

# Service quality of mortgage real estate, consumer loan intention, buying behavior of luxury apartments, personal credit at Vietnamese commercial banks

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**Abstract**

In the context of deepening international economic integration, the level of competition between Vietnamese commercial banks is becoming more and more fierce, the service quality factor plays an increasingly important role in the success of the banking industry. existence and development of commercial banks. The article analyzes the factors affecting the quality of mortgage real estate valuation services and the influence of the quality of mortgage real estate valuation services on consumer loan intention and buying behavior of luxury apartments. in Vietnamese commercial banks. The study was conducted in 3 major cities of Vietnam, Hanoi, Ho Chi Minh and Da Nang, these 3 cities represent the 3 regions of the country: The North, the Central and the South. The research results show that there are 5 factors that affect the quality of mortgage real estate valuation services, including: Reliability; Responsiveness; Guarantees; Sympathy; Professional qualifications of appraisal staff... In which, the factor with the highest level of impact is assurance. In addition, the quality of mortgage real estate valuation services, consumer loan intentions, apartment/land location; design and function of the apartment; The reputation and quality of investors and a new factor in this study compared with previous studies is that the spiritual factor has a positive and statistically significant impact on the buying behavior

of high-end apartments. citizen. Finally, the interest rate variable has a statistically significant moderating role in the relationship between consumer borrowing intentions and people's buying behavior of luxury apartments.

**Keywords:** Mortgage real estate, consumer loan intention, commercial banks, network data analysis

## 1. Introduction

Buying a house is one of the important things in human life. Because, buying a home is a complex decision-making process, as evidenced by its expensive, infrequent, risky, high self-expression and significant differences in human perception[1]. House buying behavior is also considered a long-term investment decision because it is the main point affecting people's living standards from both macro and micro aspects [2].

The speed of urbanization in Vietnam is taking place rapidly. Along with that, the average annual urban population growth rate of 2 - 3.4% has caused the demand for housing to increase. According to the report of the multinational Jones Lang LaSalle (JLL), the total supply of completed apartments in Ho Chi Minh City and Hanoi as of the fourth quarter of 2019 reached 201,707 units and 224,179 units in all areas, respectively. segments, equivalent to a ratio of 17 apartments/1,000 people. In which, apartments account for a major proportion of the total housing supply in Hanoi (87.3%) and Ho Chi Minh City (90%).

Supply in the high-end and luxury apartment segments is currently quite high, especially after the projects under construction are completed. JLL estimates that the density of high-end apartments per capita in Ho Chi Minh City will reach 3 units per 1000 people, roughly equivalent to the level in Bangkok, Kuala Lumpur and Manila and higher than Jakarta [3-11].

Globalization, along with the development of the industrial revolution 4.0, has fundamentally changed the global real estate market and Vietnam's real estate market is no exception to this trend. Real estate market management is one of the four main activities to create synchronous market factors of the Vietnamese economy. An important factor affecting the growth of the economy is the development and integration of the real estate market. Vietnam's real estate market in recent years has achieved remarkable growth and development, the growth in capital sources from different economic sectors being brought into the real estate market, the diversity of types of real estate on the market, the growth in the volume of real estate transactions. However, in the integration and globalization of the current economy, the real estate market also needs to be perfected to best meet the requirements of the globalization of the real estate market in line with the requirements. Integration is one of the important issues that need to be researched and clarified in the specific context of the real estate market in Vietnam [12-16].

The purpose of the article is to evaluate the factors affecting the quality of mortgage real estate valuation services, consumer loans intention and factors affecting behavior buying of high-class apartments. The article layout in addition to the introduction includes: Literature review, research methods; research results and conclusions.

## 2. Literature review

### 2.1. Real estate valuation

The globalization of the real estate market is the process of consolidating the real estate market on a global scale, the real estate market of a separate and specific country is gradually integrating, forming a creating linkages and increasing exchanges in the real estate market between countries, building investment and commercial institutions in the real estate sector

between countries and creating opportunities and challenge in the market. Globalization has created a radical change in activities in the real estate market, changing the nature and location of the real estate market in Vietnam. Previously, the real estate market was only national, now the market is international, the real estate market in our country is attracted and becomes a dependent part of the world economy, the influence of the real estate market. The impact of globalization on the real estate market in our country is reflected in a number of factors such as: capital investment in real estate projects, the diversification of types of real estate in the market, the application of new technologies in the real estate market. real estate investment and business activities...especially the study of product cycles and real estate valuation taking into account global influence [17-21].

Real estate valuation is a form of applied economic analysis, which is the estimation of the value of specific property rights in monetary terms for a well-defined purpose under specific conditions. possible and on a given market with appropriate methods. Real estate valuation will become more complicated in the current trend of globalization of the real estate market, so there is a need for academic research to apply the appropriate valuation method to each type of real estate. To ensure accuracy in real estate valuation.

The basic characteristics of real estate valuation: Valuation is the work of estimating the price of real estate: An estimate of the value of specific property rights in monetary form for a well-defined purpose. Estimate in money with the highest confidence about the benefits that real estate can bring to a certain subject at a certain time. Real estate valuation is an activity that requires a high degree of expertise, a valuation method based on scientific bases. The value of real estate is calculated in money (local currency and international currency). The value of the property is determined at a specific time: The value of the property is determined for a certain purpose; The value of real estate is determined based on the real estate product cycle in the country and abroad. In addition, the value of real estate is also determined based on the value of investment in real estate in the domestic and foreign markets; Data used directly or indirectly when valuing (technical criteria, nature, location, size, real estate condition, technical standards of real estate) are related to the market, especially the market cycle product period [8, 22-26].

Real Estate Valuation Principles: Principles based on the owner's view of the usefulness of the property being valued (principles based on utility, replaceability, and opportunity cost). ): Principles based on operational properties of real estate to be valued (equilibrium principle, contribution principle, residual income principle, market suitability principle); Principles due to influence of real estate environment, real estate market (principle of supply and demand, principle of substitution, principle of balance, principle of competition and principle of dependence on external factors); Principles of effective use of appraised real estate

The relationship between real estate valuation and the real estate market. Real estate valuation involves transactional relationships in the real estate market such as purchase, sale, mortgage, rental of real estate and compensation... that relationship is expressed through: Real estate valuation help sellers and buyers determine the market value of real estate, ensure payment on the basis of reasonable prices, avoid the risk of facilitating transactions, agreements to buy and sell real estate. the real estate went smoothly; Real estate valuation helps banks and credit institutions have grounds to make loans by mortgage of real estate assets; Real estate valuation helps businesses value their assets, thereby valuing the business so that the business can buy, sell, merge, equitize, and convert businesses on the market; Real estate valuation helps the State to have a basis to collect real estate taxes, service fees and proceeds from the sale of State real estate in a fair and reasonable manner [11, 27, 28].

Factors affecting residential real estate: Socio-economic factors surrounding the project (income level, access to credit, views on housing according to custom, population growth, culture)

immigration for foreigners...); Geographic location (location of property in the city or province, accessibility to private and public transport, parking, other business area connectivity); Current architectural and technical status of the building (legal records of the building; anthropometric index, structural safety factor, earthquake resistance, apartment area, building quality fireproof system) , ventilation system and its quality; number of floors; year of construction; sub-zones, area, its quality; ceiling height, exterior system...); The current state of the residential real estate market (the level of supply and demand in the market, the stage in the development cycle of the residential real estate market, the future forecast of this property line, the migration of population in the area...)

## **2.2. Real estate valuation method**

Real estate is a commodity in the real estate market. When choosing a real estate valuation method, it is necessary to ensure the principle of conformity with the provisions of the law, and at the same time suitable to the characteristics, properties and functions of the real estate to be valued, in accordance with the integration trend of the economy. economic (real estate valuation should pay attention to the real estate product cycle and investment value in real estate projects in the country, as well as countries in the region and around the world). On the other hand, the choice of real estate valuation method depends on the ability to collect information from that real estate in practice. Currently, there are many methods of real estate valuation, but depending on specific circumstances, market situation, the reasonableness of each valuation method (advantages and limitations of each method) that can be selected. Choose one of the following real estate valuation methods:

### ***Direct comparison method***

The direct comparison method is an evaluation method based on the analysis of the prices of similar properties (in terms of land type, area, land class, shape, street type, building type and geographical location) with a successful transaction price or being bought or sold on the market at the time of valuation. The direct comparison method is best used when valuing residential properties or vacant land in residential areas, commercial and service properties with homogeneity (apartments, condominiums, row of houses built of the same type, workshops and warehouses built on the same premises for lease). The direct comparison method is based on the analysis of the purchase and rental of real estate compared in the market and the goods can be assumed to be substituted. However, the similarity between real estate is sometimes difficult to achieve, moreover the price of real estate often changes over time. The order of determining the value of real estate by the direct comparison method is shown in the following steps:

Step 1: Collect information about similar properties that have been traded in recent times

Step 2: Check, compare and analyze relevant real estate information

Step 3: Select and adjust content related to real estate (especially real estate prices)

Step 4: Determine the value of the property based on the equivalent property price after adjustment.

- Advantages

+ The main comparison method applied in real estate valuation is the common buying and selling transaction on the market. It is a method with almost no technical difficulties, since it does not require formulas or computational models, but relies on the presence of market transactions to assume signs of value.

+ This method represents an assessment of market value, so it has a solid basis to be recognized by customers, as well as by legal authorities.

- Defect

+ It is necessary to have clear market information about similar real estate transactions or it will not be applicable.

+ The information often has to be of historical nature, at different times, it is difficult to bring to the same evaluation ground, especially for foreign real estate.

+ This method is used in areas where the market is developed or developing. In areas where the market is underdeveloped, the use of this method is not only very difficult, but the results obtained are not well founded and unconvincing.

Cost method

Cost method: This method is essentially the discounted cost method (also known as the contracting method) which is a method of estimating the components of real estate (land plots and buildings, real estate, etc.) on land). The value of the components of real estate is measured by the cost to purchase and build it. This is a method based on the theory that the market value of a defined area of land to be invested can be estimated by the sum of the land value and the value of the buildings attached to the land, after deductions have been made. Hao. Thereby, we will determine the price of real estate through that cost method:

Market price = Market price of the land plot + Renewal cost to replace structures on the land – Accumulated depreciation

The cost method is often used to value real estate for specific uses, such as hospitals, schools, churches, libraries, power plants, chemical plants, oil refineries, etc. properties with little market comparison data; pricing for insurance purposes; The valuation method of the bidding participants or the bidding inspection is shown in the sequence of steps to determine the real estate price:

Step 1: Estimate the value of the land to be valued, treat it as vacant land and assume the highest and best use

Step 2: Estimate current costs for new construction or for replacing existing structures on the land

Step 3: Estimate the total cumulative discount (actual wear and tear) of existing buildings on the land.

Step 4: Subtract the accumulated discount from the current cost of rebuilding or replacing existing structures on the land

Step 5: Add the estimated value of the land with the reduced cost of the work, will get the estimated value of the property to be determined.

- Advantages

+ Used to value real estate when there is a lack of market evidence to compare, or a lack of basis for forecasting future income that real estate generates.

+ This method is relatively simple in terms of mathematics, suitable for valuing real estate for specific purposes, for insurance purposes, for bidding...

- Defect:

The cost method must be based on market data, so there are limitations to the data collection required.

+ The costs of real estate are not always consistent or consistent with the value of the property. As a result, cost-based pricing often does not reflect market value.

+ Estimation of asset depreciation depends heavily on the real estate appraiser.

+ The appraiser must be familiar with construction technology and must have enough experience to be able to apply this valuation method.

### Income method

The income method is a method of estimating the market value of a property, based on the income that the property will bring or is likely to bring in the future. Real estate value is estimated by capitalizing the value of estimated future income in terms of present value. This method is often used to value properties that have the potential to generate a financial surplus that exceeds the direct costs of using the existing property, income-generating rental properties, investment-generating properties. profit. This method is very suitable for valuing real estate that is likely to bring a steady income over time or for commercial real estate - services, technology, agriculture, real estate are goods or Real estate has the ability to generate income like land. The order of determining real estate prices by income method is shown through the following steps:

Step 1: Estimate the average annual income that real estate brings, taking into account all relevant factors affecting income

Step 2: Estimate all expenses to be deducted from annual income, such as: property tax, repair, maintenance, and warranty of real estate

Step 3: Determine the appropriate interest rate to calculate, this work can be based on the analysis of the interest rate of similar properties.

Step 4: Apply the capitalization formula to find the present value of the property to be valued.

Determining real estate prices according to the income method using the direct capital method. The direct capital method is a form of income, through the process of converting future income streams into a present value of capital at the time of determining the price of real estate according to the formula:

Real estate valuation = Annual net income from real estate / Market capitalization rate

+ Annual net income from real estate is equal to annual revenue minus annual expenses

+ Capitalization rate: is the ratio of the expected return in one year to the total value of assets (based on the value of similar assets traded in the market)

- Advantages

+ Simple in application, clear calculation formula, easy to understand

+ Relatively high accuracy when it comes to accurate and comparable transaction information

- Defect

+ In the analysis of transactions, many aspects need to be adjusted: life expectancy, quality, lease term, changes in rental rates in the future... correction.

+ Many estimates and adjustment data, therefore, require high level and experience of adjustment and must be full of information.

Brings limited information about assumptions about future cash flows

+ The income method requires accurately determining the total income from the real estate in each year and must predict the income for the entire remaining calculation period of the real estate.

### Residual method

The residual method is a valuation method in which the market value of the property to be assessed is determined to its equity value on an estimated basis by subtracting all the estimated value of the hypothetical development of the property. all costs incurred to create that development. The residual method is applied to determine the value of real estate, when the property has development or has the potential to develop.

This method will be very effective if the property has potential value and this value will increase greatly when the property is developed that real estate is developed. This property can be vacant land for development or land with existing building structures that need to be replaced or renovated and redeveloped with completely new building structures. The order of determining real estate is shown through the following steps:

Step 1: Determine the optimal use of the property to be valued, taking into account building regulations and other constraints.

Step 2: Estimate the total value of the development, using the direct comparison or investment approach.

Step 3: Estimate total development costs, including: investment costs in land, construction costs, developer profits, marketing costs, legal fees, financial costs and related fees.

Step 4: Take the total value of development minus the total costs incurred by the investor

Determining the value of the property (undeveloped value) by the residual method is the residual value after deducting all costs to create the development from the estimated value of the development, It is expressed by the following formula:

Value of real estate or residual value = Value of development – Development costs (including investor interest...)

- Advantages:

+ This method is suitable for potential development real estate, investment projects.

+ The pricing method is quite simple, based on market data, so it is easy to convince customers.

+ This method is implemented through describing an investment process, so it is valuable in investment advice.

- Defect:

+ Difficulty in determining the highest and best use value

+ All cost and selling price estimates are subject to change depending on market conditions

Final residual value is sensitive to changes in cost estimates and selling prices

+ This method does not take into account the time value of money, which means it has not been brought to the same level for evaluation

Profit method

The profit method is a method of determining the price of real estate based on the profitability of using the property to be valued. The profit method is based on the assumption that the value of real estate is closely related to the realizable profit generated by the exploitation of that real estate, proving that the property is more valuable than a non-profitable real estate. or low profit. Based on the above principle, this method goes into analyzing the estimated income of using real estate, then deducting reasonable business operating expenses, leaving a surplus expressed as income. The annual net is typical for real estate. This net income is then converted into capital in exactly the same way as in the investment method. This method is used to value special properties, such as hotels, public housing properties, cinemas and other properties, where comparison with similar properties is difficult. because their value mainly depends on the profitability of real estate. This method is also often used as a basis for calculating tax rates. The order of determining real estate prices is shown in 4 steps:

Step 1: Estimate the total revenue of the real estate

Step 2: Estimate the total costs directly related to making a profit (return on capital, salaries for executives, bonuses for employees, etc.)

Step 3: Determine the capitalization rate

Step 4: Estimate the value of real estate according to the capitalization formula

- Advantages:

+ The method is suitable for real estate activities that generate profits

+ This method does not require an estimate of the specific value of the real estate, it is suitable for determining the value of real estate that has not been traded on the market with a specific type of business in which there is a contribution from this real estate.

- Defect:

Estimated return alone will not accurately reflect the actual level of income of the asset  
 - Because real estate contributes to certain business activities, it is very difficult to determine the percentage of contribution to the overall profit of the real estate, requiring the appraiser to have an understanding of that business.

With the role of real estate valuation methods in the operation of the real estate market today, determining the appropriate valuation methods for each type of real estate has become a very important content for the appraiser. With the valuation methods that the author has presented above, the person doing the valuation can choose the correct valuation method, suitable to the nature of the type of real estate, in accordance with the laws of Vietnam. and international practices in the context of globalization of the current real estate market.

### ***2.3. Consumer lending activities in commercial banks***

Consumer loans are loans intended to finance the spending needs of consumers, including individuals and households. This is an important source of finance to help these people cover their housing needs, household appliances and transportation. Besides, expenditures for education, health and tourism needs... can also be financed by consumer loans.

Characteristics of consumer loans: The size of each loan contract is small, leading to high lending costs, so interest rates on consumer loans are often higher than those of other types of loans in the field. commercial and industrial; Interest rates on consumer loans are high because they have the largest cost and highest risk in a bank's loan portfolio due to the cyclical sensitivity of consumer lending. It increases during periods of economic expansion, when people feel optimistic about the future. On the contrary, borrowing from banks will be limited when the economy falls into recession; When borrowing money, consumers appear to be less sensitive to interest rates. Consumers are more concerned with how much they pay each month than the interest they incur; Income level and education level have a great impact on the use of loans of consumers; The character of the customer is a difficult factor to determine but very important, determining the repayment of the loan.

The role of consumer lending.

For banks: First of all, consumer loans help banks improve capital efficiency. Consumer loans have high costs but at the same time generate much larger profits per dollar spent than other forms of lending; Consumer loans also help banks attract more customers to use other forms of services. However, customers also tend to use personal banking services at banks they already have a credit relationship with. use. This is also a prerequisite for the bank to improve its competitiveness and integrate with international trends.

For consumers: As an individual consumer, we see that this type of credit has many advantages, especially for those with low and middle income. Thanks to the bank's financing, people with low or moderate income will be able to buy high-value goods such as apartments or vehicles that cost much more than they can afford. the salary that the person can receive monthly, and thereby can improve life more fully.

For the economy: Whether the economy grows at the necessary rate or not is thanks to the level of individual consumption in the economy, the larger the economy, the more it stimulates producers, businesses that do business, promote economic development. Therefore, consumption is the lever of the economy, it is also the lever to stimulate the supply of goods. Therefore, the stronger the consumer lending, the greater the consumption, or the greater the shopping demand of the people, the more it promotes the development of the economy... Thereby, it shows that consumer lending is a right direction. of commercial banks will then pull

the economy up and at the same time the optimism of individuals who believe in the future will have high income, consumer lending will be expanded.

Characteristics of home loans of commercial banks.

Characteristics of borrowers: The subjects of home loans are first and foremost individuals who have full legal capacity and civil acts. Depending on the classification criteria, borrowers are classified as follows:

By income level: For credit officers, income level and income stability are important information. Income is classified into three main groups:

- Low-income people: people with difficult circumstances who want to improve their lives but are limited because their income is not enough to satisfy their needs. However, they also want a better life like any other group of people. They are evaluated as potential customers in the present and future of commercial banks..

- Middle-income people: This is the majority in society, especially in urban areas, when their income increases, their consumption needs also increase, including the need for housing. live. This can be considered as a target market for commercial banks, commercial banks can coordinate with investors to provide small private houses or new apartments with an area not too large. .

- High-income people: Along with the economic development, this group of people in urban areas is increasing markedly. The type of house that high-income people are interested in are usually large-area apartments, luxury apartments, villas, private houses... In this group, borrowing is often considered to increase solvency and consider it as a flexible amount to spend when their accumulated capital has been used for medium and long-term investments.

Sort by nature of income:

- Groups with stable and regular income: usually salaried customers who have their own businesses or are professional practitioners such as doctors, lawyers, singers...

- Group with unstable income: often self-employed

Characteristics of loan size and term: Since home loans are used to finance the purchase of houses, apartments or home repairs for people, the average size of a loan is very large. much larger than normal loans, especially consumer loans and other small business loans; The tenor of a home loan is very long, often having the longest term in a bank's loan portfolio, which can last from 15 to 20 years.

Characteristics of risks and interest rates of loans: Regarding risks: the risks from home loan activities are very large due to the long loan period that can last up to 15, 20 years, leading to many possible problems. happening. The risk of home loan exposure in general can come from three sides: risk from borrowers, risk from the market, and risk from the bank itself: Risk from customers is risk of failure to repay principal and interest on time, causing losses to the bank. The source of repayment from the home loan is mainly taken from the regular income of the customer. This income depends on the borrower's job, age or health. The longer the term, the greater the risk. In addition, the quality of credit information is low, the information obtained is mainly provided by the customers themselves, they may give incorrect information (moral hazard occurs), moreover, the collateral is often correct. is a house purchased from a bank loan, this is a collateral asset with low liquidity, which is difficult for the bank to transfer into cash to recover capital from the sale of assets when there is a risk. While the price of the house often has great fluctuations, the risk of price decline is very high. Risks from the bank: the customer is unable to repay the loan, or the interest or principal payment is late or overdue. When the customer is unable to repay the debt, there is collateral but the collateral is difficult to develop. forever. Interest rates: The interest rate of home loans depends on the time of signing the contract and agreement between the bank and the customer. This is a long-term loan, the bank will be affected by interest rate risk,

the instability of the macro-economic environment and the bank may also be exposed to risk when house prices fluctuate in the short term. In addition, lending has a cyclical sensitivity that increases during periods of economic expansion, when people feel optimistic about the future.

Legal basis of home loan activities.

Housing lending at commercial banks is a new and complicated field for banks due to the characteristics of real estate borrowers. Real estate is a highly sensitive asset, extremely important and greatly affects people's lives. Therefore, the State has a lot of regulations in this field to manage effectively. For home loan activities, there are many relevant documents regulating this activity along with credit activities in general.

In the years 1993-1994, the consumer lending activities of commercial banks in Vietnam began to develop and focus more on installment loans. The first legal basis for applying consumer loans was the Decision No. 18/QD-NH5 dated February 16, 1994 of the Governor of the State Bank promulgating the Regulations on lending capital for family economic development and lending to households. Consumer loans. After a period of operation, the above decision was replaced by Decision No. 324/1998/QD-NHNN1 dated September 30, 1998 of the Governor of the State Bank of Vietnam promulgating the Regulation on lending of credit institutions to customers.

Regulations on home loans.

Regulations include short, medium and long-term types that replace all existing short, medium and long-term credit regulations (including consumer loans). According to this regulation: Loan guarantee shall comply with the Government's Decision and the guidance of the State Bank.

From the initial regulations in consumer lending activities in general and home loans mentioned above, up to now, legal documents have become more and more strict and clear.

#### **2.4. Intention to buy a house**

There are many studies on home purchase intentions and the factors that influence them. Recent research by [29] shows that the reason for buying a home is pride in having ownership, owning own property instead of someone else's property, no landlord, and of course tax benefits. [30] study on the cognitive factors that control the behavior of millennials towards the intention to buy an environmentally friendly house. [31-33] has a study on the influence of children on the household's willingness to buy a home. In addition, the factors of family annual income and personal car ownership have a negative effect, while the influence of individual age and education level on purchase intention is insignificant.

[34] researched on green housing purchase intention among young Chinese, on the basis of an expanded theory of Theory of Planned Behavior (TPB). Government incentives are considered the most important factor, followed by attitudes towards consumer behavior and subjective norms. Perceived behavioral control is a factor that does not affect the intention to buy green housing of young consumers. In addition, subjective knowledge has an indirect impact through attitudes towards behavior. Concern for the environment also produces an indirect effect through attitudes towards the behavior and subjective norms for the corresponding purchase intention. It is therefore implied that the Government should play an important role in promoting green housing during this period.

[35] studied the factors affecting the intention to buy land properties in Greater, Kuala Lumpur (KL), Malaysia. The results show that there are positive relationships between attitude, subjective norm, perceived behavioral and financial control to the intention to buy land assets, while location and living space do not show Similar relationship in the land market in Greater, KL.

[2] studied the influence of a number of variables on the role of independent variables (attitude, subjective norm, perceived behavioral control) and the role of moderator variables (location, public service). to the dependent variable is the intention to buy real estate in Jeddah, Saudi Arabia. In addition, demographic characteristics such as age, gender, marital status, family size, citizenship status, education, occupation and monthly income were also included as control variables. research. The theoretical basis of this study is based on Theory of Reasoned Action (TRA) and TPB theory.

In Vietnam, there are a number of authors doing research on this content. As [36, 37] focuses on understanding four main groups of factors: Cultural changes; land issues for urban housing development; urbanization and population pressure; the value of the condominium - including build quality, service, environment and price.

Research by [38] on the selection of apartments in urban areas in Hanoi City. Research has shown 2 factors affecting the choice, namely: Family stage; Style of life. In addition, the control variables include: Age, gender, occupation, income, purchase price per square meter of the apartment.

### **3. Research Methods**

#### **3.1. Research Context and Research Samples**

##### ***Research background***

2020 is a year with many difficulties and challenges due to epidemics and natural disasters, but with the drastic, synchronous and effective direction of the Government, the Prime Minister of Vietnam's economy in 2020 will maintain the growth rate. growth, reaching 2.91%. In which, the Construction industry increased by 6.76%, contributing 0.5 percentage points; The real estate industry contributes about 4.42% (if we include indirect contributions of capital, land, materials, construction... in the real estate sector, the contribution of the real estate industry is still higher, about 8-11%). The above results are obtained because the Government and the Prime Minister have directed the Ministries and sectors to actively research and perfect institutions and policies to ensure the synchronization and interoperability of the legal system related to law. real estate investment, construction and business, such as: Construction Law 2020 and Investment Law 2020 along with many other legal documents; at the same time, quickly and promptly research and promulgate many mechanisms and policies to help remove difficulties, recover and develop the economy in general and the real estate sector in particular, such as: Resolution No. 41/ NQ-CP dated April 9, 2020 and Resolution No. 84/NQ-CP dated May 29, 2020 of the Government.

During the year, the Ministry of Construction has made many reports and proposed to the Prime Minister on solutions to remove difficulties to promote the development of social housing for low-income people in urban areas and industrial park workers (Newspaper). Report No. 25/BC-BXD dated March 25, 2020, Document No. 1483/BXD-QLN dated March 31, 2020 and Report No. 43/BC-BXD dated April 28, 2020); urge localities to report on the prevention of money laundering in the field of real estate business; inspect the implementation of high-end real estate projects, using a lot of land in key localities; propose solutions to prevent, prevent speculation, "blowing prices", "making prices" for fraud and profiteering. In which, focusing on effectively implementing social housing development programs for low-income people in urban areas and industrial park workers (to date, construction investment has been completed about more than 5,210,000m<sup>2</sup> houses. in society). Thanks to that, the real estate market has overcome difficulties

and maintained a relatively stable development in 2020 as shown through the following criteria: Real estate supply (number of newly licensed projects, projects completed project) stable; the structure of real estate products is adjusted more appropriately (reducing the high-end segment, increasing the mid-price segment); the volume of real estate transactions is maintained (not significantly reduced); real estate prices (selling prices of houses and industrial real estate rental, etc.) increased. Specifically, in terms of commercial housing, there are 743 projects with 232,559 licensed apartments and 288 projects with 57,149 apartments completed (in 2019 there were only 335 projects with 175,801 licensed apartments and 186 projects with licensed apartments) 66,155 completed apartments); there are 322 housing projects with 110,181 apartments that have been notified in writing by the Department of Construction of being eligible to sell houses formed in the future (in 2019 there were 203 projects with 85,612 apartments); there were 115,420 successful real estate transactions (in 2019 there were 82,604 successful real estate transactions).

According to the report and announcement of real estate market information in 2020 and the first 2 months of 2021 by the Ministry of Construction, real estate prices still increase; In which, there are areas and projects with an increase in price of over 10% compared to the beginning of 2020. It is said that localities issuing new land price lists higher than before are also the reasons for the increase in prices. Real estate, especially residential real estate, creates more difficulties for real estate businesses as well as opportunities for low-income people to have accommodation.

The phenomenon of real estate price increase in localities has many different causes such as: When the population increases, the economy develops, industrialization - urbanization, but the supply has not been able to meet the demand, leading to the supply-demand mismatch; due to the shift of investment capital flow to ensure safety when other investment channels face difficulties during the epidemic period; due to real estate speculators taking advantage of factors such as preparing urban planning, preparing to build infrastructure works, expanding urban areas, etc. In particular, the increase in market prices of raw materials, fuel, materials and input costs for real estate projects is also the reason for the increase in real estate product prices.

For a real estate project, the cost of land is one of the important input costs affecting the output cost of the project. However, the structure and proportion of land costs in real estate prices are very different for each project: on average, in urban areas, land use fees account for about 10% of the cost of apartments. apartment; 20-30% of the cost of low-rise semi-detached houses; less than 50% of the cost of villas (in suburban and rural areas with very cheap land prices, this rate is lower; in urban centers with very high land prices, land use fees are major cost in the price).

After the Government issued Decree 96/2019/ND-CP dated December 19, 2019 on the land price bracket, the People's Committees of the provinces/cities developed and issued a decision to issue the local land price list applicable to the land price bracket. period 2020 - 2024; Localities have also issued Decisions on the issuance of land price adjustment coefficients applicable in 2021 for application and implementation. Accordingly, the land price issued by localities has averaged 15-20% increase compared to the land price list in the previous 5 years. Thus, in case the land cost of a real estate project is directly based on the land price in the issued land price list, an increase in land price of about 15-20% of localities will only increase the price of land. into residential real estate about 1.5-5%. However, for real estate projects implemented through auction of land use rights, bidding for projects using land or receiving land use right transfer, the project's land cost is affected by market price of land (at that time the adjustment of the local land price list only had an indirect impact). On the other hand, the application of the new land price bracket and land price list in localities has not been long (from January 1, 2020 at the earliest); Projects that are completed and have products on sale in 2020 are mainly projects that implement and apply land prices according to the previous price bracket and land price list. Therefore, the issuance of new land price lists by localities, which are higher than before, is not the main reason

for the increase in housing and residential land prices of projects in localities in 2020 and in the future. However, the increase in land prices still has an impact on increasing real estate prices in the coming time, especially the housing prices of people in existing areas.

#### Research sample

We conduct direct and online surveys of customers who use real estate appraisal services and consumer loans to buy houses - namely luxury apartments (valued from 3 billion VND or more). We have done it continuously for 5 months from November 2020 to March 2021 at transaction offices of commercial banks in Vietnam. We have hired a survey company in Da Nang city and Ho Chi Minh city with a cost of 80,000 VND for 1 survey form. Results obtained after 5 months of survey, we collected 858 survey questionnaires both online and in hard copy. We classified and entered data into Excel 2020. As a result of reviewing and removing invalid survey questionnaires, we had 829 valid votes left for analysis.

### 3.2. Research model

[34, 37, 39] said that service image, internal organization, material support of service production system, interaction between employees and consumers, and customer satisfaction contribute on service quality. Meanwhile, [40] said that service quality is influenced by 5 basic factors: Reliability, Responsiveness, Assurance, Empathy and Tangibles.

In this study, the author uses the [29, 41]- the most popular and most applied service quality research model in service research. In this model, the quality of consumer lending services is affected by 5 factors: (1) Reliability; (2) Response; (3) Guarantees; (4) Empathy; (5) Professional qualifications of appraisers.

#### Factors affecting buying behavior of luxury apartments:

**Location:** A strategic location is often related to accessibility. They are often close to shopping malls or retailers, public transport, schools, hospitals or work places because it is not only convenient to work and send children to school, but also offers many benefits. fruit. [35] identified short distances to work in relation to safe work relationships, low travel costs, fewer job changes, lower transportation costs, and more time for activities. daily activities, especially for young people due to proximity to workplaces and available facilities. Not only apartments but with any real estate, location is the most important factor. The most desirable choice of many people are apartments in the central area, this is an area with complete infrastructure, full services and high education. According to research by Saw Lip Sean and Tan Tack Hong, when considering the location of an apartment, consumers will be interested in issues such as the distance from the apartment to the workplace, to the hospital, to the school, to the school. downtown. Location of the apartment: Choosing the floor to buy in apartment buildings is very important because it determines the "view" of the apartment. Usually, the higher you go, the more expensive it is because the higher you go, the more open the view, the fresher the air and the less affected by environmental factors such as insects or humidity. In the study of the structural elements of the apartment by MSc. Ngo Thanh Mai, the issues that consumers often consider are: Feng shui factors, direction of the apartment, low or high floor, the view of the apartment.

#### Reputation and quality of the investor:

Previous studies have shown that the desire to own a home instead of renting and pride in owning one's own are important factors influencing consumer buying behavior [29]. [34, 42, 43] also shows that legal is very important in many aspects. Legitimate transactions are expected in all civilized societies. Notably, for BDS products (land and house), all good qualities and aspects depend on the legal feasibility of the product. Legal is the aspect that shows the prestige and quality of the investor. Reputation of the investor, term of ownership of the apartment, time of

handing over the apartment, flexibility in investment. payment, diversity in payment, purchase and sale procedures, complete and clear legal documents, bank guarantee for the project. Before buying an apartment, factors that also need to be carefully considered and selected by customers are: Quality of construction and fire protection system, security, parking area. vehicle, maintenance service.

Design: Buying an apartment to live in, buyers really want to own a space that is not only beautiful but also reasonable. When considering this factor, consumers will consider aspects such as: There are many trees, natural light, no noise pollution, classic or luxurious or modern style. Customers often focus on the utility of the apartment in terms of the facilities where it is located. I am going to live like: Trade center, supermarket, hospital, school, sports area, food court, spa.

Consumer loans intention: With projects supported by consumer loans from banks, consumers will have faster and more buying behavior.

Spirituality: Spirituality is an element of Eastern culture and belief. Before they buy a house - a property of great value, they often go to "divine". Especially in Vietnam, this factor is very important and directly affects the buying behavior of high-end apartments of Vietnamese people.

From the concepts of the above research variables, the research model is as follows:

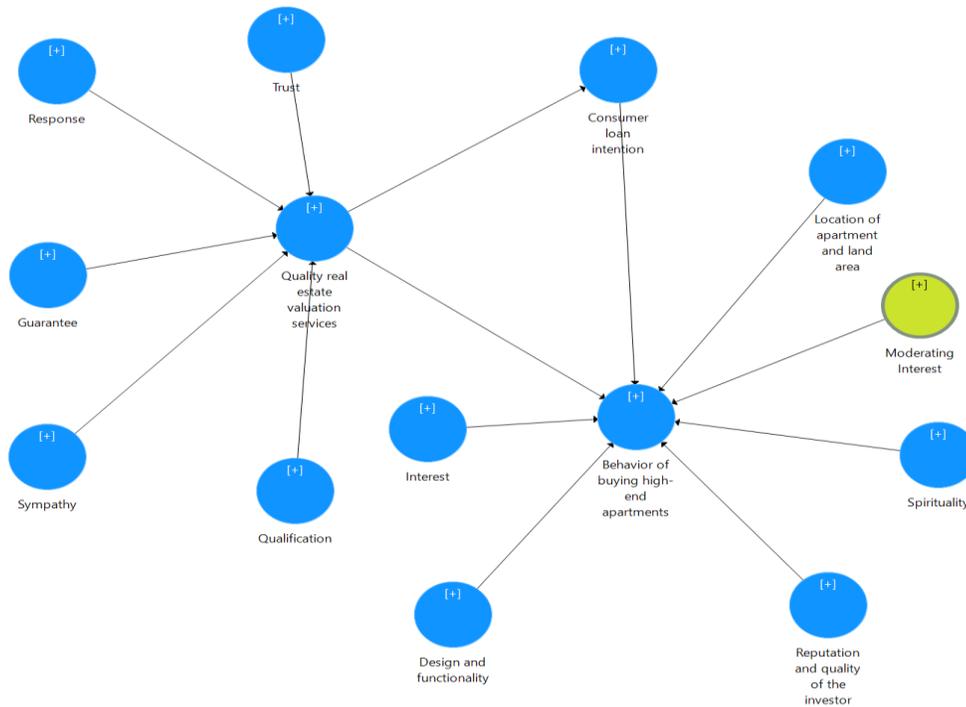


Fig. 1. Research Model

With the research variables mentioned in the research model, the research variables are measured using a 5-point Likert scale with 1 being Strongly Disagree and 5 being Strongly Agree.

Specifically, the research variables are measured as follows:

Quality of real estate valuation services: Measured by 5 items developed from research by [1].

5 factors affecting the quality of mortgage real estate valuation services are developed from the research of [38].

Five factors affecting people's buying behavior of high-end apartments are developed from research [38].

The research hypotheses are as follows:

*H1: Reliability positively affects the quality of mortgage real estate valuation services*

*H2: Responsiveness positively affects the quality of mortgage real estate valuation services*

*H3: Assurance has a positive influence on the quality of mortgage real estate valuation services*

*H4: Sympathy positively affects the quality of mortgage real estate valuation services*

*H5: Professional qualifications of appraisers positively affect the quality of mortgage real estate valuation services.*

*H6: The quality of mortgage real estate appraisal services positively affects people's intention to take a consumer loan to buy a luxury apartment.*

*H7: Consumer loan intention positively affects people's buying behavior of luxury apartments*

*H8: The quality of mortgage real estate appraisal services positively affects people's buying behavior of luxury apartments.*

*H9: The location of the apartment and the location of the apartment positively affect the buying behavior of luxury apartments*

*H10: Reputation and construction quality of investors positively affect buying behavior of luxury apartments*

*H11: Design and usability have a positive influence on buying behavior of luxury apartments*

*H12: Spiritual vision positively affects buying behavior of luxury apartments*

*H13: Consumer loan intention plays an intermediary role in the relationship between the quality of mortgage real estate valuation and people's buying behavior of luxury apartments.*

*H14: Consumer loan interest rates have a positive impact on people's buying behavior of luxury apartments*

*H15: Interest rates have a moderating role in the relationship between consumer borrowing intentions and people's buying behavior of luxury apartments.*

### **3.4. Analytical techniques**

We use Excel 2020 software for initial data entry. Then, we used SPSS 23 software to test the reliability of the scale, analyze EFA - exploratory factor analysis. When the scale factors satisfy the reliability moderation, we use Smart PLS 3.6 software to test CFA - confirmatory factor analysis to test the overall reliability, discriminant validity, test the indicators of the measurement model and finally evaluate the structural model to test the research hypotheses.

According to [44], the number of studies using PLS-SEM published in recent years has increased rapidly. In the fields of organizational behavior, information system management, strategic management and in marketing research because PLS-SEM has many advantages over CB-SEM in the following situations: (1) Acceptance small sample size, data not normally distributed; (2) Can be used for complex research models with many intermediate, regulatory, latent and observed variables. Especially the structural model; (3) Capable of analyzing the structure of the result model (Reflective) and the cause model (Formative); (4) Suitable for predictive-oriented studies[36, 45].

In addition, if non-normally distributed data are a big problem for CB-SEM (ie: CB-SEM requires normally distributed data, this is said to be very difficult since studies often survey by non-probability convenience method). However, PLS-SEM is "very powerful" when using non-normally distributed data [33].

According to [33], when using PLS-SEM technique, it is necessary to verify through 2 steps: (1) Check the measurement model; and (2) Verify the structural model. As follows:

(1) Evaluation of the measurement model:

- Reliability of indicator variables (or called observed variables)

In the outcome model (Reflective model), the indicator variables are explained by the latent variable, the load factor of the indicator variables  $\geq 0.7$  (or 0.40 is acceptable in exploratory studies[46]).

- Intrinsically consistent reliability

Intrinsically consistent reliability is measured through Cronbach's alpha value [45] with an acceptable value of 0.7 in the initial research periods and each latent variable must have at least 2 indicator variable.

- Convergence value

Convergence value evaluates the relationship between indicators measuring the same latent variable. The convergence value of the scale is evaluated through:

□ For exploratory studies, the composite confidence coefficient (CR) is in the range of 0.6 – 0.7, but ideally should be  $\geq 0.7$ ;

□ The external load coefficient of the observed variables must be  $\geq 0.708$ ;

□ Average variance extracted AVE (Average variance extracted, reflecting the overall variability of observed variables calculated by latent variables) must be  $\geq 0.5$  ( $0.7082=0.5$ )[45]; and Coefficient  $\rho_A > 0.7$ .

Discriminant validity measures discriminant validity to help ensure that there is no correlation between the factors used to measure the factors. Discriminant value is an important criterion in measurement model analysis. It measures the distinction between concepts in the research model [45]. There are two levels when considering discriminant validity, which are:

□ The degree of distinction between components in the same concept (within construct, if it is a concept of level 2 or higher);

□ The degree of cross construct between different concepts, or it refers to the critical measurement model (saturated model, the concepts in the research model are free to relate to each other).

The discriminant value is said to be eligible while the value of the criterion HTMT (heterotrait – monotrait)  $< 0.85$  [45] or using the square root AVE of each measure is larger than the system. Latent variable correlations between that factor and other factors.

In addition, in evaluating the measurement model, it is necessary to evaluate the multicollinearity of the indicator variables (VIF value  $< 5$ , no multicollinearity). [45] said that, to be able to conclude that the model fits the market data (goodness of model fit), the following coefficients need to be satisfied:

□ Coefficient SRMR (standardized root mean square residual)  $< 0.082$  (if the exploratory research type can accept  $< 0.12$ );

□ Coefficient  $d_{ULS} < 95\%$ ;

□ Coefficient  $d_{G1} < 95\%$ ;

□ Coefficient  $d_{G2} < 95\%$

(2) Evaluation of structural model

The second step in PLS-SEM analysis is to evaluate the structural model through Bootstrapping method with sample size of 5000 (return-sampling). According to [33] proposed indicators in the evaluation of structural models include:

1) The coefficient of determining the variation of the model ( $R^2$ ),

2) Degree (intensity) of influence ( $f^2$ )

3) The influence factor ( $\beta$ ) includes t values and confidence intervals,

- The coefficient of determination of the model's variation (Coefficient of determination,  $R^2$ )

The  $R^2$  value is defined as the percentage of variation in endogenous variables that is explained by exogenous variables [44]. The  $R^2$  value ranges from 0 to 1. The closer  $R^2$  is to 1,

the better the model fits the dataset. The closer  $R^2$  is to 0, the less suitable the model is. Therefore,  $R^2$  results are important indicators of the relationship between latent variables in the model and are the main criteria for evaluating structural models [44].

[45]) show that the acceptable level of  $R^2$  depends on the research context. However, the rating is still given for reference respectively: strong (0.67), moderate (0.33) and weak (0.19).

- Degree of influence (Effect size,  $f^2$ )

Also according to [45] to consider the impact of exogenous variables on endogenous variables, it is necessary to evaluate the influence coefficient  $f^2$ . When  $f^2$  is at 0.02 levels; 0.15 and 0.35, it can be concluded that the impact level is weak, fair and strong, respectively.

- Path coefficient estimates

The coefficient of influence ( $\beta$ ) provides information about the strength of the relationship between exogenous and endogenous variables. The value of  $\beta$  also indicates the directional relationship (positive or negative) of the concept in the research model [45], corresponding to the tested hypothesis. To determine the significance of the relationship, the Bootstrapping approach is proposed [44].

The Bootstrapping method uses resampled sampling ( $n=5000$ ) to estimate the accuracy of the PLS estimates by replacing sampling from the original data set [44]. The results of the t-statistic can be used to determine the significance level (p-value). Accordingly, the statistical value  $t = 1.6497$  corresponds to the 90% confidence level;  $t = 1.9676$  corresponds to 95% confidence and  $t = 2.5916$  corresponds to 99% confidence.

#### 4. Results

##### Cronbach Alpha reliability test

The results of analysis using SPSS 23 software show that the Cronbach's Alpha coefficient of the independent factors and the dependent factors both have a high reliability coefficient ( $>0.8$ ), and the variable correlation coefficient of the factors are greater than 0.3.

##### EFA exploratory factor analysis

The requirement for this analysis is that the KMO coefficient is in the range of 0.5-1, the Bartlett test has significance  $\text{Sig} < 0.05$ , the Eigen-Value criterion  $> 1$ , the total variance extracted  $\geq 50\%$ . And the loading factor loading  $\geq 0.3$ . Specifically, the research team used the Principal Components method with Varimax rotation for analysis. After conducting the EFA analysis for the 5th time, the results showed; KMO coefficient = 0.893 ( $>0.5$ )  $\Rightarrow$  this exploratory factor analysis is suitable with the research data, the extracted variance is 69.322% ( $>50\%$ ) and meets the requirements.

Next, we conduct the analysis and evaluation of the measurement model and the structural model as follows:

Table 1

Construct Reliability and Validity

|  | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|--|------------------|-------|-----------------------|----------------------------------|
| Behavior of buying high-end apartments | 0.947            | 0.949 | 0.948                 | 0.645                            |
| Consumer loan intention                | 0.920            | 0.920 | 0.920                 | 0.697                            |
| Design and functionality               | 0.838            | 0.842 | 0.839                 | 0.635                            |
| Guarantee                              | 0.898            | 0.898 | 0.898                 | 0.638                            |

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| Location of apartment and land area    | 0.945 | 0.945 | 0.945 | 0.775 |
| Qualification                          | 0.872 | 0.873 | 0.872 | 0.695 |
| Quality real estate valuation services | 0.957 | 0.971 | 0.962 | 0.594 |
| Reputation and quality of the investor | 0.923 | 0.939 | 0.925 | 0.807 |
| Response                               | 0.887 | 0.887 | 0.887 | 0.662 |
| Spirituality                           | 0.932 | 0.935 | 0.932 | 0.775 |
| Sympathy                               | 0.872 | 0.873 | 0.872 | 0.694 |
| Trust                                  | 0.910 | 0.911 | 0.910 | 0.629 |

The results in Table 1 show that the combined reliability coefficients are all greater than 0.8; Composite reliability coefficients are also greater than 0.8; Average Variance Extracted (AVE) is also greater than 0.5 according to [33, 36, 44, 45] is satisfactory to carry out further tests.

Table 2

## Discriminant Validity - Fornell-Larcker Criterion

|  | Behavior of buying high-end apartments | Consumer loan intention | Design and functionality | Guarantee | Location of apartment and land area | Qualification | Quality real estate valuation services | Reputation and quality of the investor | Response | Spirituality | Sympathy | Trust |
|--|--|-------------------------|--------------------------|-----------|-------------------------------------|---------------|--|--|----------|--------------|----------|-------|
| Behavior of buying high-end apartments | 0.803                                  |                         |                          |           |                                     |               |  |  |          |              |          |       |
| Consumer loan intention                | 0.538                                  | 0.835                   |                          |           |                                     |               |  |  |          |              |          |       |
| Design and functionality               | 0.339                                  | 0.222                   | 0.797                    |           |                                     |               |  |  |          |              |          |       |
| Guarantee                              | 0.368                                  | 0.470                   | 0.240                    | 0.799     |                                     |               |  |  |          |              |          |       |
| Location of apartment and land area    | 0.381                                  | 0.237                   | 0.360                    | 0.193     | 0.880                               |               |  |  |          |              |          |       |
| Qualification                          | 0.313                                  | 0.496                   | 0.151                    | 0.382     | 0.155                               | 0.834         |  |  |          |              |          |       |
| Quality real estate valuation services | 0.332                                  | 0.468                   | 0.199                    | 0.041     | 0.167                               | 0.009         | 0.771                                  |  |          |              |          |       |
| Reputation and quality of the investor | 0.418                                  | 0.487                   | 0.248                    | 0.526     | 0.284                               | 0.451         | 0.477                                  | 0.898                                  |          |              |          |       |
| Response                               | 0.312                                  | 0.454                   | 0.177                    | 0.009     | 0.146                               | 0.009         | 0.031                                  | 0.467                                  | 0.813    |              |          |       |
| Spirituality                           | 0.365                                  | 0.379                   | 0.236                    | 0.655     | 0.273                               | 0.508         | 0.583                                  | 0.596                                  | 0.561    | 0.880        |          |       |
| Sympathy                               | 0.315                                  | 0.431                   | 0.221                    | 0.022     | 0.169                               | 0.137         | 0.014                                  | 0.465                                  | 0.271    | 0.595        | 0.833    |       |
| Trust                                  | 0.327                                  | 0.474                   | 0.197                    | 0.049     | 0.171                               | 0.293         | 0.040                                  | 0.462                                  | 0.025    | 0.598        | 0.036    | 0.793 |

The results in Table 2 show that all values on the diagonal are larger than the values outside the diagonal, proving that the variables in the research model have discriminant validity. Satisfied as suggested by [33, 36, 44, 45].

Next, we test the values of the measurement model such as the coefficient R - Square; f – Square and model fit. The specific results are as follows:

**Model\_Fit**

*Table 3*

Fit Summary

|            | Saturated Model | Estimated Model |
|------------|-----------------|-----------------|
| SRMR       | 0.049           | 0.056           |
| d_ ULS     | 0.829           | 0.898           |
| d_ G       | 0.829           | 0.898           |
| Chi-Square | 855.126         | 856.623         |
| NFI        | 0.879           | 0.883           |

Standardized root mean square residual (SRMR) < 0.082 (if the exploratory study type can accept <0.12) [44]. Thus, the values in table 3 are satisfactory, d\_ ULS<95%; Coefficient d\_ G1<95%; Coefficient d\_ G2<95%. Thus, the research data is consistent with the research model.

*Table 4*

R Square

|  | R Square | R Square Adjusted |
|--|----------|-------------------|
| Behavior of buying high-end apartments | 0.397    | 0.387             |
| Consumer loan intention                | 0.219    | 0.217             |
| Quality real estate valuation services | 0.550    | 0.551             |

According to [45] the acceptable level of  $R^2$  depends on the research context. However, the rating is still given for reference respectively: strong (0.67), medium (0.33) and weak (0.19). It proves that the variables in the model explain the variation of the research variables at the average level and satisfy the conditions to perform the evaluation test of the research hypotheses.

Table 5

f Square

|  | Behavior of buying high-end apartments | Consumer loan intention | Design and functionality | Guarantee | Location of apartment and land area | Qualification | Quality real estate valuation services | Reputation and quality of the investor | Response | Spirituality | Sympathy | Trust |
|--|--|-------------------------|--------------------------|-----------|-------------------------------------|---------------|--|--|----------|--------------|----------|-------|
| Behavior of buying high-end apartments |  |                         |                          |           |                                     |               |  |  |          |              |          |       |
| Consumer loan intention                | 0.168                                  |                         |                          |           |                                     |               |  |  |          |              |          |       |
| Design and functionality               | 0.179                                  |                         |                          |           |                                     |               |  |  |          |              |          |       |
| Guarantee                              |  |                         |                          |           |                                     |               | 0.195                                  |  |          |              |          |       |
| Location of apartment and land area    | 0.211                                  |                         |                          |           |                                     |               |  |  |          |              |          |       |
| Qualification                          |  |                         |                          |           |                                     |               | 0.185                                  |  |          |              |          |       |
| Quality real estate valuation services | 0.220                                  | 0.280                   |                          |           |                                     |               |  |  |          |              |          |       |
| Reputation and quality of the investor | 0.231                                  |                         |                          |           |                                     |               |  |  |          |              |          |       |
| Response                               |  |                         |                          |           |                                     |               |  | 0.211                                  |          |              |          |       |
| Spirituality                           | 0.192                                  |                         |                          |           |                                     |               |  |  |          |              |          |       |
| Sympathy                               |  |                         |                          |           |                                     |               |  |  | 0.220    |              |          |       |
| Trust                                  |  |                         |                          |           |                                     |               |  |  |          |              |          | 0.231 |

According to Henseler et al (2015) to consider the impact of exogenous variables on endogenous variables, it is necessary to evaluate the influence coefficient  $f^2$ . When  $f^2$  is at 0.02 levels; 0.15 and 0.35, it can be concluded that the impact level is weak, fair and strong, respectively. Thus, the variables in the research model all have corresponding effects on the average and satisfy the conditions to perform the next tests. After evaluating the measurement models are satisfied, we proceed to evaluate the structural model.

Test the research hypotheses. The results of testing the research hypotheses with the path coefficients are as follows:

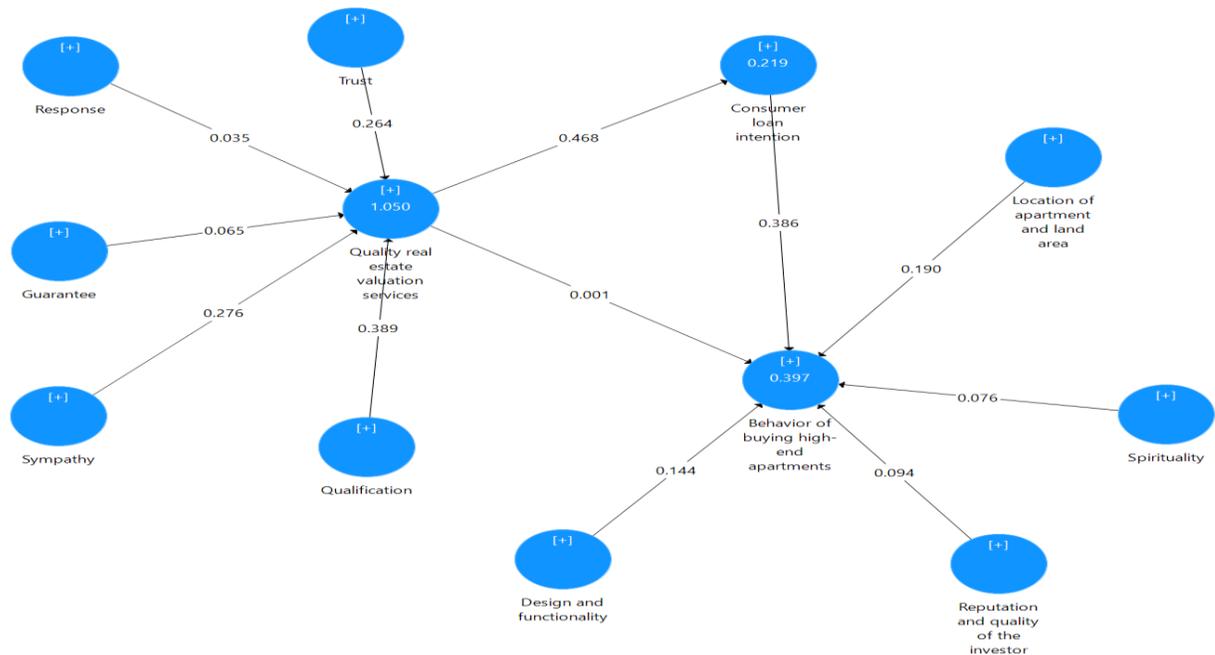


Fig. 2. Path coefficient result

Next, the results of testing the research hypotheses by Bootstrapping technique are as follows:

From the results in Figure 2, it can be seen that:

Trust has a positive impact on the quality of mortgage real estate valuation services with an impact coefficient of 0.202 at 1% significance level ( $P\_value = 0.000$ ).

The feedback has a positive impact on the quality of mortgage real estate valuation services with an impact factor of 0.234 at 1% significance level ( $P\_value = 0.000$ ).

Assurance has a positive impact on the quality of mortgage real estate valuation services with an impact coefficient of 0.288 at the 1% significance level ( $P\_value = 0.000$ ).

Sympathy has a positive impact on the quality of mortgage real estate valuation services with an impact coefficient of 0.146 at 1% significance level ( $P\_value = 0.000$ ).

The qualification of the appraiser has a positive impact on the quality of mortgage real estate valuation services with an impact coefficient of 0. at the 1% significance level ( $P\_value = 0.000$ ).

Next, we evaluate the hypotheses related to people's buying behavior of high-end apartments through personal credit activities at Vietnamese commercial banks.

The location of the apartment and the location of the land have a positive impact on people's buying behavior of luxury apartments with an impact level of 0.165 at the 1% significance level ( $P\_value = 0.000$ ).

Spirituality has a positive impact on people's buying behavior of luxury apartments with an impact level of 0.194 at 1% significance level ( $P\_value = 0.003$ ).

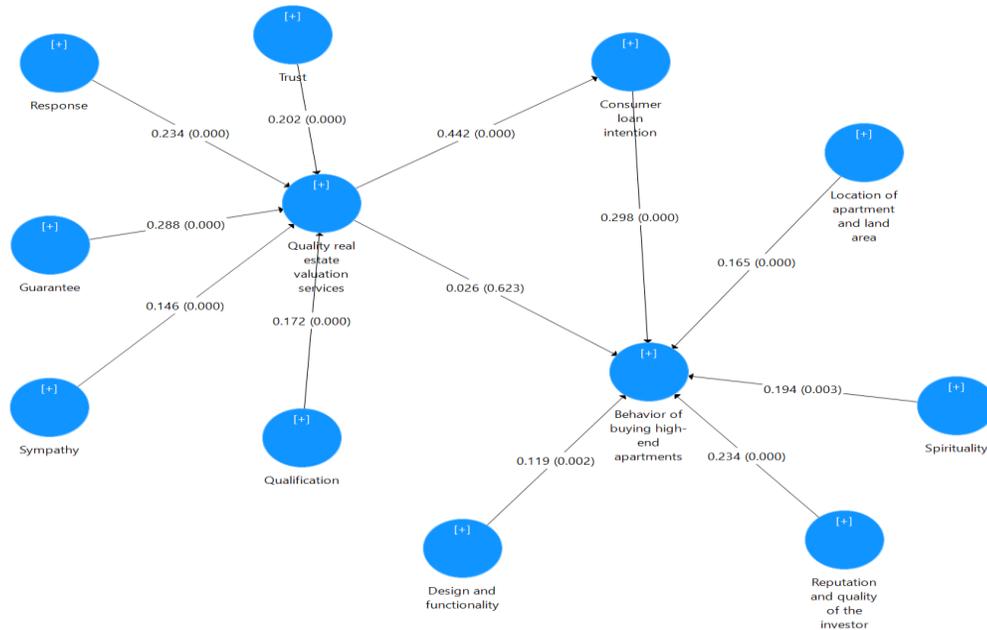


Fig. 3. Results of testing hypotheses in the overall structural model

Reputation and quality of investors have a positive impact on people's buying behavior of luxury apartments with an impact level of 0.234 at 1% significance level (P\_value = 0.0000).

Design and functionality have a positive impact on people's buying behavior of luxury apartments with an impact level of 0.119 at the 1% significance level (P\_value = 0.002).

In addition, the factor of intention to take a consumer loan to buy a house also has a positive impact on people's buying behavior of luxury apartments with a strong impact of 0.298 at 1% significance level (P\_value = 0.0000).

To examine in-depth the relationship between the quality of mortgage real estate valuation, consumer loan intention and people's buying behavior of luxury apartments, the study conducted a separate assessment with the following results:

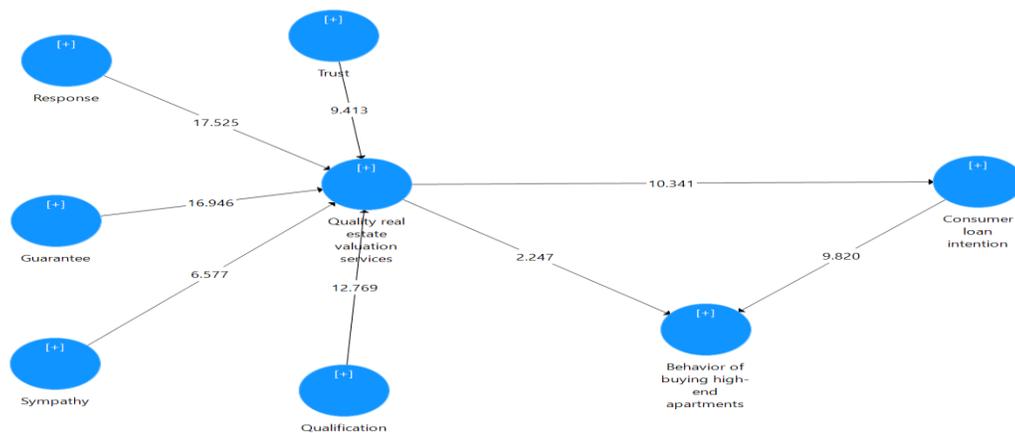
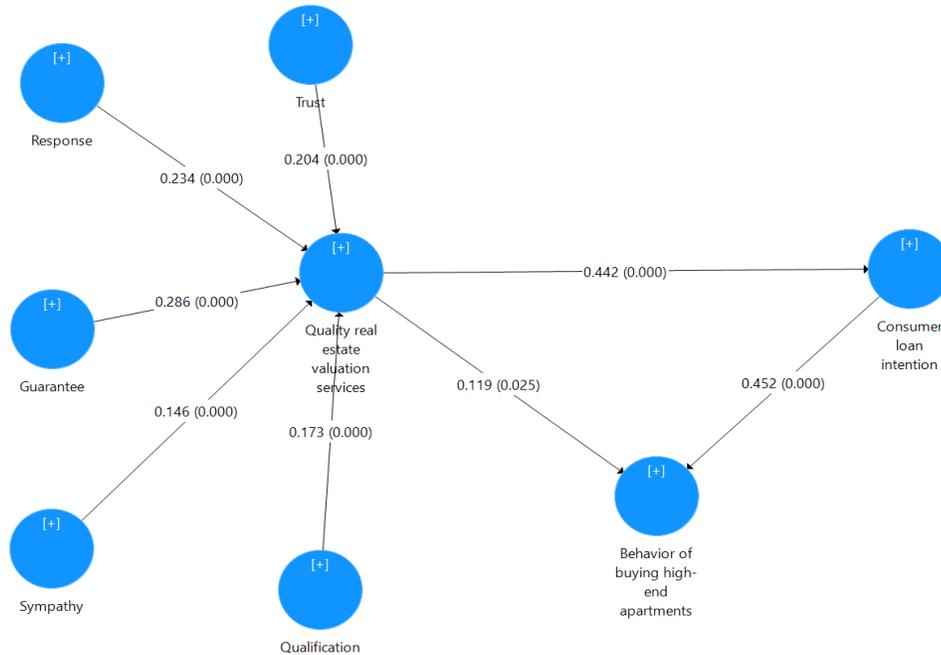


Fig. 4. The coefficient of influence besides other factors on buying behavior of luxury apartments

The results of the relationship test are as follows:



**Fig.5. Results of testing the role of mortgage real estate valuation service quality, consumer loan intention to people's buying behavior of luxury apartments**

The results in Figure 5 show that, without considering the factors related to the external environment, the investor's objectivity, the land plot, etc., the factors related to the supporting services of commercial banks are not considered. As a mortgage real estate valuation service, consumer loan intention has a strong impact on buying behavior of luxury apartments at the impact level of 0.452 at 1% significance level ( $P\_value = 0.0000$ ).

In addition, in the overall SEM model in Figure 3, the relationship between the quality of mortgage real estate valuation services and the buying behavior of luxury apartments is no longer statistically significant, which means that the intention to borrow House-buying consumers play a full mediating role in the relationship between the quality of mortgage real estate valuation services and the buying behavior of high-end apartments of people in three big cities of Vietnam, Hanoi, Da Nang and Ho Chi Minh City.

Finally, we test the regulatory role of interest rates with the following results:

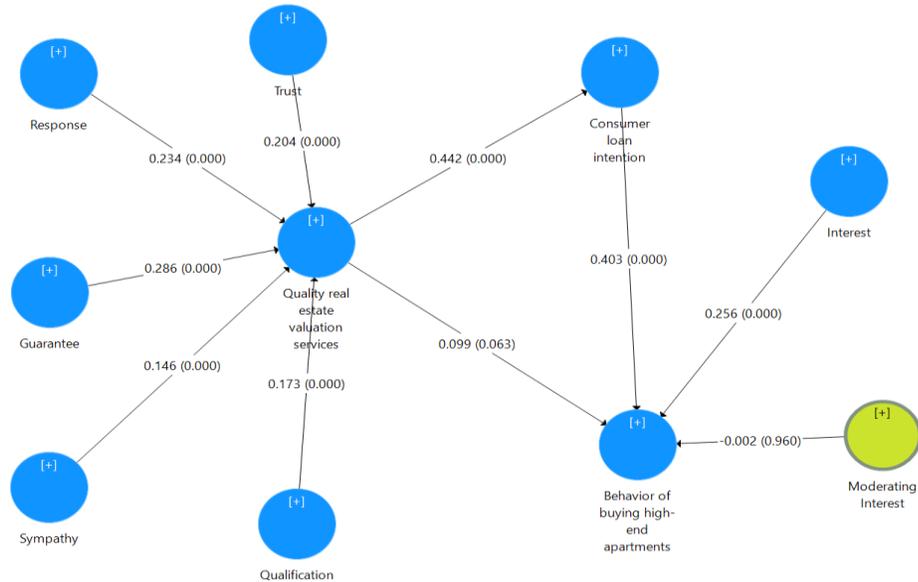


Fig.6. Regulatory results without considering other factors affecting buying behavior of luxury apartments

In this result, interest rates have a strong statistically significant impact on people's buying behavior of luxury apartments with an impact level of 0.256 at 1% significance level (P\_value = 0.0000). However, the regulatory role of interest rates in the relationship between consumer borrowing intentions and buying behavior of luxury apartments is not enough to confirm. That is, this role is not statistically significant.

In the overall SEM model, when other factors affecting buying behavior of luxury apartments are considered, the results are as follows:

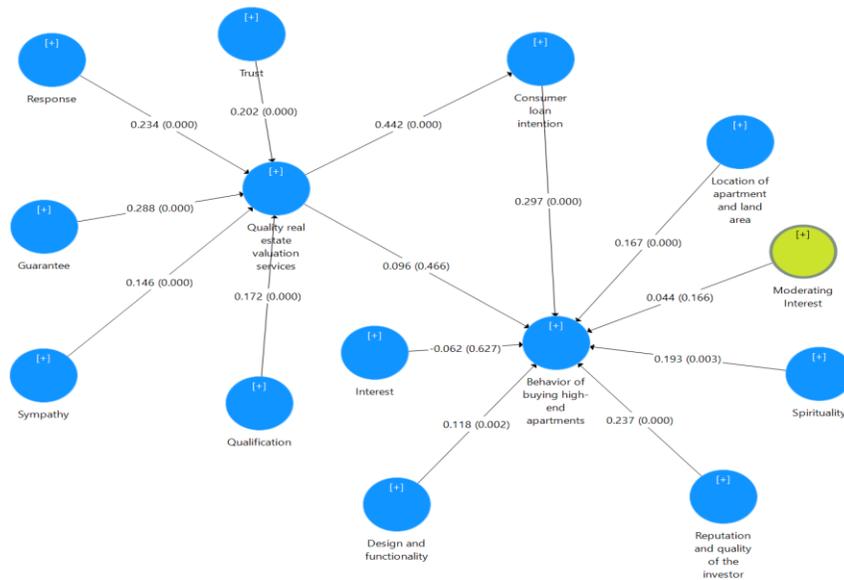


Fig.7. Moderating role of Interest in SEM Total

Results in the overall SEM model, the role of interest rates no longer has a statistically significant impact on buying behavior of high-class apartments, therefore, interest rates can no longer have a moderating role in the relationship between intention to buy high-class apartments. Consumer loan decision and high-class apartment purchase behavior of people through personal credit activities at Vietnamese commercial banks.

The summary of the research hypotheses is as follows:

Table 6

Path Coefficients - Mean, STDEV, T-Values, P-Values

|  | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics ( O/STDEV ) | P Values |
|--|---------------------|-----------------|----------------------------|--------------------------|----------|
| Consumer loan intention -> Behavior of buying high-end apartments                | 0.298               | 0.301           | 0.046                      | 6.498                    | 0.000    |
| Design and functionality -> Behavior of buying high-end apartments               | 0.119               | 0.121           | 0.039                      | 3.085                    | 0.002    |
| Guarantee -> Quality real estate valuation services                              | 0.288               | 0.290           | 0.017                      | 17.199                   | 0.000    |
| Location of apartment and land area -> Behavior of buying high-end apartments    | 0.165               | 0.166           | 0.041                      | 4.052                    | 0.000    |
| Qualification -> Quality real estate valuation services                          | 0.172               | 0.173           | 0.013                      | 13.236                   | 0.000    |
| Quality real estate valuation services -> Behavior of buying high-end apartments | 0.026               | 0.028           | 0.053                      | 0.491                    | 0.623    |
| Quality real estate valuation services -> Consumer loan intention                | 0.442               | 0.443           | 0.042                      | 10.460                   | 0.000    |
| Reputation and quality of the investor -> Behavior of buying high-end apartments | 0.234               | 0.231           | 0.059                      | 3.979                    | 0.000    |
| Response -> Quality real estate valuation services                               | 0.234               | 0.234           | 0.013                      | 17.625                   | 0.000    |
| Spirituality -> Behavior of buying high-end apartments                           | 0.194               | 0.189           | 0.066                      | 2.953                    | 0.003    |
| Sympathy -> Quality real estate valuation services                               | 0.146               | 0.148           | 0.023                      | 6.442                    | 0.000    |
| Trust -> Quality real estate valuation services                                  | 0.202               | 0.197           | 0.021                      | 9.501                    | 0.000    |

## 5. Conclusion

The survey results learn about the quality of mortgage real estate valuation services, the buying behavior of luxury apartments and the factors affecting the quality of mortgage real estate valuation services and the buying behavior. People's high-class apartment buildings have the following main findings. More and more people want to own apartments and look to buy luxury apartments instead of buying houses. The demand and trend of buying apartments is gradually developing. Due to rapid urbanization, land scarcity and high land prices, high risk of buying land, complicated red book procedures, the tendency to separate households into small-sized households. Due to its small size and high price of construction materials, some significant changes occurred in the real estate industry that changed urban residents' attitudes towards housing. Especially, young civil servants showed their preference to buy existing apartments rather than buying land to build their own houses. That's why people turn to buy apartments from real estate companies that are investing in apartment buildings. To assess the impact of these factors on people's buying behavior of high-end apartments, we focused on assessing the factors that can affect people's buying behavior of high-end apartments. In which, the role of the quality of mortgage real estate valuation, consumer loan intention and other factors related to the apartment complex such as: Design, function; Location of the apartment and the land; Reputation and quality of the investor; Spirituality has a statistically significant positive impact on people's buying behavior of luxury apartments. At the same time, consumer loan intention plays a full mediating role in the relationship between the quality of mortgage real estate valuation services and residents' buying behavior of luxury apartments.

From the above results, we propose some recommendations as follows:

Recommendations to the State Bank.

The State Bank needs to create a mechanism to encourage banks to conduct retail credit activities, including home loans. In addition, there should be measures to help commercial banks increase their lending capital, especially medium and long-term capital, such as measures on required reserves or regulations on the use of short-term capital for long-term loans.

The State Bank needs to have a policy to deal with overdue debts and bad debts of businesses due to objective reasons such as floods, natural disasters, etc. It needs to create a source for banks to offset frozen debts and write off debts. In addition, debt trading companies can be established to handle debts, exploit and manage outstanding security assets.

The State Bank requires commercial banks to closely monitor and monitor real estate lending activities, supply and demand movements and market prices. real estate to take measures to handle, recover loans on time and control the growth rate of real estate loans.

Review the lending ratio of the banking system for the real estate market to the total outstanding loans of the system, and review the lending conditions of the banks for the real estate market. If there is a phenomenon of subprime lending, positive corrective measures should be taken. Consider the ratio of outstanding loans of the banking system to enterprises of the same origin doing real estate business, to the total outstanding loans of the real estate market.

The State Bank firmly grasps information, strictly controls the total means of payment, credit balance in the entire economy, the lending for real estate business, and securities trading of commercial banks and money trading organizations. other currency. Flexible adjustment of monetary policy, ensuring a reasonable growth rate of credit balance, liquidity for credit institutions and controlling inflation. Strengthen supervision of credit institutions, supplement supervision tools according to market mechanisms and international practices to proactively warn and better handle fluctuations in the credit and currency markets.

It is advisable to establish information channels on the real estate market, which provide information on real estate, update information on relevant policies and legal documents to create favorable conditions for customers to find information about real estate. understand and improve understanding of the real estate market, and at the same time create a basis for the appraisal of business projects, real estate valuation, and help banks limit risks.

Thus, it can be seen that home lending is a new business field and is considered to be strongly developed in Vietnam in the future, although it is not very developed at present. The development of this type of loan in the future will be an inevitable trend due to the practical benefits it brings, such as creating conditions for people to satisfy their consumption needs when they cannot afford it. pay. This type helps to diversify banking products and services, increase income and spread risks for commercial banks...

With the goal of developing into a commercial bank in Vietnam and the region, the bank has built itself a strict lending process and is considered a promising bank in home loan activities. The home loan activity has not been implemented at the bank for a long time, but it has obtained very positive results, contributing significantly to the development of the bank. However, comprehensively, there are still some limitations and problems that need to be seriously considered and studied to be able to come up with more complete solutions on home loan activities.

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