Estimating the Impacts of Key Determinants on Consumer Apartment Purchase Decisions in Ho Chi Minh City - Vietnam

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Abstract. This study aims to estimate the factors influencing customers' decisions to purchase apartments in Ho Chi Minh City. Employing both qualitative (interview experts and survey customers) and quantitative approaches (Ordinary Least Squares regression via SPSS20), the study concludes that Attitude, Perceived Quality, Financial Capability, and Government Regulations exhibit a statistically significant and favorable impact on the inclination of customers to make apartment purchases within Ho Chi Minh City. In essence, this study furnishes valuable insights into the determinants steering consumers' decisions to invest in apartments within the city. The findings contribute to the existing literature and offer practical implications for the government and real estate developers, ultimately promoting a thriving housing market in the city.

Keywords: apartment, purchase decision, customer, Five-stage model.

1. Introduction

As the population growth rate escalates globally, governments consistently grapple with the pressing concern of housing for their citizens. As per the World Cities Report (2022), it is projected that by 2050, over 68 percent of the world's population will be concentrated in urban areas, marking a significant rise from the current percentage, which already exceeds 50%. Consequently, the primary focus of governments is to proactively prepare for this surge and ensure the provision of essential infrastructure, amenities, and affordable housing that cater to the needs of the expanding urban population.

Vietnam, a developing nation, is undergoing a marked rise in urbanization. Consequently, major cities are witnessing a surge in population, thereby placing a significant responsibility on the government to address housing concerns. The adoption of apartment living has become an inexorable trend for residents, particularly in Ho Chi Minh City, Vietnam's most populous urban center, characterized by high population density but limited available land. The escalating demand for apartments has spurred real estate developers to initiate various apartment projects. As of the fourth quarter of 2019, the total inventory of completed apartments in Ho Chi Minh City stood at 201,707 units, encompassing diverse areas and segments, which equates to approximately 17 apartments per 1,000 individuals. Significantly, the majority of the housing supply in Ho Chi Minh City (90%) is comprised of apartments, a fact highlighted in a study by Pham (2020).

In the framework of Asian cultural norms, owning a home is regarded as a fundamental requirement for attaining stability. Obtaining a place of residence remains a significant aspiration for adults in Asian communities, symbolizing a crucial milestone in building a secure life. Various factors contribute to the desire to invest in real estate, with purchasing an apartment often standing out as the most significant and consequential financial decision in an individual's lifetime (Anis et al., 2014). Throughout this complex decision-making journey, potential buyers weigh numerous considerations. These encompass aspects such as affordability (Sonia, 2020), attitude (Shastry, 2021), construction quality (Chia et al., 2016; Kumar & Khandelwal, 2018), relatives and friends' advice (Murwatiningsih & Yulianto, 2017), people's perception of their control ability (Islam et al., 2022), and government policies (Islam et al., 2022).

However, some studies just show the determinants impact directly on the intention to buy a house/ accomodation (Al-Nahdi, 2015; Arslan & Zaman, 2015; Chia et al., 2016; Hoang et al., 2020; Le-Hoang et al., 2020) while other confirm factors impact on the decision to buy a house/ accomodation directly (Kumar & Khandelwal, 2018; Mariadas et al., 2019; Q. Nguyen, 2019; T. L. Nguyen & Nguyen, 2020, 2020; Vân Trinh & Hà, 2012). In the case of apartment purchases, intention behavior will occur prior to purchasing decision behavior (Numraktrakul et al., 2012) and has a favorable influence on customer decision behaviour (Arora & Sahney, 2018). Purchasing a house is always a complex and important decision that is affected by many factors, thus, to get a competitive advantage, real estate businesses must understand consumer behavior while acquiring. In fact, the housing supply from building commercial project just satisfy 45% of the citizen housing demand in Ho Chi Minh city from 2020 to 2025 (Decision 4834/QĐ-UBND 2020). As a result, it becomes crucial for the apartment sector to delve into the elements influencing customers' choices when it comes to making apartment purchase decisions within real estate markets, especially considering the projected demand from citizens between 2025 and 2030. Furthermore, this study employs the Five-stage model of the consumer buying process to delve into the factors that drive consumers' decisions when considering apartment purchases in Ho Chi Minh City. Through the utilization of a systematically designed survey questionnaire to collect data, coupled with the application of Ordinary Least Squares (OLS) for model validation, this study endeavors to fulfill its primary aim: estimating the influences that impact consumers' decisions when it comes to purchasing apartments within Ho Chi Minh City. To achieve this goal, the research seeks to answer the following inquiry: "To what degree do these factors contribute to shaping consumers' decisions regarding apartment purchases in Ho Chi Minh City?".

2. Literature Review and Hypothesis Development

2.1. Literature review

Consumer behavior examines how individuals make choices about acquiring, desiring, requiring, or engaging with a product, service, or business (Schofield, 2018). The purchasing behavior of consumers encompasses the steps through which people seek, choose, buy, utilize, and discard products and services to fulfill their needs and desires.

Making a purchase decision entail recognizing requirements, generating alternatives, and choosing particular brands or products (Salem, 2018). Several factors affect it before purchasing, making it complex to understand customer behaviors (Hanaysha, 2018). Particularly, Gunawan et al. (2019) explain that customers will have a series of questions to answer in the purchase decision process. Hanaysha (2018) states, "The consumer decision-making process can be described as the phases consumers go through in making a final purchase decision". The consumer decision-making process can be illustrated as five steps in the traditional model, which involves five steps consumers move through when buying a product or service (Stankevich, 2017).

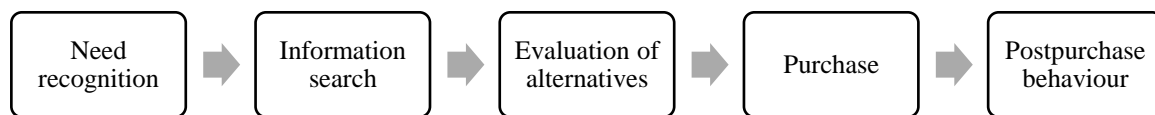| Need recognition | → | Information search | → | Evaluation of alternatives | → | Purchase | → | Postpurchase behaviour |

Fig.1: Five-stage model of the consumer buying process

Source: (Dewey, 2022)

Kotler & Keller (2021) have described this model in detail and explain additional stage of the model - disposal stage. The buyer's black box encompasses both buyer characteristics and decision processes (Oke et al., 2016). According to (Lamb et al., 2012), buyer characteristics include personal, psychological, cultural, and social factors, all of which significantly influence the buying decision process. This process typically involves stages such as need recognition, information search, evaluation of alternatives, purchase decision, and post-purchase considerations. (Cornelis, 2010) highlighted that buyers seek internal and external information through various channels, including personal, commercial, public sources, and personal experiences.

Based on the studies by Kotler & Amstrong (2018); Suroto et al. (2013), purchase decision of consumers is affected by psychological factors, such as perception, learning, attitude and beliefs, motivation. Besides, personal factors, and social factors are considered impact on purchase decision (Nakalinda, 2018; Šostar & Ristanović, 2023).

Reviewing previous studies on the research topic, the authors identified several issues. Firstly, previous studies did not categorize the decision to buy this apartment for residential or investment purposes. Therefore, the authors' research focuses on the decision to buy an apartment for living purposes. Second, previous studies used Binary Logistic regression models and hierarchical logit regression models in Ho Chi Minh City, while the authors use an ordinary least squares (OLS) method in this paper. Finally, the study contributes to each subject when developing relevant policy implications.

To sum up, this research integrates financial aspects, perceived physical attributes, and government policies or incentives to examine the behavioral decision of apartment purchase. These three factors bear relevance to economic advantages and can be perceived as forms of savings. Consequently, this study employs principles from behavioral economics to elucidate our model. Accordingly, the objective of this study is to explore the factors that shape the behavioral decision to acquire an apartment. The qualitative methods (interviews and surveys) and quantitative methods (ordinary least squares method).

2.2. Hypothesis development

As mentioned above, five-stage of the consumer decision process is used as theoretical framework to identify the factors affecting purchase decision apartment of personal customers in Vietnam. The study expanded the behavior models with factors involving attitude, subjective norms, perceived behavioral control, perceived quality, financial capability, and government policies to test the impacts of these factors on the intentions that lead to purchase decisions.

Attitude refers to the extent to which a person has favorable or unfavorable judgments regarding an object, person, or event. An attitude is a enduring overall assessment of something, based on one's knowledge, encompassing preferences or aversions, and the intensity of associated sentiments (Ok Kim & Jin, 2001). Attitude is also considered to be a property of an individual's personality (Yusmita et al., 2012). Some previous studies demonstrate that attitude positively affect the decision of a specific action (Giampietri et al., 2018; Rameez & Kulathunga, 2019; Redda, 2019). Furtheremore, Adis & Kim, (2013); Jung & Seock, (2016) explore the positive effect of customers attitude on decision to buy products or services. The study by Shastry (2021) also supports the direct relationship between attitude and purchase decision. Therefore, the hypothesis is proposed:

H1: Attitude positively affects decision to buy the apartment of individual customers in Ho Chi Minh City.

Subjective norms are defined as "the standard belief of a personal belief that is influenced by others like family members who think whether an individual should perform a particular behavior" (Rivis & Sheeran, 2003). Besdies, subjective norms show a customer's decision is affected by external factors, in which beliefs are significant to build a customer's decision. In the studies of (Fishbein & Ajzen, 2011; Olsen, 2004), subjective norms can be understood as a person's perception of the pressure or expectation from the society (subjective norms) or from specific groups or individuals (normative beliefs). According to Ajzen (2002), the decision of the action is affected by Subjective Norms. The study of Long & Thang, (2020) pointed out when customers have intentions to buy apartments, they want to take some advice or comments from their families, relatives, and friends. The studies by (Al-Nahdi, 2015; Murwatiningsih & Yulianto, 2017; Razak et al., 2013) proved that the decision to purchase real estate is affected by subjective norms positively. Based on these references, the hypothesis is suggested as below:

H2: Subjective Norms positively affects decision to buy the apartment of individual customers in Ho Chi Minh City.

Perceived behavioral control denotes "people's perception of the degree to which they are capable of, or have control over, performing a given behavior" (Ajzen, 1991; Fishbein & Ajzen, 2011). Besides, it is also characterized as the extent to which an individual manages internal and external elements that enable or hinder the execution of the behavior (Han & Kim, 2010). According to the model of TPB (Ajzen, 1985), perceived behavioral control can be both direct and indirect factors influencing behaviors. Comparing TRA and TPB, Madden et al., (1992) explained when a person has beliefs about control over resources and opportunities to do something, he or she has stronger perceived behavioral control. In contrast, when people have little perceived behavioral control, they will be unlikely to perform an action regardless of good attitude and subjective norms towards that action (Madden et al., 1992). In the realm of real estate, numerous research endeavors indicate a favorable correlation between perceived behavioral control and the decision to purchase real estate (Islam et al., 2022; Judge et al., 2019; Khoo et al., 2020). Based on the supported empirical studies, the proposed hypothesis is as follows.

H3: Perceived behavioral control positively affects decision to buy the apartment of individual customers in Ho Chi Minh City.

Quality is considered as a factor creating competitive advantages for a firm; hence it is a critical aspect of doing business (Kusumah, 2015). A product or service is considered 'quality' if it can satisfy

customer needs or expectations. Bomrez & Rahman, (2018) believe that when the customer's satisfaction is high, they will be loyal to that product or service. According to (Zeithaml, 2000) perceived quality is a customer's perception or assessment of the overall product superiority. In other words, it is how good or bad customers think about a product or service. For apartment purchasing behaviours, the aspects of quality, including parking, environment, water supply & drainage systems, interior and landscape design, surrounding amenities, and construction quality, are considered fully by customers (Chia et al., 2016; Kumar & Khandelwal, 2018). Many studies have been conducted to assess the impact of quality on buying behavior in general and apartment purchasing behavior in particular. The results emphasize quality is one of the crucial factors influencing customer's buying decision (Khoo et al., 2020; Rachmawati et al., 2019) as well as the customer's buying decision (Rachmawati et al., 2019). The studies of Chia et al., (2016) ; Islam et al., (2022); Rachmawati et al., (2019); Sonia, (2020) show that project quality, construction quality, and environment have positive effects on customer's apartment buying decision. In the paper, the hypothesis is suggested as below:

H4: Perceived quality positively affects decision to buy the apartment of individual customers in Ho Chi Minh City.

Muna (2023) defines financial capability as a person's ability to deal with costs, financial issues which influence the decision to perform an action. Moreover, (Muna, 2023) explores the positive effect of financial capability on purchase decision. Some research demonstrate that financial capacity has positive and significant effects on decision of purchasing apartments, even in cases of high prices (Chia et al., 2016; Khoo et al., 2020; Rachmawati et al., 2019; Sonia, 2020).

H5: Financial capability positively affects decision to buy the apartment of individual customers in Ho Chi Minh City

Many studies have been carried out to analyze the effect of government operating and management policies on customers' decision to buy apartments. The results show that financial incentives, an 'easy to loan' policy, tax benefits, and government allowances can attract more potential buyers (Ghodrati et al., 2012). The studies of Glaeser et al., (2017); Islam et al., (2022); Matisoff et al., (2016) also provide the evidence to prove the positively significant relationship between government policies and apartment buying behavior.

H6: Government policies positively affects decision to buy the apartment of individual customers in Ho Chi Minh City.

3. Methodology

3.1. Sample

Data for this research was gathered using questionnaires employing a five-point Likert scale. In order to uphold the confidentiality and privacy of participants, necessary permissions were obtained from relevant private individuals interested in apartment purchases within Ho Chi Minh City. The respondents were selected through a random sampling approach.

The sampling approach adheres to the stipulated requirement for executing the exploratory factor analysis (Hair Jr & Anderson, 1995). In this study, there are a total of 17 observed variables, necessitating a minimum of 85 samples. The data collection phase spanned from November 2022 to April 2023, during which the author distributed questionnaires directly to 350 customers via both online and offline channels (however, the number of collected questionnaires totaled 319, constituting 91.14%). Ultimately, 307 questionnaires were deemed valid for analysis.

On the basis of the cross-sectional design, the questionnaires were distributed among the responders who owned or intended to buy the apartment from the following house projects: Vinhomes grand park, De La Sol, Mizuki Park, HaDo Centrosa Garden, Topaz city.
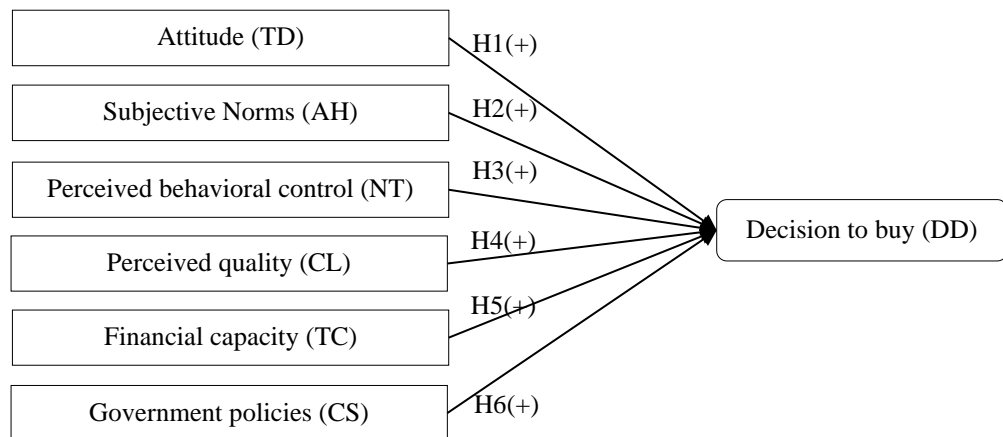
3.2. Research model

Fig.2: Research model

3.3. Research methods

The paper employs qualitative and quantitative methods to accomplish the objective mentioned above. The process is outlined as follows:

Step One: Initial research adopts qualitative techniques to identify, adjust, and enhance scales, resulting in developing a suitable questionnaire for formal research. This phase involves conducting in-depth, technical, face-to-face interviews and discussions with individuals under consideration. These individuals include customers who currently own or intend to purchase apartments and experts and professionals in relevant fields. The primary aim is to explore customer expectations from property developers. Additionally, the factors influencing customers' decisions to acquire residential apartments are examined from the points of views of property managers and real estate industry experts.

Step Two: The formal research applies a quantitative approach (Ordinary Least Squares regression) to assess the reliability of the scale and theoretical model. This phase occurs after the recalibration of the qualitative research questionnaire with simplified, comprehensive language and the inclusion of supplementary information. Variables are added or removed as necessary. The questionnaires are distributed to customers who have previously purchased or are currently in the process of purchasing apartments, as well as to relevant business organizations. The data collected are then processed utilizing SPSS software, version 20.

4. Research Results and Disussions

Table 1 presents the demographic data of the 307 respondents. The data in Table 2 reveals that out of the total, 168 respondents are male, constituting 54.72%, while the remaining proportion comprises females. The largest segment of customers falls within the age bracket of 45 - 60, accounting for 33.22% of the sample. Following that, the group aged 35 - 44 makes up 27.71%, and the cohort aged 25 - 34 represents 22.48%. The smallest portion is among individuals over 60 years old, comprising 5.54% of the respondents.

Table 1. Demographic information of respondents (Gender, Age, Education and Ca**reer)**

Criteria	Frequency	Percentage (%)
1. Gender		
Female	139	45.28
Male	168	54.72
Total	307	100.00
2. Age		

Criteria	Frequency	Percentage (%)
18 - 24	37	12.05
25 - 34	69	22.48
35 - 44	82	26.71
45 - 60	102	33.22
>60	17	5.54
Total	307	100.00
2. Education		
High school	55	17.92
Vocationaal school	84	27.36
Undergraduates & postgraduates	168	54.72
Total	307	100.00
3. Career		
Businessman	107	34.85
Government officers/government workers	146	47.56
Others	54	17.59
Total	307	100.00

Regarding education level: Based on Table 1, respondents with higher education (undergraduates & postgraduates) account for 168 customers, which is 54.72% of the total respondents. The group of customers with vocational degrees consists of 84 people, equivalent to 27.36% of the total respondents. Sample structure by career: Government workers are the most crowded group which accounts for 47,56% of the respondents.

Table 2. Summary of scales

No.	Construct	Number of Observations	Cronbach's Alpha	Evaluate
1	Attitude (TD)	5	0.92	Satisfied
2	Subjective Norms (AH)	4	0.96	Satisfied
3	Perceived behavioral control (NT)	3	0.96	Satisfied
4	Perceived quality (CL)	3	0.97	Satisfied
5	Financial capacity (TC)	5	0.94	Satisfied
6	Government policies (CS)	3	0.91	Satisfied
7	Decision to buy (QD)	4	0.88	Satisfied

Table 2 provides an overview of the factor scales. After subjecting the scales to Cronbach's alpha testing, the scales listed in Table 3 demonstrated strong reliability, as assessed by the total Cronbach's alpha coefficient and the correlation coefficient of the overall variable, along with the "Cronbach's Alpha if Item Deleted" coefficient, which meets the stipulated criteria (D. T. Nguyen, 2011). As a result, the scales exhibit consistent reliability. Furthermore, the validation process includes assessing the statistical validity through exploratory factor analysis (EFA).

The results of the Barlett test have Sig. value equals 0.00 which allows us to reject the hypothesis "The variables are not correlated with each other in the population" and the KMO index (Kaiser-Meyer-Olkin) = 0.86 > 0.5, so we can use the analytical method factor for data analysis. According to Total Variance Explained, 06 groups of factors are possible to explain 84.77% of the variability of the data, exceeding the acceptable threshold to form a new factor (50%).

Table 3. Regression results

Model		Standardized Coefficients	Sig.	Collinearity Statistics	
		Beta		Tolerance	VIF
1	(Constant)		0.00		
	TD	0.06	0.02	0.80	1.25
	AH	0.04	0.06	0.57	1.77
	NT	0.19	0.09	0.66	1.52
	CL	0.09	0.01	0.83	1.21
	TC	0.02	0.01	0.60	1.68
	CS	0.38	0.00	0.88	1.13
	Adjusted R Square = 0.785				
	Durbin-Watson = 1.895				
	Where: TD is Attitude; AH is Subjective Norms; NT is Perceived behavioral control; CL is Perceived quality; TC is financial capacity; CS is Government policies; QD is Decision to buy apartment in Ho Chi Minh City.				

Table 3 shows that model has 4 factors are statistically significant at 5% and are positively affect decisions to purchase apartments in Ho Chi Minh City, namely attitude, perceived quality, financial capacity, and government policies. Concretely, government policies affect consumers' purchasing apartment decision, with an estimated impact of 0.38; Perceived quality affects consumers' purchasing apartment intention, with an estimated impact of 0.09; Financial capacity affects consumers' purchasing apartment intention, with an estimated impact of 0.02; Attitude affects consumers' purchasing apartment intention, with an estimated impact of 0.06.
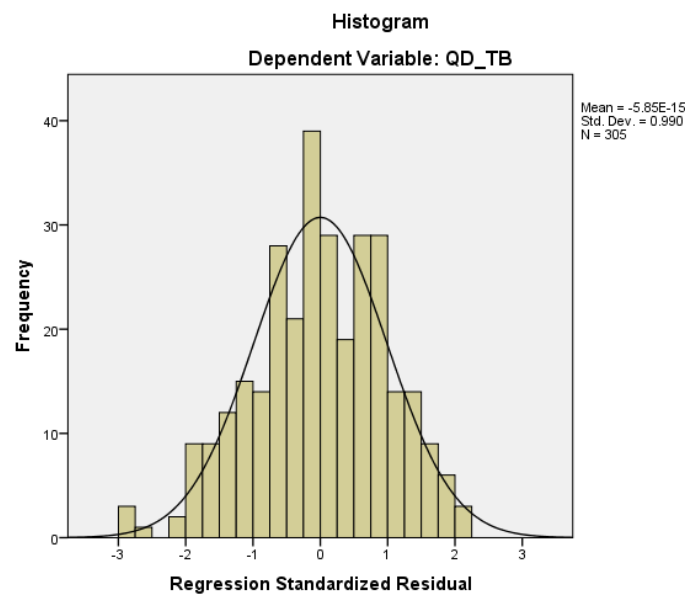

Fig.3: Histogram Normalized Residual Frequency

The Histogram normalized residual frequency plot in Figure 2 shows that the mean of the Mean observations is very small and close to zero and the standard deviation Std. Dev = 0.990 (approximately 1). Therefore, the assumption that the residuals have a normal distribution is accepted.
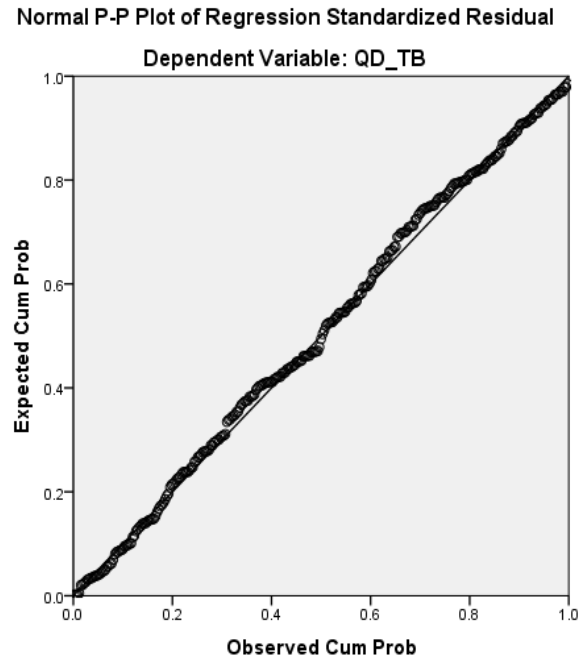
Fig.4: Histogram of the normal distribution of residuals on the expected line

Firgure 3 shows the residual normal distribution chart on the expected line. From the Normal P-P Plot Chart, the author finds that the observed and expected values are distributed close to the diagonal. This shows that the normalized residuals have a normal distribution. The P-P Plot test shows the values of the percentiles of the variable's distribution according to the percentiles of the normal distribution. The observation points of the residuals are concentrated quite close to the expected line, so the residual distribution has normal form and satisfies the requirement for the residuals to have a normal distribution. The results demonstrate that the research data of the model is relatively good.

5. Conclusions and Limitations

The paper estimates the determinants of consumers' purchasing apartment decisions in Ho Chi Minh City. Based on the Five-stage model of the consumer buying process, the theoretical model defines 4 factors that affect consumers' purchasing apartment decisions, such as attitude, perceived quality, financial capacity, and government policies.

This study offers empirical evidence that apartment quality attributes, area features, affordability factors and policy incentives represent key determinants steering consumers' apartment purchase decisions in Ho Chi Minh City. The findings imply that real estate developers should place greater emphasis on integrating desirable apartment and neighborhood qualities during project planning phases. Additionally, providing flexible pricing programs and working with banks on mortgage options may stimulate demand. Government bodies also play a pivotal role through urban housing development policies and purchase assistance programs. While the research is localized to Ho Chi Minh City, future studies could investigate the generalizability of findings to other urban regions. As apartment living continues to gain preference amidst rapid urbanization, ongoing understanding of the drivers underpinning consumers' investment decisions will be vital.

Although the outcomes derived from this research, there are certain constraints that warrant consideration for subsequent research endeavors. First, the survey was conducted within a limited timeframe. Second, the scope of the study was restricted solely to the inhabitants of Ho Chi Minh City. Lastly, the implications drawn from the study have implications primarily for real estate developers and governmental policies within the specific context of Ho Chi Minh City.

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