

## **Determinants Influencing Consumer Behaviour of Apartment Purchasing in Ho Chi Minh City and Policy Implications**

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**Abstract.** This study aims to estimate the factors influencing customers' decisions to purchase apartments in Ho Chi Minh City, considering the mediating role of apartment-buying intention. Drawing upon the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) models, the study identifies six variables—attitude, subjective norms, perceived behavioral control, perceived quality, financial capability, and governmental policies—that impact consumers' decisions to purchase apartments through the mediation of purchase intention. Using qualitative and quantitative methodologies, the study finds that, except for perceived behavioral control, the remaining five variables have a statistically significant positive impact on customers' decisions to buy apartments in Ho Chi Minh City. These findings have important implications for both the government and real estate developers. The government can utilize the study's insights to develop effective policies and regulations that support the housing market and encourage apartment purchases. Real estate developers, on the other hand, can leverage the identified factors to improve their marketing strategies, focusing on enhancing perceived quality, financial feasibility, and addressing customers' attitudes and subjective norms. By understanding these determinants, developers can better meet customer preferences and expectations, leading to increased apartment sales. Overall, this study provides valuable insights into the factors influencing customers' decisions to purchase apartments in Ho Chi Minh City, with apartment-buying intention playing a mediating role. 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, mediating factor, purchase decision, purchase intention, TRA, TPB.

## **1. Introduction**

By 2050, 68 percent of the world's population will live in urban areas, up from the current percentage of over 50% (World Cities Report, 2022). The government must act fast to prepare for growth and offer the infrastructure, services, and affordable housing that match the population's growth. Vietnam is a developing country with increasing urbanization. So, large cities are becoming more and more inhabited which creates the burden for government in dealing with the housing for them. Buying and living in apartments has become an inevitable trend for inhabitants, particularly in Ho Chi Minh City, Vietnam's largest metropolis with the highest population density but limited land resources. The growth in demand for apartments has motivated real estate developers to create apartment projects. The total supply of completed apartments in Ho Chi Minh City as of the fourth quarter of 2019 reached 201,707 units in all areas, respectively, segments, equivalent to the rate of 17 apartments/1,000 people. In which, apartments account for a major proportion of the total housing supply in Ho Chi Minh City (90%) (Pham, 2020).

In Asian culture, having a house or an accommodation is one of the prior requirements to have a stable life. Owning a house is always a significant goal for an Asian adult to settle his or her life. There are many reasons that encourage people to purchase houses. Purchasing an apartment, however, is often the most expensive and crucial purchase decision a person makes in their lifetime (Anis et al., 2014). Customers will consider a number of factors while making a purchase as a result of this intricate decision-making process, including 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/ accommodation (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/ accommodation directly ((Kumar & Khandelwal, 2018; Long & Thăng, 2020, 2020; Mariadas et al., 2019; Quyét, 2019; Vân Trinh & Hà, 2012). According to Dapas et al., (2019), purchase intention as the mediating role encourage the purchase decision. Therefore, before utilizing or acquiring a product, consumers engage in a mental activity known as purchase intention (Puspitasari et al., 2018). 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). Consequently, it is vital for the apartment industry to investigate the factors that affect customers' purchase decisions, focusing on the purchase intention, as the moderating role has to consider in real estate marketplaces to cover the citizen demand from 2025 to 2030. Besides, this paper applies TRA and TPB theories to explore determinants of purchase decisions that are mediated by the purchase intention of consumers for apartments in Ho Chi Minh City. By using a structured questionnaire-based survey to gather data and structural equation modeling (SEM) to verify the research model, this paper aims to address its main objective: estimate the factors affecting consumers' purchasing decision for the apartment in Ho Chi Minh City, under the role of mediator. To obtain the objective, the research question needs to be clarified is "To what extent, do the factors affect affecting consumers' purchase decision for the apartment in Ho Chi Minh City, which is mediated by purchase intention".

The paper contributes to the literature by showing which factors affect customers' decisions to purchase apartments in Ho Chi Minh City, under the mediating role of apartment-buying intention. Because there are few studies in the literature that investigate consumers' decisions through their

intentions in the context of a real estate market. Besides that, it contributes to the practice by assisting real estate firms in their efforts to comprehend the variables that influence consumers' decisions to purchase an apartment, therefore promoting client satisfaction and the long-term viability of apartment projects.

## **2. Literature review and Hypothesis Development**

### **2.1. Literature review**

The purchase decision involves identifying needs, creating options, and selecting specific brands or products (Salem, 2018). Several factors affect it before making a purchase decision, 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". Before using or buying a product or service, people engage in mental activity that leads to the action, called purchase intention (Puspitasari et al., 2018). Ajzen, (1991) explains that if customers have an intention, they are motivated to perform the specific behavior, making the motivational factor a critical point of intention. Additionally, customers experience different phases in purchasing intention where they consider different brands, rank these brands, and then intend to buy among alternatives (Kotler, 2000). Similarly, purchase intention is described as an individual's desire to purchase something (Arslan & Zaman, 2015; Lin & Lu, 2010).

According to Kan & Fabrigar, (2017), attitudes toward behavior, subjective norms, and perceived behavior control significantly impact behavior intention. The theory of planned behavior has valuable applications in predicting and explaining shopping behaviors, with the most popular theory being the planned behavior theory, which is adopted to explore behavior intention. The Theory of Planned Behavior (TPB) is a development of the Theory of Reasoned Action (TRA). According to the TPB theory proposed by Ajzen, (1991), consumers have a desire (or behavior intention) before making a purchase decision (Ajzen, 1991; Sheeran et al., 2003). Besides, intention means people are motivated to plan for doing an action or behavior (Jonsson et al., 2019). In addition, marketers use the prediction of shopping behavior and purchase intention to gain advantages in market competition, making purchase intention an essential aspect of consumer behavior when they are interested in purchasing a product or service (Khairunnisa et al., 2018).

Reviewing previous studies on the research topic, the authors identified several issues. Firstly, previous studies identified the factors that directly affect the intention to buy an apartment and the factors that directly affect the decision to buy an apartment without mediating variables. Therefore, the authors' research focuses on the factors affecting the decision to buy an apartment through the intermediate variable, the intention to buy an apartment. Second, 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. Third, previous studies used Binary Logistic regression models and hierarchical logit regression models in Ho Chi Minh City. In this study, the authors used a linear regression model and SEM. Fourth, the study contributes to each subject when developing relevant policy implications.

To sum up, an actual purchase action represents a positive purchase intention, whereas a negative one indicates no actual purchase occurred. Thus, understanding and predicting behaviors have many applications in marketing and economics. Additionally, this study incorporates finance, perceived physical quality, and favorable government policies/incentives to study the behavioral intention to buy the apartment. These three factors are related to economic benefits and can be perceived as savings. Therefore, this paper adopts behavioral economics theory to explain our model. As a result, this study aims to investigate the variables determining behavioral intention to purchase an apartment. The

variables of TPB and the other three variables identified as necessary in the exploratory factor analysis (EFA) study are discussed in the following sections.

## 2.2. Hypothesis development

The theory of planned behavior is based on consumers' attitudes toward behavior, subjective norms, and perceived control over performing the behavior to predict consumer behavior (Ajzen, 1991; Sheeran et al., 2003). Furthermore, economics is a factor that expresses the difference between human behavior and standard behavior models, such as finance and savings aspects (Mullainathan & Thaler, 2000). Therefore, the theory of planned behavior is used as the basic theory to build the research model that examines economic decision-making by analyzing decision-makers' biases, tendencies, and behaviors (Thaler, 1980). So, combining with the theory of planned behavior, 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.

As mentioned above, the intention of action defined by (Ajzen, 2002) is customers action directly affected by attitude, and subjective norms. Attitude refers to the extent to which a person has favorable or unfavorable judgments regarding an object, person, or event. An attitude is a lasting general evaluation of something that it has knowledge of that something, liking or disliking, and the strength of the feelings (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 there is a positive correlation between these attitude and the intention of a specific action (Giampietri et al., 2018; Rameez & Kulathunga, 2019; Redda, 2019). Furthermore, Adis & Kim, (2013); Jung & Seock, (2016) explore the positive effect of customers attitude on intention to buy products or services. The study by Shastry (2021) also supports the direct relationship between attitude and purchase intention. Therefore, the hypothesis is proposed:

*H1: Attitude positively affects Intention 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). Besides, subjective norms show a customer's intention is affected by external factors, in which beliefs are significant to build a customer's intention. 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 intention 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 there is a positive relationship between subjective norms and the intention to purchase real estate. Based on these references, the hypothesis is suggested as below:

*H2: Subjective Norms positively affects Intention 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 defined as the degree to which the person controls internal and external factors that facilitate or prevent the performance 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) Various research fields show that there is a positive relationship between perceived behavioral control, perception and purchase intention (Omar et al., 2012; Rachbini, 2018b; Teo & Beng Lee, 2010). In the real estate field, many studies show a positive relationship between perceived behavioral control and real estate purchase intention (Islam et al., 2022; Judge et al., 2019; Khoo et al., 2020). While in the case of Saudi Arabia, (Al-Nahdi, 2015) found that perceived behavioral control does not affect the intention of purchasing houses or land. Based on the supported empirical studies, the proposed hypothesis is as follows.

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

Financial constraints, which impose economic limitations on their behavior and restrict desired consumption (Tully et al., 2015). Literature on resource scarcity considers how financial constraints shift the consumer's attention to money (Mullainathan & Shafir, 2013) and change the way they use this scarce resource (Shah et al., 2012). Muna, (2023) defined financial capability as a person's ability to deal with costs, financial issues which influence the intention to perform an action. (Muna, 2023) explores the positive effect of financial capability on purchase intention and also financial capability literature based on talent theory (Ahmetoğullari, 2022). Some researches demonstrated that financial capacity has positive and significant effects on purchasing houses, 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 Intention 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 & management policies on customers' intention 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 Intention to buy the apartment of individual customers in Ho Chi Minh City.*

Hoe et al., (2018) described customer buying intention originated by interests to choose and buy a product or service. Arora & Sahney, (2018) concluded intention to buy affect positively customer behaviour. Al-Nahdi, (2015) conclude that intention is individual desire and a direct base for behaviour. In the case of buying apartment, intention behaviour occur before buying decision

behaviour (Numraktrakul et al., 2012). D. J. Kim et al. (2008); Puspitasari et al., (2018); Solinger et al. (2008) demonstrate that the intention has positive effect on the behaviors of customers, particular in purchase decisions. Besides, the studies by Jonsson et al. (2019); D. J. Kim et al., (2008); Komalasari et al., (2021); Rachbini, (2018); Truong, (2018) also support the significance of purchase intention toward the purchase decisions. As a result, the proposed hypothesis is as follows. According to the previous studies of Islam et al., (2022); Judge et al., (2019); Khoo et al., (2020); Kumar & Khandelwal, (2018) about the positive effect of intention to buy on purchase decision, the hypothesis is suggested as below:

*H8: Purchase intention positively affects Purchase decision the apartment of individual customers in Ho Chi Minh City.*

### 3. Methodology

#### 3.1. Sample

Five-point Likert scale questionnaires have been used to collect the data for this study. To maintain the confidentiality and privacy of the respondents, approval to conduct this study was taken from the concerned private consumers who intend to purchase the apartments in Ho Chi Minh City. The respondents are chosen randomly.

The sample in this study satisfies the given condition to implement the exploratory factor analysis (Hair Jr & Anderson, 1995). The total number of observed variables is 17 variables, the minimum number of samples needed for this study is:  $17 * 5 = 85$  samples. The survey collection process was conducted from December 2022 to March 2023, the author directly sent the questionnaires to 350 customers through online and offline channels. The number of questionnaires collected was 319, which accounts for 91.14%, but the valid questionnaires are 307.

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.

No.	Name of project	No. of responders	Percentage
1	Vinhomes grand park	35	11.4%
2	De La Sol	25	8.1%
3	Mizuki Park	63	20.5%
4	HaDo Centrosa Garden	37	12.1%
5	Topaz city	19	6.2%
6	Landmark 81 - Vinhomes Central Park	22	7.2%
7	Green River	71	23.1%
8	Celadon City	35	11.4%
	Total	307	100.0%

#### 3.2. Research model

Based on the TRA and TPB, combined with the empirical study (Ali et al., 2020), the research model is shown in Figure 1.

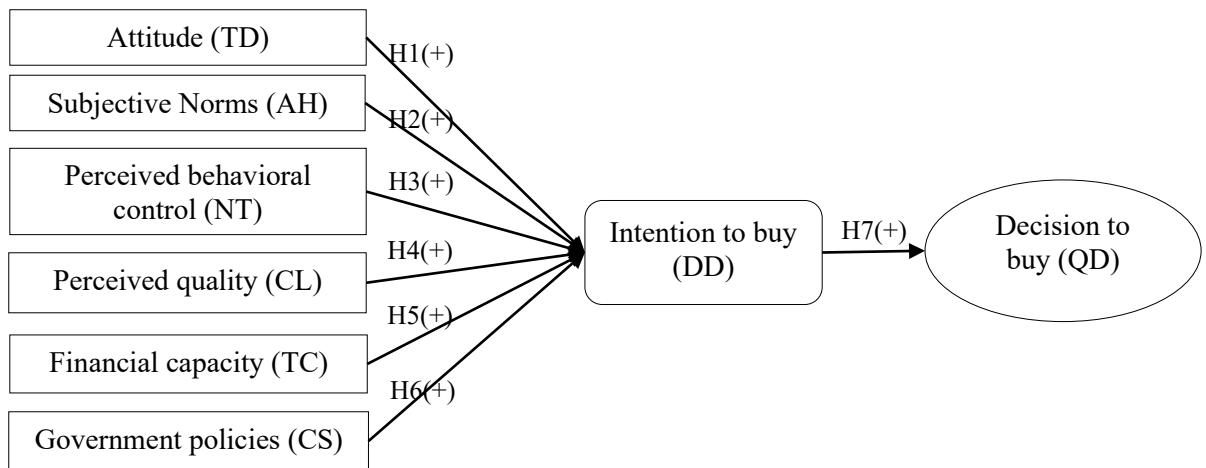


Fig.1: Research model

### 3.3. Research methods and procedures

The research process to determine factors affecting decision to buy the apartments under the mediating of purchase intention, is structural equation modeling (SEM). SEM, a multivariate data analysis technique, is used for model measurement and hypotheses test. There are two steps including preliminary qualitative and formal one in the research. First, the authors conduct expert interview in real estate field such as brokers, real estate researchers, managers of real estate developers...The purpose of expert interview is identifying the factors of apartment purchase decision in Vietnam market, which is mediated by purchase intention. Then, there are some supplements and adjustments for the relevant factors in the proposed research model. More precisely, under the calculation of the expert consensus rate, the listed factors, which are kept in the research model, are re-filter to matching in the Vietnamese context. The final questionnaire is completed after the pilot study. Second, the authors apply quantitative methods including Cronbach's Alpha, Exploratory Factor Analysis; Confirmatory Factor Analysis; and Structural equation modeling. Finally, according to the findings, the discussions and conclusions are drawn to achieve the research objective.

The research process to determine the factors affecting apartment purchase decisions in Vietnam, which is mediated by purchase intention is as follows. Firstly, SPSS 20 was used for the descriptive statistics. Secondly, AMOS was employed to examine the proposed model. AMOS is a statistical tool for conducting confirmatory factor analysis (CFA) and Structural equation modeling (SEM) (Kroehne et al., 2003).

According to (Hair et al., 2017), such indices include the GOF index (GFI), adjusted GFI (AGFI), comparative fit index (CFI) and the root mean square error of approximation (RMSEA), which must satisfy various conditions for a good model fit. Specifically, the GFI should be close to 0.90, the AGFI should be more than 0.80, the CFI should be more than 0.9, the RMSR should be less than 0.05 and the RMSEA should be less than 0.10 (Hair et al., 2017).

## 4. Research Results and Disussions

Table 1 shows the demographic information of 307 respondents. The statistics in Table 1 shows that 168 customers are male (accounting for 54,72%) while the remaining percentage are female. The number of customers aged from 45 - 60 accounted for the highest proportion with 33,22%; followed by 27,71% of the group from 35 - 44 years old and 22,48% of the group from 25 - 34 years old. The lowest proportion falls into the age group of over 60 years old which is 5,54%. Moreover, 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. Looking at career aspects, government workers are the most crowded group which accounts for 47,56% of the respondents.

Table 1. Demographic information of respondents (Gender, Age, Education and Career)

Criteria	Frequency	Percentage (%)
<b>1. Gender</b>		
Female	139	45.28
Male	168	54.72
Total	307	100
<b>2. Age</b>		
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
<b>2. Education</b>		
High school	55	17.92
Vocational school	84	27.36
Undergraduates & postgraduates	168	54.72
Total	307	100
<b>3. Career</b>		
Business man	107	34.85
Government officers/government workers	146	47.56
Others	54	17.59
Total	307	100

Following the descriptive statistic, table 2 presents the summary of scales for all factors in the models and evaluation bases on the criteria proposed by (Nguyen, 2011).

Table 2. Summary of scales

No.	Construct	Number of Observations	Cronbach's Alpha	Evaluate
1	Attitude (TD)	5	0.921	Satisfied
2	Subjective Norms (AH)	4	0.955	Satisfied
3	Perceived behavioral control (NT)	3	0,957	Satisfied
4	Perceived quality (CL)	3	0,974	Satisfied
5	Financial capacity (TC)	5	0,939	Satisfied
6	Government policies (CS)	3	0,911	Satisfied
7	Intention to buy (DD)	4	0.879	Satisfied
8	Decision to buy (QD)	4	0.884	Satisfied

Table 2 summarizes the scales of factors. From testing the scales through Cronbach's alpha, the scales in Table 3 achieved reliability based on the principle of evaluating the total Cronbach's alpha coefficient; The correlation coefficient of the total variable and the coefficient "Cronbach's Alpha if Item Deleted" satisfy the requirements (Nguyen, 2011). Therefore, the scales are all reliable. Second, evaluating the statistical evidence of validity with EFA.

The results of the Barlett test Sig. value equals 0.000 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) = 0.860 > 0.5, so we can use the analytical method factor for data analysis. Besides, according



to the total variance explained, 08 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%). The way to group variables by factor is done by looking at the Pattern Matrix. In each row of each variable, if the largest attribute has the factor loading > 0.4, this attribute will belong to that factor. Thus, the variables with the largest loading factor in the row < 0.4 will be rejected because it has no significant measurement for any factor.

In Figure 2, to assess the overall model fit without the sample size's sensitive impact, GOF index (GFI), adjusted GFI (AGFI), comparative fit index (CFI), and the root-mean-square error of approximation (RMSEA) are applied to create a good model's fit.

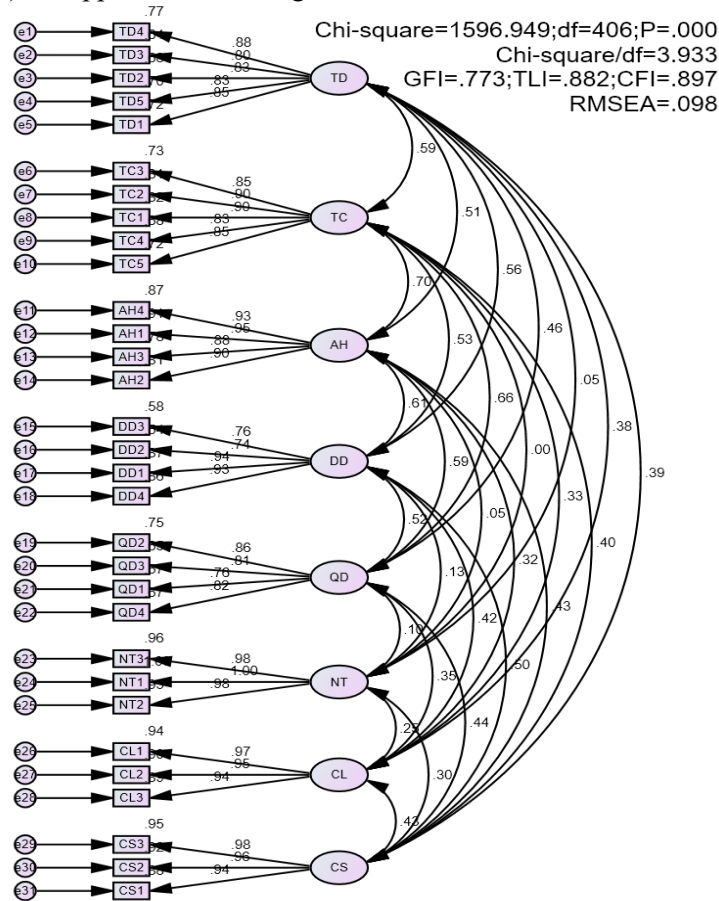


Fig.2: Results of model fit assessment through CFA

To discuss the model fit of CFA, we should consider the criteria of the various model fit indices. It has been suggested by the studies (Bentler, 1990; Fabrigar et al., 1999; H. Kim et al., 2016) shown in Table 6 below.

Table 3. The criteria of the various model fit indices

No.	Results	Goodness of Fit	Source
$\chi^2$	1,596.949	-	
df	406		
$\chi^2/df$	3.933	5.0	(Wheaton et al., 1977)
RMSEA	0.098	0.08 to 0.10	(MacCallum et al., 1996)
GFI	0.773	0.8	(Chau & Hu, 2001; Hair et al., 2017)
CFI	0.897	0.80	(Chou & Yeh, 2013)

Because the fit model is required to apply Structural equation modeling (SEM), so various

indicators indices, such as such as RMSEA, GFI and CFI need to be tested. Table 7 shows these indicators indices have been confirmed by the researchers, hence the measurement for the fitness of the model is satisfied.

Because  $RMSR = 0.000 < 0.05$ , the model is confirmed as a suitable model. Additionally, the result of  $AVE > 0.5$ , it means AVE of the scale is qualified and accepted (Hair et al., 2017).

After having the results of checking the fit of the entire model, the authors run SEM of the entire model. Thus, the model presented for analysis is completely satisfied. With the results are as follows (Figure 3).

- Chi-Square/df = 3.694  $\leq$  5;
- GFI = 0,743; TLI = 0,892; CFI = 0,904; RMSEA = 0,094 < 0,1.

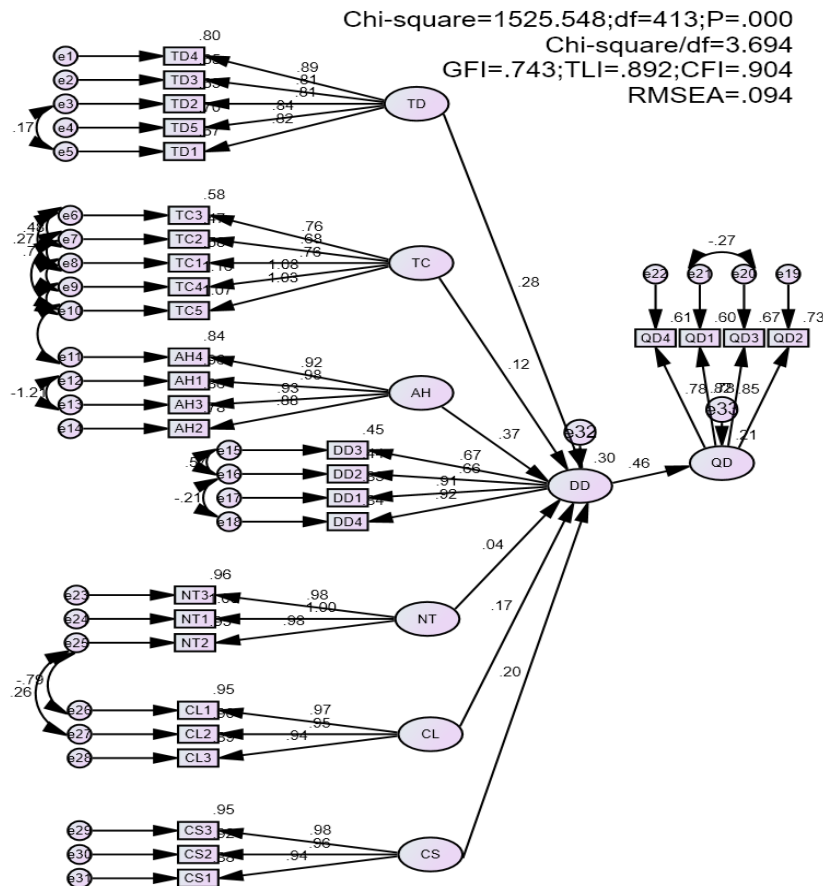


Fig.3: Hypothesis testing

\* Hypothesis testing: after the model is tested to be suitable, the results of hypothesis testing are shown in tables of Regression Weights and Standardized Regression Weights.

Table 4. Regression Weights

			Estimate	S.E.	C.R.	P
DD	<---	TD	.156	.032	4.917	***
DD	<---	TC	.078	.029	2.673	.008
DD	<---	AH	.192	.029	6.602	***
DD	<---	NT	.014	.019	.711	.477
DD	<---	CL	.081	.025	3.285	.001

DD	<---	CS	.094	.024	3.862	***
QD	<---	DD	.834	.120	6.971	***
TD4	<---	TD	1.000			
TD3	<---	TD	.891	.049	18.276	***
TD2	<---	TD	.873	.048	18.052	***
TD5	<---	TD	.950	.049	19.520	***
TD1	<---	TD	.885	.048	18.471	***
TC3	<---	TC	1.000			
TC2	<---	TC	.907	.048	19.035	***
TC1	<---	TC	1.018	.057	17.699	***
TC4	<---	TC	1.436	.331	4.342	***
TC5	<---	TC	1.393	.318	4.378	***
AH4	<---	AH	1.000			
AH1	<---	AH	1.052	.032	32.940	***
AH3	<---	AH	.943	.034	27.455	***
AH2	<---	AH	.907	.035	25.778	***
DD3	<---	DD	1.000			
DD2	<---	DD	1.093	.070	15.519	***
DD1	<---	DD	1.531	.112	13.677	***
DD4	<---	DD	1.552	.113	13.684	***
QD2	<---	QD	1.000			
QD3	<---	QD	.912	.058	15.775	***
QD1	<---	QD	.843	.058	14.527	***
QD4	<---	QD	.838	.053	15.895	***
NT3	<---	NT	1.000			
NT1	<---	NT	1.010	.012	82.122	***
NT2	<---	NT	.994	.015	67.033	***
CL1	<---	CL	1.000			
CL2	<---	CL	.997	.018	54.359	***
CL3	<---	CL	.975	.023	43.002	***
CS3	<---	CS	1.000			
CS2	<---	CS	1.040	.023	45.331	***
CS1	<---	CS	1.025	.027	38.562	***

Notes: P: \*\*\* means  $p < 0,001$

\* The degree of impact of the independent variables on the dependent variable.

Table 4 shows that:

- Government policies affect consumers' purchasing apartment intention ( $P=0,000$ );
- Subjective norms affect consumers' purchasing apartment intention ( $P=0,000$ );
- Perceived quality affects consumers' purchasing apartment intention ( $P=0,001$ );
- Financial capacity affects consumers' purchasing apartment intention ( $P=0,008$ );
- Attitude affects consumers' purchasing apartment intention ( $P=0,000$ );
- Consumers' purchasing apartment intention affects consumers' purchasing apartment decision ( $P=0,000$ ).

According to the table 5, the contents cover that:

- Government policies affect consumers' purchasing apartment intention, with an estimated impact of 0.204;
- Subjective norms affect consumers' purchasing apartment intention, with an estimated impact of 0.373;

- Perceived quality affects consumers’ purchasing apartment intention, with an estimated impact of 0.171;
- Financial capacity affects consumers’ purchasing apartment intention, with an estimated impact of 0.118;
- Attitude affects consumers’ purchasing apartment intention, with an estimated impact of 0.275;
- Consumers’ purchasing apartment intention affects consumers’ purchasing apartment decision, with an estimated impact of 0.461.

Table 5. Summary of hypothesis testing results

No.	Hypothesis	Path Coefficient	p-value	Decision
1	Attitude → Purchasing apartment intention	0.275	0.000	Accept
2	Financial capacity → Purchasing apartment intention	0.118	0.008	Accept
3	Perceived behavioral control → Purchasing apartment intention	0.036	0.477	Reject
4	Perceived quality → Purchasing apartment intention	0.171	0.001	Accept
5	Subjective Norms → Purchasing apartment intention	0.373	0.000	Accept
6	Government policies → Purchasing apartment intention	0.204	0.000	Accept
7	Purchasing apartment intention → Purchasing apartment decision	0.461	0.000	Accept

This study determined that Attitude, Financial capacity, Perceived quality, Subjective Norms, and Government policies significantly influenced consumers’ purchasing apartment intention in Ho Chi Minh City. Especially, the findings investigate the intervening role of purchasing intention on purchasing decision.

## 5. Conclusions and Limitations

The paper estimates the determinants of consumers’ purchasing apartment decisions in Ho Chi Minh City under the mediating role of purchasing apartment intention. Based on the TRA and TPB models, the theoretical model defines six factors that affect consumers’ purchasing apartment decisions via purchasing apartment intention, such as attitude, subjective norms, perceived behavioral control, perceived quality, financial capacity, and government policies. By using the qualitative and quantitative methods, except perceived behavioral control, the five remaining factors have a statistically significant positive influence on consumers’ purchasing apartment decisions in Ho Chi Minh City.

The article's research results show that the intention to buy an apartment will affect the customer's decision to buy an apartment, thereby increasing the demand for this product. Therefore, the real estate developers consider surveying the customer's actual needs. In details, 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). Regarding financial capacity, the survey results show that customers pay attention to the price and payment policy of the apartment. Therefore, real estate developers need to consider price and price policy, so that customers can easily access the apartment segment of the business. Besides, real estate businesses need to have affiliate programs with banks to assist customers with loans, making it easier for buyers to own their apartments. In addition, in the research model, government policy positively affects customers' intention to buy apartments. Urban planning policies of the state need to create favorable conditions for customers to buy apartments. In Ho Chi Minh City, the city government needs to develop a reasonable plan with a long-term vision of the

trend of urbanization to reserve land for the development of apartment complexes with efficient infrastructure. The state's financial support policy also creates favorable conditions for customers to buy apartments (such as interest rates, support credit packages, and sponsorship...). The government also encourages real estate businesses to have project plans matching with the payment plan to create advantaged opportunities for customers to purchase apartments, including access to low-interest capital from real estate developers, financial institutions, and government policy so that the cost of buying an apartment is reasonable and competitive compared to other housing types. In addition, the government needs to provide legal information about apartment projects through enterprises and social propaganda to raise awareness about consumers' decisions to buy and use apartments.

Despite the specific results obtained, there are some limitations that need to be considered for future studies. First, the survey has just been done in the short-term period. Second, the study just focuses on the residents of Ho Chi Minh City. Third, the application from the study has just implied the real estate developers and government policies in the Ho Chi Minh City context. Finally, the study is still not concerned about the COVID-19 impact that affects purchase behavior.

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**Appendix**

<b>Construct</b>	<b>Observations</b>	<b>Code</b>	<b>Sources</b>
Attitudes	Buying an apartment creates satisfaction for me	TD01	(Al-Nahdi, 2015; Islam et al., 2022)
	Buying an apartment give me sustainable life	TD02	
	Buying the apartment bring pleasure for me	TD03	
	Buying the apartment makes me anxious	TD04	
	Buying the apartment makes me feel regret.	TD05	
Subjective norms	My spouse encourages me to buy the apartment.	AH01	(Islam et al., 2022; Judge et al., 2019)
	My family expect me to own an apartment	AH02	
	My friends and colleagues influence me to buy the apartment.	AH03	
	The brokers/ consultants impact me to buy the apartment.	AH04	
Perceived behavioral control	I have many have many options for choosing to buy the apartment	NT01	(Islam et al., 2022; Judge et al., 2019; Khoo et al., 2020)
	I believe that I have enough legal conditions to buy the apartment	NT02	
	I have enough information to buy an apartment	NT03	
	I have enough control in my purchase decision	NT04	
	I have enough knowledge to buy an apartment	NT05	
Perceived quality	I prefer to buy an apartment that has design and open living space	CL01	(Chia et al., 2016; Rachmawati et al., 2019; Satriawan & Setiawan, 2020; Sonia, 2020)
	I prefer to buy to buy an apartment that has convenient location with surrounding amenities	CL02	
	I prefer to buy an apartment that has quality construction and infrastructure	CL03	
Financial capability	I have enough financial capability to buy an apartment.	TC01	(Khoo et al., 2020; Kumar & Khandelwal, 2018; Mariadas et al., 2019; Rachmawati et al., 2019; Satriawan & Setiawan, 2020; Sonia, 2020)
	I can get loans from relatives, friends, or banks	TC02	
	I consider about apartment prices and real estate developers s' payment policies	TC03	
Government policies	Government urban planning policies create favorable conditions for customers/me to access to buy apartments.	CS01	(Glaeser et al., 2017; Islam et al., 2022)
	The government financial support	CS02	

Construct	Observations	Code	Sources
	policies/government incentives create favorable conditions for me to access to buy apartments (such as interest rates, funding packages).		
	The tax policy creates favorable conditions for me to access to buy apartments. (Registration fee and other fees, PIT, fee for granting house ownership certificate)	CS03	
Purchase intention	I intend to buy apartments because apartments bring many benefits for me.	DD01	(Islam et al., 2022; Judge et al., 2019; Khoo et al., 2020; Kumar & Khandelwal, 2018)
	I intend to buy an apartment that is recommended by relatives, family, and friends.	DD02	
	I intend to buy an apartment because it is suitable for the family's income.	DD03	
	I intend to buy apartments because there are many support policies.	DD04	
Purchase decision	I decide to buy an apartment because of the quality of the apartment.	QD01	(Satriawan & Setiawan, 2020)
	I decide to buy the apartment because I intended to buy the apartment	QD02	
	I decide to buy an apartment because it matches my demands.	QD03	
	I decide to buy an apartment because I had experience in buying an apartment.	QD04	