosing the double-log function model is, it minimize the common statistical problem known as heteroskedasticity. And the double-log function model uses the natural log of both the dependent price and the independent area of the house, which is regressed on the rest of the untransformed independent variables thus the form is stated as follows:

LOG-Price = $\beta_0+\beta_1 x_{1j}+ \beta_2 \log (\text{Area}) + \ldots.. B_p x_{pj}+ \varepsilon$ (double - log)..... (i)

The model was proposed by Green (1997). The form is:

$y= a + b_1x_1 +b_2x_2 + e$

X's=independent variables,

Y=dependent variable,

j=observation (row) number,

β's=unknown regression coefficients,

ε_j= error (residual) of observation.

Translating the variables to our study the formula was applied as follows:

$$LOG\text{-}Price = \beta_0+\beta_1 (MT) + \beta2(L) + \beta2\log (A) +\beta_4(NH) + \beta_5(Q) + \beta5 (R) +\beta_5(Ag)+ \varepsilon$$

Where:

LOG-Price = Dependent variable (i.e. Logarithm of price). To make interpretation of the regression coefficient easy the dependent variable is transformed into logarithmic form.

β = Regression Coefficient

MT- Market of real estate

L = Location

Log (A) =Logarithm form of area of houses in square meter.

NH=Neighborhood

Q=quality of the house

R = number of rooms

Ag= age of the houses (LOG- age), ε = the error term.

The multiple regression function expresses the effect of each of the independent variables on the dependent variable. The value of β will be the degree of effect on price. A positive or negative sign will show the direction of the relationship. The higher the value of β, the higher the effect of that particular variable on price, (Julius, 2012)

However; the above independent variables are included in the multiple linear regression model, not the final variables in the price model analysis. Therefore, the selection of the independent variables included or excluded in the model is based on suggestions of brokers and researchers (using 5 point liker scale), availability of data and finally, the variables included in the price model are those which are found to have significant coefficients.

3.7. Reliability and Validity Test

Reliability, as defined by (Cohen, 2007) is the consistency, dependability, and reliability of the measuring instrument over time, and with the same respondents. It is the extent to which the measuring instrument yields consistent and accurate results when the characteristic being measured remains constant. One means of increasing the reliability of the instrument is the inclusion of more items in the questionnaire. In this study, the researcher ensured that there were enough items per construct. As was mentioned earlier, the study used both quantitative and qualitative data and the quantitative data in this context were collected through the use of questionnaires. To this end, the reliability of the instrument

was maintained through conducting a pilot test on factors before it was used for the actual data collection purpose.

The reliability tests of the research questionnaires are one, so as to decide if the research tool yields firm and reliable results. Reliability is the uniformity of measurement (Bollen, 1989). (Drost, 2011) points out that approaches to estimate test reliability in research are test-retest reliability, split- halves, and internal consistency among others. This research study used the internal consistency approaches in cities more meaningful than the others. Consistency was tested using Cranach's alpha statistic. The Cronbach's alpha coefficient was used to define the reliability of the instrument in this research since it is a good indicator of dimensionality and internal consistency of sample items (Tavakol & Dennick, 2011).

According to (Malhotra & Birks 2007), reliability is the extent to which a measurement reproduces consistent results if the process of measurement were to be repeated. Cronbach-alpha, a widely used measure of internal consistency, was run using SPSS version 20 and all of the scales used for this study were found to be reliable as their respective alpha values were higher than 0.5, and for most closer to 1. A desirable reliability coefficient which would fall in the range of between 0.50 and 0.80 is acceptable.

Table 4: Reliability tests

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Log_Price	9.8890	8.470	.914	.677
Location	15.6997	7.525	.849	.644
Level	15.8163	7.571	.830	.647
Market	15.6997	7.522	.851	.644
Neighborhood	15.3275	13.167	-.728	.875
Quality	15.3413	5.785	.884	.586
Rooms	13.2080	4.529	.791	.624
Log_Area	13.8795	8.908	.832	.696
Log_Age	15.2030	10.734	-.778	.768

Source: - Own survey result, 2019

CHAPTER FOUR

4. DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter deals with the result obtained from the questionnaire survey gathered by observation, interview, and questioner. To assess the truth-finding of the study area the data analysis and description is the main part of the research. This chapter includes the analysis of asses the general characteristics of the respondents, major factors of residential house price determination, real estate brokerage professionals, and model real estate housing pricing related to the effect of brokers, the income level of house purchasers' and community satisfaction.

4.2 Survey Response Rate and Reliability Test

4.2.1. Questionnaires Return Rate

The 138 questionnaires were administered to residents however, a total of 120 questionnaires were collected because 18 were incomplete due to the unwillingness of respondents. Thus, 120 questionnaires were found to be usable and ready for analysis, which is an 87% response rate as tabulated hereunder. After coding and entry of data into SPSS version 20, the first analysis conducted was to check the reliability of the scales used in the data collection instrument.

Table 5: Survey response rate

S/N	Type	Respondents	Number administered	questionnaires returned	Response rate
1	Questionnaire I	Residents of real estate	138	120	86.93%
2	Questionnaire II	Brokers of real estate	30	26	86.67%
3	Questionnaire III	Real estate site managers	8	8	100%

Source: - Own survey result, 2019

4.3 Respondents' Profile

As observed from table 6 below, the majority of the respondents were male (63%) gender wise, married (68%), have at least a bachelor degree (58%), government employees (55%) and with monthly income between 5,000 and 15,000 (71%). The marital status of buyers obviously increase the house needs. The head of the household has to fulfill the demand of shelter for his family and himself by buying a house.

Housing preference is considered to be a way of life that the educated person prefers to have luxurious house with facilities and large space. The surveyed households reveal similar results to this contention. One reason for a significant presence of housewives in housing market is that spouses prefer to have house under their name.

The reported income, however, seems to be very low to enable a person to buy a house in Addis Ababa. It is quite known that most income data are not properly reported. The study assumes that the reported income is under reported.

Table 6: Demographic characteristics of respondents

Variable	Category	No.	Percentage
Gender	Male	75	62.5%
	Female	45	37.5%
	Total	120	100
Age	18-25	12	10%
	26-35	28	23.3%
	36-45	58	48.3%
	above 46	22	18.4%
	Total	120	100
Marital Status	Married	82	68.3%
	Single	25	20.8%
	Divorce	13	10.9%
	Others	0	0
	Total	120	100
Level of Education	elementary completed	4	3.3%
	high school graduate	7	5.9%
	Degree	70	58.3%
	masters and above	27	22.5%
	Others	12	10%
	Total	120	100%
Occupation	Self-employed	10	8.3%
	Government employee	66	55%
	NGO (Humanitarian) employee	20	16.7%
	Private company employee	10	8.3%
	Have more than one job	8	6.7%
	Others	6	5%
	Total	120	100%
monthly income	below 5000	10	8.3%
	From 5000 to 10,000	35	29.2%
	From 10,000 to 15,000	50	41.7%
	From 15,000 to 20,000	15	12.5%
	Above 20,000	10	8.3%
	Total	120	100%

Source: - Own survey result, 2019

4.4 Professionalism of residential real-estate brokers

The training and knowledge development has a commitment to participating in continuing professional development. The broker ethics adopt and apply high standards of ethics and integrity. Clients also specialize in treating clients honestly and fairly and acting in their best interests and continual improvement striving to exceed legal and regulatory standards implementing. Professionalism is closely linked with competency, and terms are sometimes used interchangeably. All aspects of professionalism including the education, ethics and integrity of the extent to which they act within the interests of clients are required for skilled services of professionals

Table 7: Legal and professional status of brokerage service

Type of brokers status license	Frequency	Percentage
Legal license broker	90	75
Illegal brokers /unlicensed	30	25
Professional Valuator	0	0
Total	120	100

Source: Questionnaire survey 2019

As shown in the above table, the majority of the respondents (75%) replied that they used legal brokers service to purchase houses with no professional service tagged with them. They believe that this lack of professionalism makes the house prices high.

Formal educational brokerage qualifications are important elements of professionalism. Therefore the complex legal context of different countries during real estate transactions leads to work brokerage duty. Recognizing and identifying a sound educational qualification relates with the crucial elements of brokerage professionalism. Formal educational qualifications also are a key way during which brokers can meet an equivalent regulatory training standard(IBCC 2018).Based on IBCC's(2018) report, professionalism is closely linked with competency and terms are sometimes used interchangeably. All aspects of professionalism including the education required of skilled services professionals their ethics and integrity of the extent to which they act within the interests of clients.

4.4.1The status of real estate brokerage task

In a transaction, the price is paid for whatever information and others. As many types of research indicated the transaction payment is based on a similar property rather than exact technical calculation in

many instances. The brokers should receive compensation which is appropriate or equivalent to the value of the property transacted.

Table 8: Assessment of whether transaction price was fair or not

Is the transaction price fair?	Frequency	Percentage
Yes	20	16.67
No	100	83.33
Total	120	100

Source: Questionnaire survey 2019

A query related to the reasons behind price escalation was also posed to the relevant public office experts. They stated that a price standardization mechanism is under development to regulate the surge in house price in the city. As per their opinion, it is the local broker (dellala) who decides what price should be tagged to which housing unit based on a mere guess.

4.4.2 Attitude towards brokerage task

In the process of brokerage particularly on residential house transactions, participation of the local brokers is necessary to achieve the required goals of information marketing. Even if when it is impossible to participate in all of the community, participating representatives of the affected community is mandatory for better awareness of brokerage for house transactions. As key informants like market value, true information, real estate transaction location, the direction of communication answered, commotion and value affection in the study area although, the community participation in the decision-making process on Dellala exists, they can't refuse the brokerage condition. The affected peoples in the house transaction have no many alternatives, other than their house prepared for sale and receive the price, and decide to take the brokers decision because they haven't efficient information to oppose brokers. And they were simply told to accept their house price without their full consent.

Both the brokerage firms and local brokers believe that their role of information dissemination is very important to facilitate transactions in the housing market. The brokerage service they render would also help in up scaling their living standard.

As shown in table 8 below, more than 71.6% of the respondents believe that the disadvantage of local brokers exceeds their advantage in facilitating a given property transaction. They negatively interfere the

transaction process in terms of such as barricading direct meetings between buyers and sellers, limiting information flow and hence awareness, and unnecessarily increasing prices.

Additionally, only 28.3% of the respondents depicted that the brokers task may help in improving the living standard of the brokers. It also help in facilitating property market, crating job opportunity and other social benefits.

The brokerage firms often market their services to home sellers by claiming that intermediation can help to find a buyer faster and negotiate a better price as compared to selling the property without aid (Huang and Rutherford, 2007). Some of the early theory and empirical works assume that brokers can better match buyers and sellers, which results in higher sales prices and lower marketing times (Yinger, 1981; Jud, 1983). This assumption is rooted in the fact that most brokers have access to multiple listing services (MLS). Users of the MLS claim that the system provides a broker with more up-to-date pricing, financing, and market information as well as access to a larger pool of buyers as compared to non-MLS users.

Unlike what the abovementioned theories claim, findings of this study clue that brokers interference between property buyers and sellers has largely negative effects on the price of real properties (i.e creates price hyke). This however contradicts the findings of Huang and Rutherford (2007) which tells that the brokerage firms often market their services to home sellers by claiming that intermediation can help by identifying a buyer faster and negotiate a better price as compared to selling the property without aid.

Table 9: Respondents attitude for brokerage task

Respondents attitude	Frequency	Percentage
Positive	34	28.33
Negative	86	71.67
Total	120	100

Source: Questionnaire survey 2019

4.4.3 The influence of brokerage service on house price change

As the respondents answered in table 10below, the influence of brokers in affecting real property price is high in the city. Brokers play the role of information flow, price determination and intermediation between buyers and sellers. They generally use their prior knowledge and practice to decide house price and no broker in fact tells an accurate price. Practically brokers have a network within each other for whereby they share market information and brokerage service compensations. The broker who obtains potential buyers will tell his position status to find a seller of a house by providing the relative information he/she obtained from the buyer, to get facilitated communication between brokers (Sisay, 2006). Efficient services are far from reality as reported by the majority of the respondents. Absence of modern information center like MLS (Multi List Service) is an added reason behind inefficiency of brokerage service in the city. No effort has been seen so far from the government side to modernize and regulate brokers service.

Table 10: Level of price change due to brokerage intermediation

Change of the price with Dellala intermediation**.**	Frequency	Percentage
High	70	58.33
Medium	38	31.67
Low	12	10
Total	120	100

Source: Questionnaire survey, 2019

4.4.4Level of satisfaction on brokers mediation

As shown in the table below, about two-third of the respondents are dissatisfied by the brokerage service. Most believe that their negative role exceeds the positive outcome in terms of such as blocking information flow between buyers and sellers, distorting prices and requesting unnecessarily high commission fee that doesn’t match the service rendered.

Table 11: Satisfaction of community with house punches transaction

Level of satisfaction	Frequency	Percentage
Dissatisfied	74	61.67
Satisfied	32	26.67
Indefinite	14	11.66
Total	120	100

Source: Questionnaire survey, 2019

4.5 Factors considered by brokers to decide housing price

4.5.1Brokers intermediation and house price escalation.

"Real estate price escalation according to Cahill (2010) varies in prices due to many factors. Among these factors, there are three that have the greatest influence. The first is location. The location of real estate has one of the most, even if not the most, it has an effect on the real estate prices. Usually, becomes of the closer the land to commercial centers or recognized vocational spots, the more expensive the land. The second one is the accessibility of roads and other infrastructure. A great sum of money is required to build and maintain these and that's why plots having paved streets cost more than those with dirt roads. The third island developer. Real estate prices are also affected by the companies that own them. The more popular the real estate company is, the more expensive the plots are. This is because bigger and more widely recognized real estate companies invest large sums of money on quality service and infrastructure in order to provide prime real estate and service smaller companies offer only real estate, the bigger companies offer land, road, and other amenities". They also have a greater amount of experience with land management and development than smaller and newer competitors.

"A study from France shows how brokers increase real estate price by an average of 1.3% (Violand, 2005). The real estate brokers in France consist of asserting that individuals who sell their goods by themselves tend to increase the house price. In particular, the level of influence of real estate brokers on housing prices is not homogenous" (Violand, 2005).

The imperfect flow of information is a well-established characteristic of the residential real estate market as all. Properties are heterogeneous and buyer and seller reservation prices are private information. In such a market, real estate brokers function as middle persons to help market participants gather information. If a home seller knew all of the reservation prices of the potential buyers for his/her property, then the choice of who to sell to what price would be obvious. This information is not readily

available and costly to acquire, so the home seller is faced with the choice of paying for the services of a broker or gathering the information him/herself.

The survey conducted by this study also reveals that house prices in the city have shown in increasing trend compared to previous times largely due to Addis Ababa's role in attracting people from around the country because of its infrastructure and service advantages.

Table 12: House price pattern over time

Is there a house price increment compared to previous?	Frequency	Percentage
Yes	120	100
No	0	0
Total	120	100

Source: Questionnaire survey 2019

4.5.2Effect of house brokers mediation

Slightly above half of the respondents believe that the role of brokers has a negative effect on house transaction (see table below) and about one -fourth gauged it as medium. So apparently those dissatisfied excel those satisfied. Empirical studies (Doiron, 1985 and Jud and Frew, 1986) have found that brokers obtain higher sales prices, enabling a typical seller to pass some part of the commission on to the buyer.

Table 13: Impact of brokerage on residential house transaction

Negative effect of brokerage	**Frequency**	**Percentage**
High	74	54
Medium	26	26
Low	12	13
No negative effect	8	7
Total	120	100

Source: Questionnaire survey 2019

4.5.3 Major challenges encountered during transaction process

House purchasers sampled identified a number of challenges during their time of real property transaction. These include lack of recent market information, inadequate income/salary level to purchase house, lack of market awareness backed by modern dissemination means and the rapid increment in house prices.

The following table shows the average house price information of respondents during time of purchase. Most believe that the price indicated was not fair (highly inflated) due to brokers intermediation.

Table 14: The proportion of house price buying due to Dellala intermediation

House in rice (Birr)	Frequency	Percentage
0.8-1.5 million	20	16.67
1.5 -2 million	40	33.33
More than 2 million	60	50
Total	120	100

Source: Questionnaire survey, 2019

4.5.4 Impact of residential house price escalation on livelihood

The preponderance of the respondents believe that the house price escalation occurred by brokers interference during time of purchase has remained to cast its shadow even after acquiring their properties. They said the rise affected their post purchase livelihood in unnecessarily depleting the already compromised financial status. As the majority (92%) indicated, there need to introduce mechanisms to control role and influence of brokers for increased real property prices via such as emplacing guidelines, directly monitoring and regulating brokers and the like.

4.5.5 Variables considered by brokers in the determination of prices of residential house

The attempt in this section is to address the first objective of the study, that is, to determine house price determinants based on frequent usage of property brokers. The property brokers were asked to provide information on the variables considered in the determination of the price value of residential in the selected area of Addis Ababa. This was necessary in order to know the exact information to ask the buyers and sellers of the residential house. The weighted mean score method was used to determine the variables the property brokers use in the price determination of houses. 5 Point Likert scale; the highest

score that is obtainable been 5 signifying that a variable is most frequently used was adopted for the study. The analysis is tabulated in the following table, using both mean square and relative importance index.

Table 15: Factors considered by brokers in residential house price determination

S/N	Variables	Determination of prices of residential house price of A.A.						
		Strongly disagree (1)	disagree (2)	undecided (3)	agree (4)	Strongly agree (5)	Mean rating value	Rank
1	Age of the house	2	3	7	10	4	3.42	5th
2	Historical sale prices	1	2	6	10	7	3.51	4th
3	Location of house	0	1	5	9	11	4.22	1st
4	Number of rooms	1	2	6	7	10	3.88	3rd
5	Market condition of house	1	4	14	4	3	3.33	6th
6	Per-capital income	5	9	3	6	3	2.44	11th
7	Interest rate	1	4	10	8	3	3	8th
8	Neighbourhood	4	3	12	3	4	3	8th
9	Levels of the house	1	1	3	8	13	4.20	2nd
10	Quality of house	6	8	4	5	3	2.43	12th
11	Inelastic housing supply	2	11	4	4	5	2.33	13th
12	High concentration of aggressive mortgage lending instruments	0	5	11	6	4	3	8th
13	Psychological factors	12	9	4	1	0	1.45	15th
14	Public expectations of future price increases	0	11	6	5	4	2.44	11th
15	Number of car parking space in the house	7	13	3	1	2	1.66	14th
16	Area of the house	3	2	10	6	5	3.22	7th

Source: Field Survey, 2019

Based on the analysis of responses of property brokers in the study area, the location of the house was ranked first amongst the sixteen variables in determining the price paid by buyers of the house as it had a mean score of 4.22. This was followed by the number of levels mean score of 4.20 and the number of rooms with a mean score of 3.88 is ranked as third. Age of the house and Market of the house were ranked fifth and six has both had a mean score of 3.42 and 3.33 respectively.

According to the study area, the house area was ranked seventh as it had a mean score of (3.22) and historical sale prices were ranked fourth as it had a mean score of 3.51. Finally, interest rate, neighborhood, and high concentration of aggressive mortgage lending instruments were ranked eighth and per-capital income and public expectations of future price increases were ranked eleventh having the same mean score. Others were the inelastic housing supply were ranked thirteenth. The number of car parking spaces in the house (1.66), Public expectations of future price increases (2.44) were individually considered as fourteenth and fifteenth in order of importance respectively.

Therefore; as shown in above table 15, ten variables (age, area, market, number of levels, location of the house, historical sale prices, interest rate, neighborhood, high concentration of aggressive mortgage lending instruments and Number of rooms) having mean scores of 3.00 and above. Since the mean scores of the variables fall within the region of 3.00, it, therefore, depicts that they are the variables frequently used by the property brokers in determining residential house price in the study area and these are the variables used in this study for the multiple linear regression analysis.

(Sebsbe, Muhdin, and Solomon, 2017) examined house price determinants in Hawassa city. To achieve the intended objective, the study used cross-sectional data obtained from 190 samples selected from 3 sub-cities in Hawassa city. To identify the major determinants of price Ordinary Least Square (OLS) method is adopted. The regression result for determinants of price indicates that the number of rooms, the total area occupied by the house, health center availability and housing typology dummy variable for transport or taxi availability, hospital or clinic availability and categorical variable for housing typology (i.e. categorical variable for housing typology being private and condominium house) are statistically significant and positively affect house price. On the other hand, the floor area of the house, number of bedrooms, dummy variable for the availability of market and school are statistically insignificant, therefore has no statistical effect on house price.

4.6 Measuring the Determinants of Residential Real Estate Houses Price

Residential house price is determined by the buyer's evaluation of the bundle of attributes. The hedonic price model helps to explain the house prices in terms of the characteristics of the house. Each of these

housing attributes assumed to be implicitly priced. The useful attributes buyers look for are the physical characteristics of the house, the location of the site in relation to the center of the city, and social and economic services. In view of the fact that the number and nature of factors that influence house prices are large and heterogeneous, house prices can't be determined by the units' characteristics alone. Therefore, the effect of different attributes must be compared by careful examination of the various factors. For this particular study, market availability of houses, quality of the houses, age of the house, area of the house, level numbers, neighborhood facilities (public transport, elementary school, and market), numbers of rooms, location are considered. All the variables which are frequently used by the brokers in determining house price in the study area are chosen for multiple linear regression analysis. The data used to develop a Hedonic price model is based on the variables defined in the table covering the types of residential houses, location, age, and quality and level, etc.

Table 16: Defining the variable of the model

Short name	**Variable name**	**Beta No.**	Data Type	**Expected Sign**	Definition of variables
PRICE	Log_Price		Numerical	Dependent variable	Log-transformed value of Price of house in birr. Transformation of logarithm is used to reduce complexity of values.
L	Location	β_1	Dummy	(+)	1 if it is center of city, 0 if it is far away from the city
Lv	Level	β_2	Numeric	(-)	levels away from the ground floor
MT	Market	β_3	Dummy	(+)	1 if the availability of market otherwise 0
NH	Neighborhood	β_4	Dummy	(+)	1 if the Neighborhood nearness otherwise 0
Q	Quality	β_5	Dummy	(+)	1 if the quality is both Good and medium while 0 for bad quality. Quality includes design and material quality

R	Rooms	β_6	Numerical	(+)	Number of rooms in house
A	Log_Area	β_7	Numerical	(+)	Log-transformed value of gross floor area (m^2). Transformation of logarithm is used to reduce complexity of values.
Ag	Log_Age	β_8	Numerical	(-)	Log-transformed value of the age of house in year. Transformation of logarithm is used to reduce complexity of values.

Source: Author, 2019

Parameter estimation is performed using the standard linear regression model

$$Y = \alpha + X\beta + \varepsilon$$

Y is a *n* vector of the housing prices, *a* is a *n* vector of parameters, *b* is a *k* vector of the parameters, *X* is the *n x k* matrix of the combination of attributes and ε is an *n x1* error term. By examining their parameters, the effect of each attribute can be analyzed. The error vector E is assumed to have a multivariate normal distribution with mean zero. The data comprised all residential houses sold. The description statistics of the variables are presented in next table. There are six residential house price determining factors used by brokers considered in this analysis and it is expected with these physical, availability and type of buyers add additional value for house price creating high demand than house not having them. Hence, there is positive relationship between those factors and price. Also, the two factors in this analysis resulted in inverse relationship between each variables and price.

4.6.1 Descriptive Statistics

Table 17: Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Log_Price	120	5.93	6.93	6.36	.290
Location	120	.00	1.00	.55	.498
Level	120	.00	1.00	.44	.498
Market	120	.00	1.00	.55	.498
Neighborhood	120	.00	2.00	.93	.665
Quality	120	.00	2.00	.91	.845
Rooms	120	2.00	6.00	3.05	1.215
Log_Area	120	2.00	3.54	2.37	.228
Log_Age	120	.70	1.23	1.05	.128

Source: Author, 2019

The price of the house ranges from birr 0.8 million to birr 8 million with an average price of birr 6.36and Average age of the house is 1.05years. Average floor area is about 2.37m^2.

4.6.2 Correlation Analysis

According to (Pallant, 2010) advantage of correlation is to find out the degree of strength and direction (Positive or negative) of association among and between variables (Pallant, 2010). Pearson correlation coefficient (r) is used to find out the association. Multi co-linearity exists if the absolute value of the Pearson correlation is higher than 0.8. Correlation values close to zero were taken to mean a weak relationship, while that close to one meant a strong relationship. In this study, correlation analysis was conducted to understand the relationship between the independent variables (quality, level, area, market condition, Location, number of rooms, neighborhood and Age) with the dependent variable Price and its dimensions. The sign of the coefficients represents the direction of the relationship whether there is a positive correlation (as one variable increases, so too do the other) or a negative correlation (as one variable increases the other decreases). The table below presents the correlation analysis between incentives related factors dimensions and the dependent variable price.

Table 18: Pearson Correlations

Correlations

		Log_Price	Location	Level	Market	Neighborhood	Quality	Rooms	Log_Area	Log_age
Log_Price	Pearson Correlation	1								
	N	120								
Location	Pearson Correlation	.822**	1							
	N	120	120							
Level	Pearson Correlation	-.860**	.757**	1						
	N	120	120	120						
Market	Pearson Correlation	.822**	.865**	.791**	1					
	Sig. (2-tailed)	.000	.000	.000						
	N	120	120	120	120					
Neighborhood	Pearson Correlation	.774**	-.566**	-.667**	-.583**	1				
	Sig. (2-tailed)	.000	.000	.000	.000					
	N	120	120	120	120	120				
Quality	Pearson Correlation	.893**	.828**	.785**	.808**	-.682**	1			
	Sig. (2-tailed)	.000	.000	.000	.000	.000				
	N	120	120	120	120	120	120			
Rooms	Pearson Correlation	.887**	.716**	.781**	.730**	-.710**	.838**	1		
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000			
	N	120	120	120	120	120	120	120		
Log_Area	Pearson Correlation	.886**	.745**	.794**	.741**	-.674**	.822**	.775**	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		
	N	120	120	120	120	120	120	120	120	
Log_Age	Pearson Correlation	-.850**	-.648**	-.705**	-.656**	.649**	-.732**	-.770**	-.774**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	
	N	120	120	120	120	120	120	120	120	120

Source: Author, 2019

This study employs the correlation analysis, which investigates the strength of relationships between the studied variables. Correlation coefficients reveal the magnitude and direction of relationships (either

positive or negative) and the intensity of the relationship (–1.0 to +1.0). Correlations are perhaps the most basic and most useful measure of association between two or more variables (Marczyk, 2005). As per (Marczyk, 2005) general guidelines correlations of .01 to .30 are considered small, correlations of .30 to .70 are considered moderate, correlations of .70 to .90 are considered large, and correlations of .90 to 1.00 are considered very large.

Based on the correlation result in the above table revealed that the quality of the house had a strong relationship with the price of real estate with the value of 0.893 (or 89.3%) followed by number of room of the house with the value of 0.887(or 88.7%). As shown in the above table level of real estate and age of the house had a negative relationship with price by the value of -0.860 and -0.850 respectively and all the rests of the variables have a positive linear relationship with the price of the house.

As can be seen from the above table there was a positive correlation between the six independent variables (location, room, market, and quality, neighborhood and Area) and the dependent variable (Price of the house). As the table above shows that the (level and age) of house has a negative relation with the dependent variable (Price of the house). Therefore, from the analysis we can conclude the absence of multicollinearity.

4.6.3 Test of Regression Assumptions

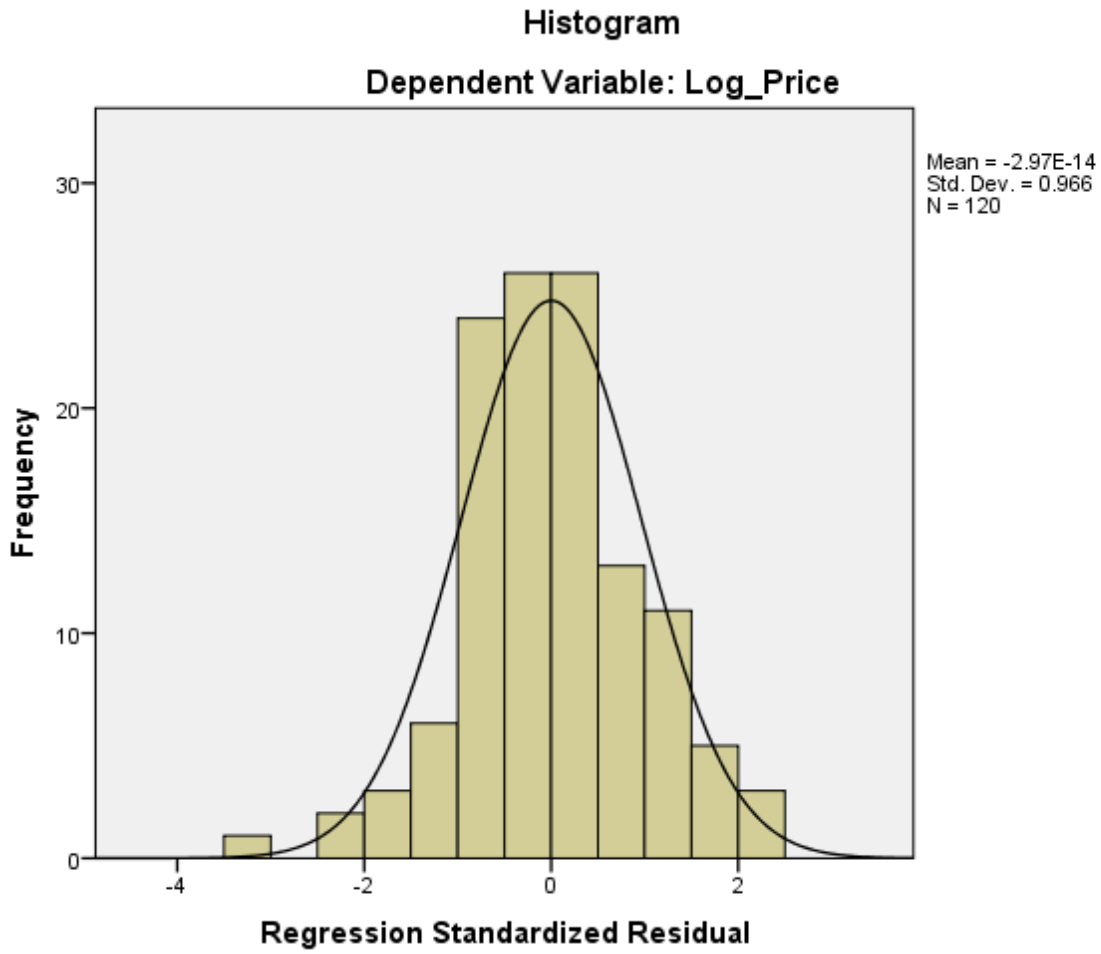
Before making regression analysis the researcher was conducted test of normality, test of multicollinearity, test of autocorrelation, and test of correlation.

Normality Test

These tests were used to test whether the variables were symmetrically distributed and without outliers and that there was a linear relationship among the variables. Reliability is the uniformity of measurement (Bollen, 1989). A normality test is carried out to determine if the data set is well- modeled by a normal distribution and if the pattern is neither parabola nor exponential then it is linear (Paul & Zhang, 2010). According to (Osborne and Waters, 2002) variables have normal distributions. Those none normally distributed variables are distributed with substantial outliers. They can be identified through visual inspection of histograms or frequency distributions. If the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would be not significant Brooke (2008). In parametric statistics, we fill the blanks concerning shape by assuming that the sampling distribution of the mean is normal (Mordkoff, 2016). Normality also can be determined based

on skewness and kurtosis statistics. Whereas kurtosis measured the relative flatness and Preakness of data values in the center versus in the tails of frequency distribution when compared with normal distribution Mulugeta (2017), to test the normality of sample distributions the researcher has used histograms, skewness, and kurtosis as presented in the following figure below.

Figure 3 Normality Test Using Histograms



Source: Author, 2019

As seen in the above figure above, based on visual inspection of the histogram, its shaped is bell. Due to the result above observed, normality is indicted as good to perform regression analysis.

In addition to histograms to test normality the researcher has used skewedness and kurtosis value which is presented in the following table.

Table 19: Statistics

Descriptive Statistics

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Log_Price	120	6.3690	.29001	.324	.221	-1.241	.438
Location	120	.5583	.49867	-.238	.221	-1.977	.438
Level	120	.4417	.49867	.238	.221	-1.977	.438
Market	120	.5583	.49867	-.238	.221	-1.977	.438
Neighborhood	120	.9305	.66511	-.152	.221	-1.239	.438
Quality	120	.9167	.84598	.160	.221	-1.589	.438
Rooms	120	3.0500	1.21510	.875	.221	-.480	.438
Log_Area	120	2.3785	.22887	.220	.221	1.125	.438
Log_Age	120	1.0550	.12834	-.716	.221	.206	.438

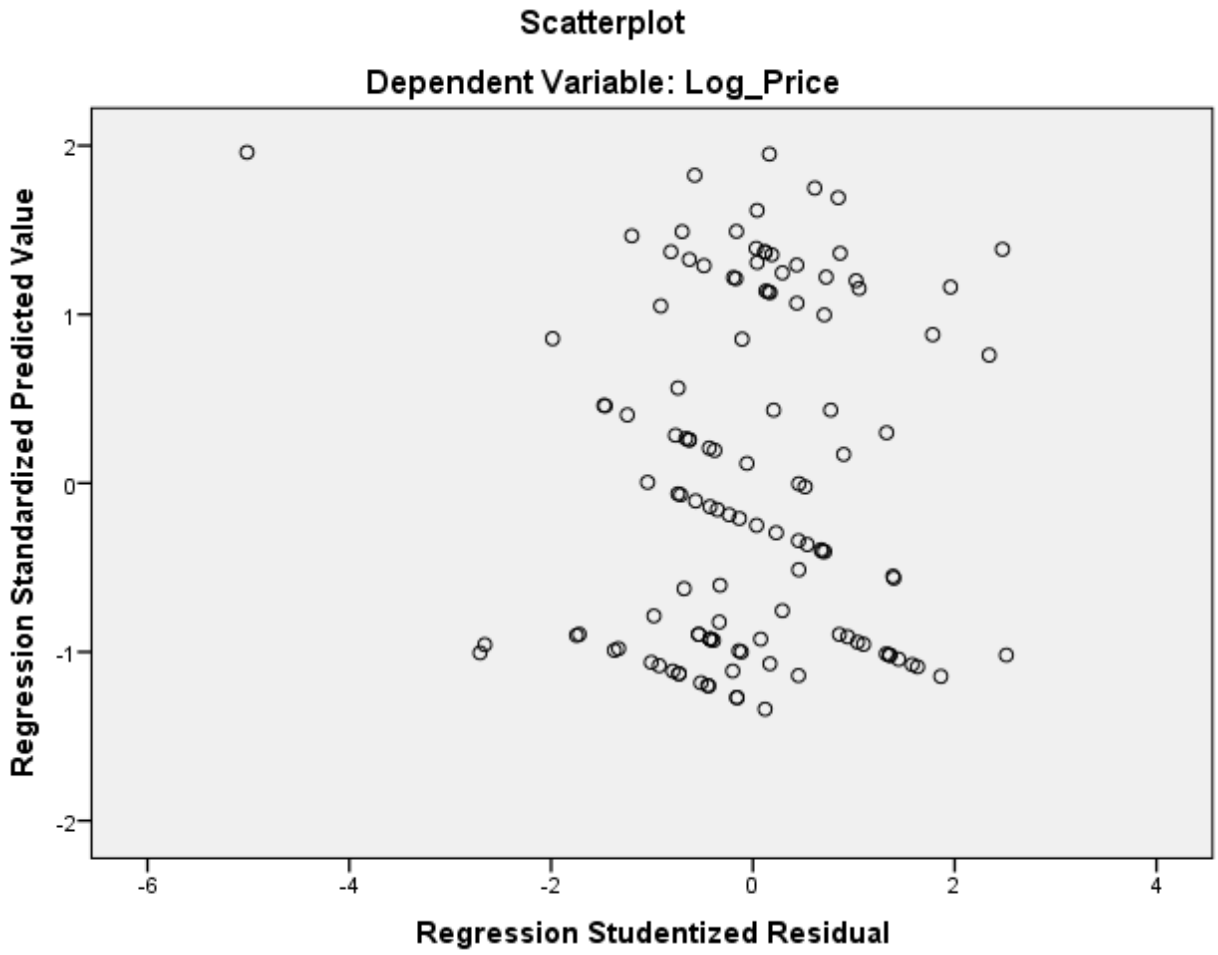
Source: Author, 2019

According to the above table 20, a kurtosis value is less than 3 has a low peak and thick tails. Therefore, all variables are within the acceptable range for normality and their value is below two.

Test of Homoscedasticity

Homoscedasticity means the variance of errors is that the same across all levels of the independent variables or every observed value features a corresponding value. When the variance of errors differs at different values of the independent variables, heteroscedasticity is indicated. Consistent with Berry and Feldman (1985) and Tabachnick and Fidell (1996) slight heteroscedasticity has little effect on significance tests; however, when heteroscedasticity is marked it can cause serious distortion of findings and seriously weaken the analysis. Homoscedasticity is that the violation of the heteroscedasticity test. This test is often checked by visual examination of a plot of the standardized residuals (the errors) by the regression standardized predicted value this is often indicated within the figure below:

Figure 4: Test of Homoscedasticity



Source: Author, 2019

Ideally, residuals are randomly scattered around 0 (the horizontal line) providing comparatively even distribution. Heteroscedasticity is indicated when the residuals aren't evenly scattered around the line. Therefore; by observing the figure above the residuals are randomly scattered around the horizontal line and satisfy the homoscedasticity test.

Test for Multicollinearity

According to (Martz, 2013) multicollinearity is a condition where two or more variables in a multiple regression model are highly correlated. Variance inflation factor (VIF) shows an index of how much the

variance of an estimated regression coefficient is increased because of co-linearity. The VIF scores should be close to 1 but under 5 is fine and 10+ indicates that the variable is not needed and can be removed from the regression model and hence this data set did not have that condition.

The assumption is tested using the variance inflation factor (VIF) values and tolerance. Variance inflation factor (VIF) - The VIFs of the linear regression indicates the degree that the variance in the regression estimates is increased due to multicollinearity. VIF values higher than 10 indicates that multicollinearity is a problem. In addition to the VIF value, the tolerance value for each variable should be less than 1. As a result of the above assumption and associated theories, the researcher was used variance inflation factor (VIF) and level of tolerance to test detect multicollinearity among explanatory variables and to perform linear multiple regression analysis. Accordingly, the values for each parameter were presented in the table below.

Table 20: Test for multicollinearity

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Location	.200	5.002
	Level	.245	4.084
	Market	.201	4.967
	Neighborhood	.435	2.300
	Quality	.164	6.091
	Rooms	.217	4.619
	Log_Area	.227	4.403
	Log_age	.323	3.099

a. Dependent Variable: Log_Price

Source: Author, 2019

Numerous approaches have been proposed for coping with multicollinearity Charlotte and William (1991). Some authors argue that a tolerance value less than 1 or VIF greater than 10 roughly indicates significant multicollinearity. Generally, diagnosing the VIF and tolerance values, multicollinearity is not

a problem or there is no inflation in the variance of coefficients. This would tell us there is an opportunity to overcome the overall regression analysis.

4.6.4. Result of the Model

There are two basic types of regression analysis: simple regression and multiple regressions. In simple regression, we attempt to predict the dependent variable with a single independent variable. In multiple regressions, we may use any number of independent variables to predict the dependent variable. R is a correlation between the observed values of y, the values of y predicted by multiple regression models. Therefore, large values of the multiple R represent a large correlation between the predicted and observed values of the outcome. The model summary table reports the strength of the relationship between the independent variable and the dependent variable. Hence, in this study, multiple regression analysis is used to know by how much the independent variable's dimensions explain or influence the dependent variable and it provided us the estimated multiple regression equation as expressed in the linear regression functional form specification. From this result, we can conclude that there is a positive relationship between the price of the house and its attributes that is, location, neighborhood, room, and quality area, market and age. A negative relationship between the price of the house level and age of the house was observed.

III. Analysis of Variance

When testing for statistical significance, the p-value indicates the level of the relation of the independent variable to the dependent variable and if the significant number is less than the critical value (p-value) which is statistically set at 0.05, then the model is deemed significant in explaining the relationship between the dependent variable and independent variable otherwise the model will be deemed as non-significant. Therefore, the F-ratio in the ANOVA table below tests whether the overall regression model is a good fit for the data. The table shows that the independent variables statistically significantly predict the dependent variable, $F(8, 119) = 236.642$, $p < 0 .05$ (i.e., the regression model is a good fit of the data) or in another word an F-statistic that strongly rejected the null hypothesis of no explanatory power. In addition, all explanatory variables that are significant at 5 percent, have their expected signs.

Table 21: ANOVA[a]

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.454	8	1.182	236.642	.000[b]
	Residual	.554	111	.005		
	Total	10.008	119			

a. Dependent Variable: Log_Price

b. Predictors: (Constant), Log_Age, Location, Neighborhood, Level, Rooms, Log_Area, Market, Quality

Source: Author, 2019

Model Summary

The model summary presents the fitness of the regression model used to investigate the influences of price-determining variables on real state house price. The extent to which changes in the dependent variable house price can be explained by changes in the seven independent variables. According to the variables fitted to the regression model, it is represented that R2 (Coefficient of determination = 0.945) shows that about 94.3% of the variations in price value are mutually accounted for by the variables considered in this analysis and this has been taken to mean other factors outside this study account for 5.7% in determining house price in the study area of Addis Ababa.

In addition, the above the table indicates the strength of the relationship between the model and the dependent variable. Almost more than half of the relationship between the prices of the house is explained by the model.

DURBIN-WATSON TEST: - Tests correlations between errors. Specially, it tests whether adjacent residuals are correlated or there must be independence of observations (i.e., independence of residuals). The test statistic can vary between 0 and 4 with a value of close to 2 meaning that the residuals are uncorrelated. Therefore; the closer to 2 that the value is, the better, and for these data the value is 1.974, which is so close to 2 that the assumption has almost certainly been met.

Table 22: Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df2	Sig. F Change	
1	.972[a]	.945	.941	.07067	.945	236.642	8	111	.000	1.974

a. Predictors: (Constant), Log_Age, Location, Neighborhood, Level, Rooms, Log_Area, Market, Quality
b. Dependent Variable: Log_Price

From the result below table 23, we can conclude that there is a negative relationship between the price of the house and its independent variables that is, level and age of the house. A positive relationship between the price of the house, quality of the house, number of rooms, neighborhood, Location to the central city, area of the house, and the market condition of the house was observed. This implies that a relatively low aged house with a low number of the level condition has a higher price than an old and low level of houses. The variables that determine the price of a house in the case study in the area.

Table 23: Regression Coefficients for regression model

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.128	.196		31.317	.000
	Location	.063	.029	.109	2.178	.032
	Level	-.070	.026	.121	2.680	.008
	Market	.033	.029	.056	1.127	.262
	Neighborhood	.059	.015	-.136	-4.000	.000
	Quality	.044	.019	.129	2.344	.021
	Rooms	.042	.011	.177	3.691	.000
	Log_Area	.221	.059	.175	3.727	.000
	Log_Age	-.460	.089	-.203	-5.173	.000

a. Dependent Variable: Log_Price
* Statistically significant at 0.05.

Source: Author, 2019

Examining the above table 23 makes clear that the eight independent variables are in the standard model were significantly predictive of the dependent variable. The absolute value of β (Beta) indicates the

order of importance of the independent variable (Gulden and Guler, 2013). The coefficient of β (Beta)-weight, is an estimate and so should be accompanied by a confidence interval that indicates its precision (Tom, 2007). By seeing the estimated value of the coefficients we cannot make conclusive judgments. The point here is that we have to test the fitness of the model that is we have to test whether there exists a significant relationship between the price of the house and the given variables. F test is used to test whether or not there exists a significant relationship between the price of the house and all independent variables.

The F values indicate the relationship between price of house and each predictor. If the value is positive, it shows that there is positive relationship between predictor and the outcome, whereas a negative coefficient represents negative relationship. For these data all the six predictors have positive F value which indicates positive relationship.

As can be seen from the above table except market condition of the house all variables have significant effect on price of house. The result shows that level and age of house have a negative relationship with price of house.

The standard coefficients (Beta) value of the independent variable depicts the degree of each variable that influences the price value of the house in the area. It is shown in the above Table. It gives a picture of the relative importance or influence of the independent variables on the price value. The higher the magnitude of Beta, the more the influence of the variable. Hence, according to the analysis location of the house is the most significant factor to the residential house value of the study area.

From the above Table 24 therefore, the model is thus as indicated below;

Log_Price=6.13+0.063(location)-0.070(Level)+0.033(market)+0.059(neighborhood)
+0.044(quality)+0.042(rooms)+0.221(Log_Area) -0.460(Log_Age)

The paper tries to explain the use of a price model is important in the determination of the price of a house. There are various hedonic price models but each has its own limitations. There is no standard specification of the hedonic model the model could be used based on the data and needs of the researcher. The housing market itself is an inherently dynamic, stochastic, multidimensional, and independent entity. For example, an increase in the income of the household can induce an increase in the price of the house for higher quality houses and locations. The hedonic price analysis assumes those

individuals' tastes and motives to be the same. A careful and accurate analysis of such a model however can be useful in helping sellers set asking prices, and buyers set offering prices and in bringing both parties together towards an agreed house price.

Table 24: Summary of Hypothesis Testing

S.N	Hypothesis	Result
1	H1: There is significant relationship between location and price of house	Accepted
2	H2: There is significant relationship between Level and price of house	Accepted
3	H3: There is significant relationship between market and price of house	Reject
4	H4: There is significant relationship between neighborhood and price of house.	Accepted
5	H5: There is significant relationship between quality and price of house.	Accepted
6	H6: There is significant relationship between number of rooms and price of house.	Accepted
7	H7: There is significant relationship between Area and price of house.	Accepted
8	H8: There is significant relationship between age of house and price of house.	Accepted

Source: Author, 2019

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The study sought to probe the role of brokers on residential real-estate price escalation in Addis Ababa and also examined determinants of residential real estate house price value in the study area of Addis Ababa. The empirical study investigates the determinants of price by taking 120questionnaire responses from eight residential real estate houses sites located in Addis Ababa, in into regression models, correlation analysis and descriptive analysis to establish the major residential house price value determining factors in the study area.

Further, 16 attributes were identified and categorized into the established house price value determinants used to develop the framework of price determinants for the study area. The brokers and households were asked to provide information on the variables considered in the determination of the price value of house in the study area of Addis Ababa in order of their frequencies of usage to contextualize in the study area.

The findings tell that most of the respondents have dissatisfaction on brokerage service due to various reasons including knowledge and technology gap. The negative impact on livelihood on the post purchase era

In this order, eight variables i.e., age, area, number of room, level, market, quality, neighborhood and location are the attributes which are used frequently by brokers while determining price values of house in the study area of Addis Ababa. According to brokers information the number of levels from the first floor was ranked first in frequency of usage. These attributes were used to design a questionnaire that was administered to households, real estate managers, brokers and owners of the house in order to be used in the regression analysis.

Finding from correlation result shows that there was a positive correlation between the six independent variables Location, Neighborhood, Room, Quality, Area and Market dependent variable (Price of house). In other words the independent variables such as level and Age of house have negative relation with the dependent variable Price of house.

According to the finding of regression result we can conclude that there is a positive relationship between the price of the house and its independent variables that is, Location, Neighborhood, Room, Quality, Area and Market. Negative relationship between the price of the house age of the house and the number of level in the house was observed.

Market participants each government establishments and also the public at massive ascertained lack of data concerning the worth of a house. The absence of such info has affected the dealing of homes. The sellers of the house are forced to line the higher value of their house to maximize profit. The buyer providing value different hand is actuated for a house that maximizes his utility given his money capability. The interaction between the markets participants weren't as straightforward as shopping for different merchandise and services and also the negotiation would take energy and time.

Base on the discussion result from empirical proof brokers play a very important role in facilitating dealing of homes however the activity has got to be legalized, code of ethics and standardize. Brokers themselves notice the problem to find either the vendor or the customer, if every broker handles solely a vendor and also the different focuses on finding solely emperor thereby specialization. This system will improve their service and commission attained.

As all results of this study shows that the study was undertaken to see the role of brokers on residential house value deciding and additionally examine determinants of residential real estate. The results of the empirical tests counsel that the factors which may be expected to drive costs within the different countries don't apply to our study space.

The factors like space, variety of levels of house, quality of the house, location, market and neighborhood facility like college and different facility have a big influence.

5.2 Recommendations

- It is recommended to brokers that they should ensure that people are aware of their services to include agents instead of living it in the hands of quacks. This will help in the reduction of the incidence of residential house prices as a result of the high prices charged.
- Findings of this study evidenced that hedonic regression model is quantifiable and justifiable method for house price prediction; hence it is recommended to Addis Ababa housing agency that

they should have to apply this technique for price valuations of housing properties by constructing further improved price models appropriate for different sub-centres.

- The study also recommends that the governments' caprices take a proactive role in collecting and analysing data on house price value. The data available was very scanty and very important in making policy decisions especially in court.
- Finding from empirical evidence in line with the efficient skill of brokers shows that most brokers have not been actively involved in the use of scientific techniques to identify price-determining variables instead they use their practice as a tool. Therefore, it is suggested to those brokers that they should consider the use of scientific techniques to assist in making decisions that are reliable. This is achievable through the funding of research in this regard.

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Appendix 1

Add Ababa University, EiABC

Department of Urban and Regional planning

Field of Urban Land and Property Valuation

Graduate Program-MA

Questions for householders

My name is Wondu Fikadu-MA student at Addis Ababa Ethiopian Institute of Architect, Building constriction and City development. The objective of this study is to probe the role of real-estate Dellalas on residential real-estate house price escalation factors prospects they considered in Addis Ababa, Ethiopia. Please be aware that the purpose of the study is purely academic. I would appreciate your taking the time to complete the following questionnaire. Your responses will be held confidential. Responses will not be identified by individual. All responses will be compiled together and analyzed.

Instruction

a) No need to write your name

b) Choose the alternative given for questions.

c) Write your answer for questions which needs explanation in the space provided.

Part – I

General Information of the respondent: Please tick the choose or answer on the space provided

1. Age: A. 18-25 B. 26-35 C.36-45 D. 46-55 E. 56-65 F.65>

2. Sex: A. Male B. Female

3. Marital Status A. Single B. Married C. Divorce D Other……

4. Education Level A. Elementary Complete B. High schools complete C. First Degree
D. Second Degree E. Other _____

5. Occupant or house bought from A. Privet holder B. Lease hold C. Auction
D. Other_____

6. Monthly income level A. below 5000 B. From 5000 to 10,000 E. Above 20,000
C. From 10,000 to 15,000 D. From 15,000 to 20,000

7. Your occupation status

A. Self-employed/entrepreneur B. Government employee

C. NGO (Humanitarian) employee D. Private company employee

E. Contract employee F. Have more than one job

G. Unemployed H. Retired

8. Where did you live before purchase house?

A. in Ethiopia

B. outside Ethiopia

Part-II

Questions about the purchased property

1. What initiate you to buy and live in your own residential house?

A. High income B. House rent high C. Business D. Get social infrastructure

E. Location stability F. Security existence

2. In what way did you get the house to purchase?

A. With the help of broker B. By family contact C. Advertisement D. Auction

3. How did you purchase the house?

A. Bought by broker mediation B. Bought by yourself negotiation with sellers

C. Bought with Relatives D. Others……

4. How many times you visited before buying this house?

A. Never visit by myself B. It is only visited by brokers

C. Less than three times D. Greater than 4 times

5. How long it takes when you bought the house?

A. In one-month C.7-12 months E. More than one year

B. 2-6 months. D.1 year

6. If you want the broker's assistance, in what kind of mechanism you find?

A. By company B. Government sponsored sells

C. Advertisements D. from their office

E. If other specify…….

7. When you bought your house and how much you purchased it? Time of house was bought _____ and the price _____

8. How do you see the market condition of the house?

A. Expensive B. Fair C. Cheap D. If others (specify) _____

9. How did you get finance, when you purchase your house?

A. Totally covered by myself C. Totally supported E. Inheritance

B. Partial support D. Borrowed F. Other

10. Do you think the brokers giving all necessary and clear serves for their clients?

A. Yes Fully B. Partially C. Not at all

11. How do you feel about brokers' working situation?

A. Very stable and secure B. Fairly stable and secure C. Just somewhat stable and secure D. Totally not stable and secure

12. Do you think buying the house by Dellala intimidation has fair price, when you compared to purchase without them? A. Fair B. Not fair

13. Do you think the Proliferation of *Dellala* could have a negative impact on house pricing? If yes, what should be expected from all us?

From government side to correct the impact_____

_____

From Dellala side to avoid these problems_____

_____

From house buyers and sellers side for reduce these problems _____

---

14. What will be the remedies to be taken for the problems faced during purchasing the house?

A. Legalizing brokers B. Government provide housing price information

C. Establishing efficient institution D. Cadastre pricing location

E. if other…….

Part III: Questionnaire related to determining variables of house price

1. When you bought your house and how much you purchased it? Time of house was bought _____ and the price _____

2. Number of levels away from the ground floor (please, say "0" if it is found on the ground floor) _____.

3. In which part of the city your house live?

1. Center of the city ☐

2. Far of the city ☐

4. Quality of the house

1. Old house ☐

2. In better condition ☐

3. Very good condition ☐

5. What is the estimated age of the house? _____.

6. Size of the floor area of the house (m2) _____.

7. Number of rooms of the house; _____.

8. How much time it takes to get a public transport or taxi?

1. Less than 10 minutes ☐

2.1 0 to 20 minutes ☐

3. Greater than 10 minutes ☐

9. How much time it takes to reach market or Gulet ?

1. Less than 10 minutes ☐

2. 10 to 20 minutes ☐

3. Greater than 10 minutes ☐

10. How much time it takes to the nearest elementary school?

1. Less than 10 minutes ☐

2. 10 to 20 minutes ☐

3. Greater than 10 minutes ☐

11. How do you estimate the current market condition of the house?

Appendix 2

Addis Ababa University, EiABC

Department of Urban and Regional planning

Field of Urban Land and Property Valuation

Questions for Broker

Dear Respondents,

My name is Wondu Fikadu-MA student at Addis Ababa Ethiopian Institute of Architect, Building constriction and City development. The objective of this study is to probe the role of real-estate Dellala on residential real-estate house price escalation factors prospects they considered in Addis Ababa, Ethiopia. Please be aware that the purpose of the study is purely academic. I would appreciate your taking the time to complete the following questionnaire. Your responses will be held confidential. Responses will not be identified by individual. All responses will be compiled together and analyzed.

Instruction

a) No need to write your name

b) Choose the alternative given for questions.

c) Write your answer for questions which needs explanation in the space provided.

Part – I

General Information of residents: Please tick the choose or answer on the space provided

1. Age: A. 18-25 B. 26-35 C.36-45 D. 46-55 E. 56-65 F.65>

2. Sex: A. Male B. Female

3. Marital Status A. Single B. Married C. Divorce D Other……..

4. Education Level A. Elementary Complete B. High schools complete C. First Degree

D. Second Degree E. Other _____

5. What is your employment position in this office?

_____

_____

Part III. Kindly rate the following variables in terms of your frequent usage while determining prices of residential house in A.A. Please tick ONE response how you frequently used or not used with each variable.

S/N	Variables	Determination of prices of residential house price of A.A.				
		Strongly disagree (1)	disagree (2)	undecided (3)	agree (4)	Strongly agree (5)
1	Age of the house					
2	Historical sale prices					
3	Location of house					
4	Number of rooms					
5	Market of house					
6	Per-capital income					
7	Interest rate					
8	Neighbourhood					
9	Number of levels away from the ground floor					
10	Inelastic housing supply					
11	High concentration of aggressive mortgage lending instruments					
12	Psychological factors					
13	Public expectations of future price increases					
14	Number of car parking space in the house					
15	Area of the house					

Appendix 3

Addis Ababa University, EiABC

Department of Urban and Regional planning

Field of Urban Land and Property Valuation

Graduate Program-MA

Interview Guide Questions for government employers

Dear Respondents,

My name is Wondu Fikadu-MA student at Addis Ababa Ethiopian Institute of Architect, Building constriction and City development. The objective of this study is to probe the role of real-estate Dellala on residential real-estate house price escalation factors prospects they considered in Addis Ababa, Ethiopia. Please be aware that the purpose of the study is purely academic. I would appreciate your taking the time to complete the following questionnaire. Your responses will be held confidential. Responses will not be identified by individual. All responses will be compiled together and analyzed.

Instruction

a) No need to write your name

b) Choose the alternative given for questions.

c) Write your answer for questions which needs explanation in the space provided.

Part – I

General Information of residents: Please tick the choose or answer on the space provided

1. Age: A. 18-25 B. 26-35 C.36-45 D. 46-55 E. 56-65 F.65>

2. Sex: A. Male B. Female

3. Marital Status A. Single B. Married C. Divorce D Other……..

4. Education Level A. Elementary Complete B. High schools complete C. First Degree

D. Second Degree E. Other _____

5. What is your employment position in this office?

_____

_____

Part-II

Questions to be filled by government employers

6. What do you think the reasons that brokers used to escalate house price or upgrade price?

_____

_____

7. What should be expected from Dellala to improve the real estate brokerage? _____

_____

8. How do you see the relevance and comprehensiveness of the legal mechanism to control misuse and proliferation of informal brokerage in the Addis Ababa? _____

_____

_____

_____

9. What the government shall plan to create clarity and awareness on real estate brokerage?

_____

_____

10. How do you see the implementation and monitoring activities of the real estate brokers' situation currently in Ethiopia?

_____

_____

_____

11. How do you explain the brokers' skill and licensing situation in Ethiopia? _____

_____

_____

12. What would you think about unlicensed brokers shall be in the future? _____

_____