



Print ISSN: 1738-3110 / Online ISSN 2093-7717
JDS website: <http://www.jds.or.kr/>
<http://dx.doi.org/10.15722/jds.21.07.202307.51>

Determinants Influencing Housing-Option Decision of Gen Y: The Case of Vietnam*

Ha Thu LUONG¹, Dung Manh TRAN², Dan Linh Ngoc NGUYEN³, Van Bao NGUYEN⁴, Anh Thuc LE⁵,
Hieu Van PHAM⁶

Received: March 25, 2023. Revised: May 19, 2023. Accepted: July 05, 2023.

Abstract

Housing is not only a basic requirement, but also a method to maintain stability and improve living. In the period of rapid social development which has a significant impact on the aging population, the housing issue is an impediment to Gen Y in Asia. Therefore, solving the housing conundrum is the most effective solution to other social problems. **Purpose:** This research is conducted to investigate factors influencing housing-option decisions of Gen Y and proposes recommendations to them as well as Governments and the real estate investors. **Research design, data, and methodology:** The Theory of Planned Behavior was employed with the expanded variables (Financial status, Location, Public services and Government incentives) based on literature review. **Results:** With 445 valid responses, almost all proposed hypotheses are accepted, which supports the positive interrelationship among variables. In the stage of data processing, we have determined the influence of each factor to the dependent variable "Actual Behavior", thereby helping real estate investors understand their desires, as well as improve the ability to meet customer needs. **Conclusion:** This is the basis to determine the influence of these factors, thereby providing recommendations to customers and what is more, giving real estate enterprises an insight of customers' demand in order to improve product quality and optimize the benefits of each party.

Keywords: Housing-Option, Real Estate, Public Service, Government Incentives, Location, TPB, Gen Y.

JEL Classification Code: M00, M10, M20

1. Introduction

For thousands of years, humans have consciously built houses to accommodate. In the beginning, home was just a shelter, then developed into a place of daily living and gradually became indispensable. As time goes by and

society develops intensively, the role of housing remains unchanged.

Housing investment is considered a long term investment because it is the main point affecting the living standard of people from both macro and micro perspectives (Mariadas et al., 2019). Property purchase is therefore a

* This research is funded by National Economics University, Hanoi, Vietnam

1 First Author. Lecturer & Researcher, School of Advanced Education programs, National Economics University, Hanoi, Vietnam. Email: haluongthu@neu.edu.vn

2 Second Author. Deputy Editor-In-Chief, Journal of Economics and Development, National Economics University, Hanoi, Vietnam. Email: manhdung@ktpt.edu.vn

3 Third Author. Research Assistant, School of Advanced Education programs, National Economics University, Hanoi, Vietnam. Email: ng2linhdan@gmail.com

4 Fourth Author. Research Assistant, School of Advanced Education

programs, National Economics University, Hanoi, Vietnam. Email: nbaovan2212@gmail.com

5 Fifth Author. Research Assistant, School of Advanced Education programs, Hanoi, Vietnam. Email: thuc.anh1310@gmail.com

6 Sixth Author. Lecturer & Researcher, Faculty of Economics, Hanoi University of Business and Technology, Hanoi, Vietnam. Email: hieukinh836@gmail.com

© Copyright: The Author(s)

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

highly complex decision-making process as evidenced by costly acquisition, infrequent purchase, riskiness, high self-expressiveness, and awareness among buyers of significant differences among product alternatives (Manivannan & Somasundaram, 2014).

After 35 years of development since its inception in 1987, the Vietnamese real estate market has experienced significant changes, especially in big cities. In Hanoi, the rapid urbanization along with a high population growth rate (an average of 2% - 3.4% a year) has made demand for housing particularly increased. In order to accelerate the urban infrastructure development plan, specifically creating accommodation for people in the growing demand situation, in the period of 2021 - 2025, Hanoi City has plans to build 44 million m² of residential floors. The city sets targets for diversified development of all housing types, including apartments (90% in projects), social housing (1.25 million m²), resettlement houses (560,000 m²), commercial housing (19.69 million m²) and individual houses (22.5 million m²) (Thanh, 2022). These projects will contribute to balancing and diversifying the real estate market, helping customers find more choices when making decisions.

Gen Y, who were born between the years 1986 and 1996, have a high financial capacity and home demand for stability. However, having abundant choices may confuse them in the decision-making process. This complication does not mystify only Vietnamese Gen Y, but also Southeast Asian fellows and additionally, the Japanese, South Korean and Chinese. From the mentioned problem, we have studied the factors affecting the decision to choose the type of housing of gen Y in Hanoi city. This is the basis to determine the influence of these factors, thereby providing recommendations to customers and what is more, giving real estate enterprises an insight of customers' demand in order to improve product quality and optimize the benefits of each party. This particular study in Vietnam could be a generalized value for the Southeast Asian market with similar development level and mutual culture.

2. Literature Review

The Theory of Planned Behavior (TPB) was developed by Icek Ajzen as an attempt to predict human behavior (Ajzen, 1991). The TPB posits that attitude toward the behavior, subjective norm, and perceived behavioral control influence behavioral intention.

The first construct of the theory is behavioral intention, which is the motivational factors that influence behavior (Ajzen, 1991). The stronger the intention to engage in a given behavior, the more likely it is to perform that behavior. The second construct is attitude towards the behavior which is the extent to which a person has a favorable or

unfavorable appraisal of a given behavior. Attitude consists of behavioral beliefs and outcome evaluations. Subjective norm is the third construct which is a social pressure to perform or not to perform a given behavior. Combination of normative beliefs and motivation to comply constitute subjective norm. Perceived behavioral control also plays a key role in the TPB and it refers to people's perception of the ease or difficulty of performing the behavior of interest.

In combination, Attitudes towards behavior, Subjective norms, and Perceived behavioral control together lead to the formation of behavioral intentions (Rambalak & Govind, 2017). The illustration below simulates the corresponding TPB model. In general, those who rate favorable behavior feel pressured from the expectations of others involved. Furthermore, the ability to accept certain behaviors can establish high behavioral intentions (Liu et al., 2022).

There have been many studies using TPB as a theoretical basis. A recent study by Wijayaningtyas et al. (2019) on cognitive factors controlling the behavior of gene Y (millennials) towards the intention to buy environmentally friendly housing. Also based on the TPB model, Chung et al. (2018) have shown the factors affecting the intention to buy houses and land in Greater Kuala Lumpur, Malaysia. Research shows that there are positive relationships between attitude, subjective norm, perceived behavioral control and financial situation to behavioral intention to buy land.

In addition, based on the extended theory of The Theory of Planned Behavior (TPB), Liu et al. (2022) pointed out that Government Support/ Government Incentives is considered the most important factor, followed by attitude and subjective standards, while perceived behavioral control has no effect on young consumers' intention to buy green housing. From there, implying the role of the Government in supporting and promoting green housing.

Some typical studies on the factors affecting the intention to buy real estate can be mentioned as the study of Al-Nahdi et al. (2015). In which, in order to find out the influence of attitude, location, living space, and public services on purchase intention, Al-Nahdi and his colleagues conducted a study with a population of Saudi Arabians. The study has shown the influence of the independent variables (Attitude, Subjective norm, Perceived behavioral control) and the moderator (location, public service) on the dependent variable, which is the intention to buy real estate / property in Jeddah, Saudi Arabia based on the Theory of Rational Action (TRA) and the Theory of Planned Behavior (TPB).

In addition, many authors have also studied other factors such as pride in having ownership and the influence of children on the willingness of households to buy a home (Liu et al., 2019). In addition, demographic factors such as gender, age, income also play an important part in the results of these studies.

3. Hypothesis Development and Research Model

3.1. Hypothesis Development

Public Service (PS): Public service happens to be one of house purchasers' motivations to choose a house. Depending on each location, these public services are differently provided. However, real estate businesses can still provide some of the public amenities that make a difference to their projects. Public facilities include recreation facilities, parks, sports facilities, sports clubs (Yam & McGreal, 2010) water supply, electricity, internet (Amenyah & Fletcher, 2013). Residents are also worried about being provided with amenities such as street lighting and easy access to main roads because they have no control over the provision of these amenities (Ramdane & Abdullah, 2000).

Young people today are very interested in public amenities and living environment, especially those who intend to buy apartments and private houses. Besides, research by Al-Nahdi (2015) has shown that public services and living environment do not have a great influence on the decision to buy a house. Therefore, the authors hypothesized that public services and living environment have an influence on making housing choices easier or more difficult, based on the situation of public services, community and living environment around the type of housing. So we give a hypothesis as:

H1: "Public service" has a positive impact on "Perceived Behavior Control"

Government Incentives (GI): In the research about China in 2019, Zheng et al. (2019) concluded that the Government Incentives has impact on perceived behavior control. Furthermore, they also assert that Government Support has the greatest effect on the development of green buildings. With the support of the Government, the young generation can benefit from financial subsidies, which has strengthened their intention to rent and, in turn, stimulated the demand for housing. In addition, different support policies cause different levels of influence. They made three observed variables including preferential borrowing policies, financial support and tax incentives, ranked in order of decreasing influence.

In the context of Vietnam, the authors have not found documents analyzing the impact of Government support on perceived behavioral control in Vietnam. It can be said that this is a new factor, so the authors propose that the Government Support factor has an impact on the perception of behavioral control. Therefore, the 2nd hypothesis is designed as:

H2: "Government Incentives" has a positive impact on "Perceived Behavior Control"

Zhang et al. (2019) with the study of Investigating Young Consumers' Purchasing Intention of Green Housing in China has concluded that young consumers could gain economic advantages to offset the high price of green housing. In this research, we also assess that the Government should form diverse financial incentives in order to foster the development of green housing on a large scale and the orientation of house-buyers.

From the above study, it can be seen that there is a link between the Chinese government's support and the financial situation of buyers of green housing. However, research literature on the correlation between Government Support and Financial Situation is limited both in Vietnam and internationally. Realizing that this could be a new finding, the authors decided to propose Government Support to have an impact on the Financial Situation. Therefore, the 3rd hypothesis is given as:

H3: "Government Incentives" has a positive impact on "Financial Status"

Attitude (ATT): Attitude refers to the extent to which a person can judge favorably or negatively based on objects, people, or events. Mostafa (2007) also found that a positive relationship between attitudes and behavioral intentions has been established in many cultures. Attitude has a clear role in deciding to accept a particular behavior. According to Kotchen and Reiling (2000), attitude is the main important predictor of behavioral intention. Attitudes are also psycho-emotions that are oriented through consumer evaluation, and if positive, behavioral intentions tend to be more positive (Chen & Tung, 2014).

According to Gibling and Nelson (2003) and other researchers attitude influences consumer intention to purchase a house, since attitude is one of the determinants that affect individual behavior. Attitude is defined as a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor (Ajzen, 1980). Therefore, a person who believed in the result from engaging in a positive behavior will have a positive attitude toward performing that behavior, while a person who believed in the result from engaging in a negative behavior will have a negative attitude toward performing that behavior (Ajzen, 1991). So we give the hypothesis as:

H4: "Attitude" has a positive impact on "Behavioral Intention"

Subjective Norms (SN): Subjective Norm results from how the person perceives the pressures placed on him/her to

perform or not to perform a particular behaviour (Ajzen, 1991; Han & Kim, 2010; Tonglet et al., 2004; Kim & Han, 2010). Friends, parents, political parties, and/or agents might be involved in the purchasing decision (Blankson et al., 2000). The attitude of others influences the purchase intention and purchase decision. Attitude of others means to which limit the attitude of others that affect the customer's purchase decision. When others are close to a customer and have high negativism toward the product, customers will be more likely to adjust his purchase intention. And a customer's purchase intention will increase if others have other preferences for the same product (Ajzen, 1980; Rivis & Sheeran, 2003).

Social and cultural factors play a significant role in the relative importance of housing preferences which are determined by religion, kinship, and social relations (Jabareen, 2005). Another study conducted in China by Zheng et al. (2019) agrees that young people's choice to rent a house is positively affected by the subjective norm factor. The author has shown that persuading friends or family members can boost intention to rent. If people they trust give advice, they are more likely to have behavioral intentions. So we propose a hypothesis as:

H5: "Subjective Norms" has a positive impact on "Behavioral Intention"

Perceived Behavioral Control (PBC): Perceived behavior control is defined as the extent to which the person has control over internal and external factors that facilitate or constrain the behavior performance. Control beliefs are a person's beliefs toward factors available which facilitate or prevent performing a behavior (Ajzen, 1991; Han & Kim, 2010; Tonglet et al., 2004; Kim & Han, 2010). Latest studies found that perceived behavioral control was a predictor of intention (Iakovleva, 2011; Alam & Sayuti, 2011). Various research in various areas, showed that there is a positive relationship between perceived behavioral control and intention (Blanchard et al., 2008; Fang, 2006; Gopi & Ramayah, 2007; Ing-Long & Jian-Liang, 2005; Fu et al., 2006; Mathieson, 1991; Ramayah & Omar, 2008; Taylor & Todd, 1995; Teo & Pok, 2003; Wise, 2006; Teo & Lee, 2010). In the real estate area researchers found perceived behavioral control predictors to purchase housing (Numraktrakul et al., 2012). And some researchers found that perceived behavior control has no effect on intention (Yusliza & Ramayah, 2011).

Government incentives are the anterior variables of Perceived Behavior Control as the government plays a leading role in driving the rental market. Within the context of "the same lease and the right to buy", the rental market is bound to encounter problems. For example, rising rents and disrupted admissions to prestigious schools can lead to additional costs. Market developers often pass other costs on

to consumers. Consumer enthusiasm for home buying won't wane even without financial offsets and expectations for a bright future. Therefore, government incentives promoting the development of the rental market can make young consumers more inclined to rent through efficient subsidies. These forms such as economic subsidies, tax incentives, preferential lending policies and increased housing supply.

Therefore, perceived behavioral control of renting more intensely than buying consumer goods; for example, the comfort of living in renting a house, the harmony in the neighborhood and the level of economic incentives by the government. Consumers will be more willing to lease in the face of factors in favor of consumers. So the 5th hypothesis is designed as:

H6: "Perceived Behavioral Control" has a positive impact on "Behavioral Intention"

Financial Status (FS): Financial situation is one of the most important factors influencing homebuyers' choices (Kueh & Chiew, 2005). The financial aspect of real estate requires a relatively large amount of capital and may also include interest costs (Xiao & Tan, 2007). In addition, the financial situation must also be considered based on a combination of house price, mortgage loan, income and payment term. Mwfeq (2011) also found that economic factors include five variables: income, interest rate, location, exchange rate and taxes. Furthermore, Daly (2003) also discovered groups of "interest rate", "maximum mortgage", "maximum monthly payment" and "payment period". In Vietnam, 87.9% of respondents want the house price to be lower than 20 million/m². House prices play a very important role in the affordability of customers. Home price reduction is the most important, according to which, developing more affordable housing is an alternative to mitigate affordability problems in China.

Researchers have demonstrated a positive relationship between the financial situation and the customer's decision to buy products. Through the quantitative analysis of 213 people in the Ho Chi Minh City area, the financial situation factor with 5 observed variables is the component with the highest standardized regression coefficient. This factor has beta = 0.225 and insignificant sig value, which is concluded to have the strongest impact on customers' decision to buy a house.

This conclusion is also supported by the other researcher. With a sample of 200 households in Soc Trang city, the authors build a scale of 8 observed variables for the financial situation and show that this factor has beta = 0.198 (sig value = 0.005). From that, the authors conclude that the financial situation is one of the factors that directly affect people's decision to buy real estate and houses. So we propose a hypothesis as:

H7: “Financial Status” has a positive impact on “Behavioral Intention”

Location (LO): In an individual’s decision making to purchase housing, location is one of the affecting factors as mentioned by Kaynak and Stevenson (1982). Location for home selection may be affected by "distance to shopping mall", "distance to market or supermarket", "distance to school", "distance to workplace" (Adair et al., 1996), “distance to amusement parks” and “distance to main roads” (Iman et al., 2012), the distance from home to a relative's house or near the place where they live. According to modern marketing concepts, the exchange value of a product includes tangible value and intangible value. The tangible value of the house depends on the characteristics of the house and the intangible value depends on the location of the dwelling. Housing status is a measure of the social desirability associated with housing at a given location. It can represent wealth, culture, education, environmental quality, and dependence into the current value system of a given society and in that sense it is closely related to specific historical conditions, which can be considered as the time dimension. The fact also shows that, no person has needs only for quality or for status, everyone has needs for both these attributes in a certain combination.

Research paper by Zrobek et al. (2015) defines a housing location as a place where expectations of comfort and accessibility are met. Therefore, location is the most important aspect when considering the value of a type of real estate. Houses in a good location will have a higher value and more attractive future profits. The importance of location is also demonstrated by Daly et al. (2003) in countries such as Australia, the United Kingdom and Ireland.

Besides, the location is also studied with another name, "distance" with the same meaning and importance in the work of Chia et al. (2016). Distance is defined as the geographical distance from the location of the house to important places such as offices, schools, hospitals, etc. Being close to convenient areas will bring convenience to residents, helping they address wants and needs within the appropriate geographic range.

In Vietnam, there have been a few research papers showing a positive relationship between house location and intention to choose a type of housing. The 8th hypothesis is proposed as:

H8: “Location” has a positive impact on “Behavioral Intention”

Behavioral Intention (BI): According to organizational behavior theory, actual behavior depends on both perceived behavioral control factors and behavioral intentions. The greater the intention to perform the behavior, the more likely it is that the behavior will be performed (Zheng et al., 2019).

In this study, the actual behavior is the decision to choose the type of housing and the more certain the intention, the easier the decision is made.

H9: “Behavioral Intention” has a positive impact on “Actual Behavior”

3.2. Research Model

Based on the theoretical basis of The Theory of Planned Behavior (TPB) by Ajzen (1991), the authors built the final research model with seven independent variables including Public Service (PS), Government Incentives (GI), Attitude (ATT), Subjective Norms (SN), Perceived Behavioral Control (PBC), Financial Status (FS) and Location (LO). These seven hypotheses were used to examine the influence on two dependent variables, Behavioral Intention (BI) and Actual Behavior (AB).

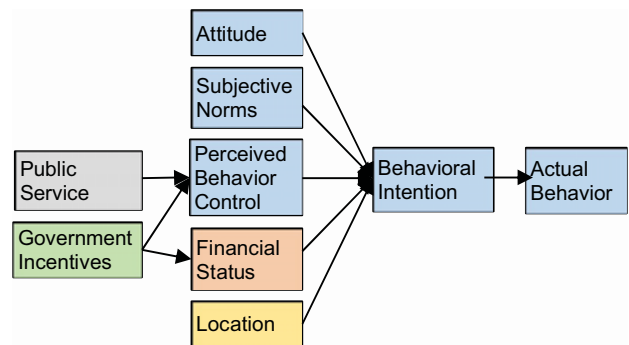


Figure 1: Model of Research

The TPB model, which was developed to understand and forecast human behavior, suggested a correlation between beliefs (or intentions) to actual behavior. According to Ajzen (1991), a person’s certain behavior at a specific time and place is influenced by one’s intention, which can be explained by three core components, namely Attitude (ATT), Subjective Norms (SN) and Perceived Behavioral Control (PBC). Although not often actively or consciously taken into account, these three factors serve as the framework for the decision-making process. Despite its limitation in not integrating the role of an individual's personal needs and emotions to one’s behavioral intention, the TPB model still covered significantly the relationship between one’s intention and behavior. Its great success can be seen in the model being used to explain and predict human behaviors in a myriad of behavioral domains (Alam & Sayuti, 2011; Blanchard et al., 2008; Gopi & Ramayah, 2007). Thus, the researchers have utilized the work of Ajzen (1991) and included the original model’s five variables to the final research model.

On the other hand, in the Vietnam context, some independent variables such as Public Service (PS), Government Incentives (GI), Financial Status (FS) and Location (LO) are expected to influence two dependent variables mentioned above. Therefore, the authors decided that there are seven independent variables constructed to study their impact on two dependent variables, Behavioral Intention (BI) and Actual Behavior (AB).

4. Research Methodology

Sample characteristics: The population of the study consists of all citizens who were born in the period from 1981 to 1996 and currently live in Hanoi, Vietnam. According to the works of researchers (Khoa et al., 2022; Marshall & Wolanskyj-Spinner, 2020), Gen Y, or the millennial generation, is defined as people born from 1981 to 1996. They are described as “tech-savvy”, “innovative” and “socially responsible”. Since there is no primary data available, the researchers have to conduct surveys to collect secondary data needed for the research. Developed from the literature and hypotheses, the questionnaire includes two parts: the first part is used to collect demographic data and the second part is used to evaluate the significance of seven mentioned factors affect the intention and behavior of choosing housing options.

Data collection: The collection period started on 15/06/2022 and finished on 30/09/2022. The authors used convenience sampling selection, with a basis of locations, organizations, institutions... that were conveniently approached. There are 589 feedback, of which 553 were collected via online survey, 26 were obtained via hard-copy forms and 10 were offline interviews. After examining all the responses to eliminate those that are invalid, illogical or lack necessary information, 445 responses have qualified the validation examination and the authors proceed to the analysis phase.

Measures: The survey questionnaire to test the theoretical hypotheses was based on theory and additional items from literature. Measurement items for Attitude (ATT), Subjective norms (SN), Perceived behavior control (PBC), Financial status (FS), Location (LO), Public services (PS) and Government incentives (GI) were adopted and modified from Zheng et al. (2019), Zhang et al. (2018) and AL-Nahdi (2015). All the measurement items were formulated as Likert 5-point scales, ranging from 1 (strongly disagree) to 5 (strongly agree).

Estimation approach: In this study, Structural Equation Modeling (SEM) was chosen to estimate the relationships

assumed in the theoretical model. In the first step, Cronbach’s Alpha scale reliability test was performed for the purpose of measuring the reliability value of each component in the scale. Then, the research group conducted Exploratory Factor Analysis (EFA) to test the scale validity. Confirmatory Factor Analysis (CFA) was performed to measure the univariate, multivariable, convergent validity and discriminant validity of the proposed scale set in the study.

Next, we used Standardized Root Mean Square Residual (SRMR) to measure the fit of the proposed model. After performing the analysis of the external model to measure the consistency, discriminability, and fit of the model, the internal model (SEM) is analyzed to estimate the specific relationships among the variables in the model. These stages were processed on SPSS and SmartPLS.

5. Analysis Results

This section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation, as well as the experimental conclusions that can be drawn.

5.1. Measure Reliability

In the study, we employ the reliability test for proposed scales using Cronbach’s Alpha. The scale reliability must have the following standard values (See Table 1):

- + Results of Cronbach’s Alpha test for the required factors are greater than 0.6.
- + Correlation coefficient of the sum of all observed items is greater than 0.3.
- + Cronbach’s Alpha value if eliminating each observed item of the above factors is smaller than the Cronbach’s Alpha value of the scale.

Table 1 reveals that the coefficient values ranged from 0.719 to 0.88. Total Correlation of every item was above 0.3, which implied that all the variables were sufficiently reliable.

The exploratory factor analysis and initial factors form a new group of factors when the following conditions are satisfied: (i) the factor loadings is greater than 0.3, showing that these observed variables have reliability; (ii) The KMO coefficient satisfies the suitability of factor analysis if $0.5 \leq KMO \leq 1$ (Hair et al., 1998); (iii) Sig coefficient. = 0.000 of Bartlett’s Test indicates that there are statistically significant correlations between observed variables in the population, so the observations are suitable for factor analysis; (iv) Cumulative variance greater than 50% is suitable for factor analysis.

Table 1: Reliability analysis of determinants

	No. of observed items		Cronbach's Alpha	rho_A	Composite Reliability (CR)	Average Variance Extracted (AVE)
	Before	After				
ATT	4	4	0.851	0.853	0.899	0.691
SN	4	4	0.798	0.801	0.868	0.623
PBC	3	3	0.719	0.721	0.842	0.640
FS	5	4	0.795	0.823	0.878	0.706
LO	7	6	0.874	0.882	0.905	0.613
PS	10	6	0.88	0.885	0.909	0.624
GI	3	3	0.839	0.867	0.904	0.758
BI	3	3	0.839	0.845	0.905	0.761
AB	4	4	0.76	0.781	0.845	0.577

Source: Research result

The results of the EFA test of the variables for the KMO and Barlett's test results show that the KMO value = 0.887 > 0.05 and the coefficient Sig. = 0.000 < 0.05, thereby concluding that the observed variables are included. Correlation analysis and exploratory factor analysis (EFA) are suitable for use in this study.

The results of factor analysis also show that the total variance explained is 66.786% > 50%, the stopping point when extracting at the 9th factor is 1,115 > 1, all of which satisfy the conditions. There are 9 factors drawn from the analysis.

The evaluation of the reliability of the scale components is tested through 2 main indexes, which are the CA "Cronbach's Alpha" and the CR "Composite Reliability" index. Normally, to test the reliability of CA "Cronbach's Alpha" is done on SPSS software, if the result is above 0.6, the result will be accepted, with CR "Composite Reliability", a level above 0.7 is satisfactory. The AVE index presents the average extracted variance values of the variables in the research model. The minimum AVE value is 0.577, the maximum is 0.761, both larger than the required value of 0.05. The results of the analysis of all factors are satisfactory.

The results from the factor loadings show that the scale components all have a load factor > 0.700, the AB2 scale

has a load factor of 0.699, approximately equal to 0.700, but the group still decided to keep the scale. This is because the convergence is still acceptable, so the scale components for each factor are consistent with the remaining indices and are kept in the research model.

5.2. Measure Validity

Discriminant validity: According to Henseler et al. (2009), discriminant value is a value that measures the degree to which a concept of a particular latent variable is distinguished from the concept of other latent variables. This research employs HTMT results to measure discriminant validity and, according to Henseler et al. (2015) suggests that discriminant validity will be warranted if this value is below 0.9.

With the HTMT ratio value less than 0.900 (See Table 2), it shows that there is a discriminant value among the factors, according to Henseler et al. (2015).

The SRMR must be smaller than 0.08. Thus, with the SRMR value < 0.08, the research model is concluded to be consistent with the actual market.

Table 2: Discriminant validity test results

	SN	GI	AB	FS	PBC	PS	ATT	LO	BI
SN									
GI	0.226								
AB	0.393	0.136							
FS	0.18	0.369	0.063						
PBC	0.083	0.156	0.063	0.131					
PS	0.136	0.439	0.193	0.363	0.33				
ATT	0.166	0.565	0.208	0.341	0.369	0.442			
LO	0.063	0.287	0.271	0.55	0.135	0.469	0.408		
BI	0.24	0.489	0.39	0.41	0.282	0.53	0.578	0.483	

Source: Research result

5.3. Hypothesis Testing

After conducting the testing steps, the SEM structural model is used to specifically measure the relationship between the research variables.

Table 3: The Regression Model

	β	T-statistics	P values	Conclusion
SN -> BI	0.140	3.429	0.001	Accept
GI -> FS	0.314	6.379	0.000	Accept
GI -> PBC	0.030	0.569	0.569	Reject
FS -> BI	0.110	2.294	0.022	Accept
PBC -> BI	0.091	2.389	0.017	Accept
PS -> PBC	0.254	4.747	0.000	Accept
ATT -> BI	0.328	7.091	0.000	Accept
LO -> BI	0.245	5.123	0.000	Accept
BI -> AB	0.326	7.408	0.000	Accept

Source: Research result

Evaluation of research results was done through non-parametric Bootstrap analysis. The total number of replacement resampled samples is 5,000 samples and the test results are in Table 3. As illustrated above, there is a hypothesis for the relationship between GI and PBC with a P value of $0.569 > 0.005$, so this relationship is quite weak, so only the hypothesis for this relationship will be rejected.

The research model is built based on the Theory of Planned Behavior (TPB). In addition, we have consulted and discussed four other factors that may have a great influence on the decision of buyers / renters in Vietnam, including “Public Services”, “Government Incentives”, “Financial Status” and “Location”. Overall, this research has provided housing developers in Vietnam insights of people's house-option decision, as well as answer the question of what the real estate market is expecting. Housing developers can use the results of this study as criteria for housing development planning and marketing strategies.

From the findings above, it can be seen that all proposed hypotheses are accepted, which supports the positive interrelationship among variables. Regarding, “Attitude” has the strongest impact (beta = 0.328) on Behavioral Intention, followed by “Behavioral Intention” on Actual Behavior (beta = 0.326).

H1: “Public service” has a positive impact on “Perceived Behavior Control”

With beta = 0.254, the authors conclude that the variable “Public service” has a large influence on the Perception Behavioral Control, so this H1 is accepted. Public services also have an impact on housing search, and public services are confirmed as a criterion to help assess and price home buyers. The study of Al-Nahdi et al. (2015) concludes that public services have no impact on Arab home buying decisions.

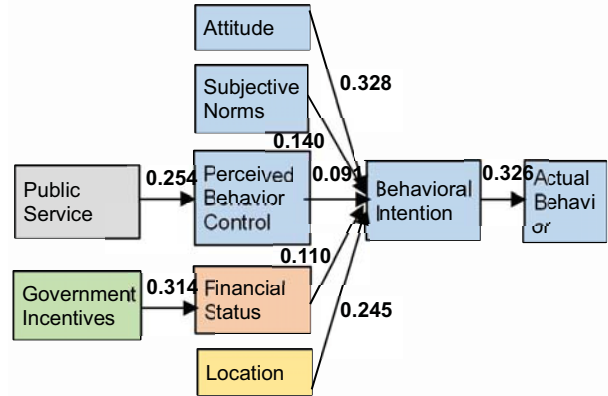


Figure 2: Impact coefficient test results

Economic growth in Vietnam in the past decade has improved people’s living standards significantly. Therefore, Gen Y is increasingly interested in the security situation, green space and utilities, and many standards of quality of life when considering housing options. Therefore, it is not surprising that “Public Service” has a strong impact on “Perceived Behavioral Control”.

H2: “Government Incentives” has a positive impact on “Perceived Behavior Control”

With beta = 0.030, the authors conclude that the variable “Government Incentives” has relatively weak impact on Perceived Behavioral Control, therefore, H2 is rejected. In contrast to this comment, Zheng et al. (2019) showed that Government incentives have an influence on Perceived Behavioral Control and with the help of the Government, the young generation may enjoy financial incentives, which strengthens their intent to rent and stimulates demand for housing.

In Vietnam, policies to support home purchase from the Government are still limited and not widely disseminated. Perhaps this is why Government Incentives has little impact on Gen Y’s Perceived Behavioral Control.

H3: “Government Incentives” has a positive impact on “Financial Status”

With beta = 0.314, the authors conclude that the variable “Government Incentives” has a large impact on “Financial Status”. Therefore, H3 is accepted. This result is in agreement with the conclusion that through the Government incentives, young consumers can benefit from additional economic to partially offset the price of green housing by the research of Liu et al. (2022).

In Vietnam, low-income people are still able to own a government-owned home with social housing in

government-managed projects or with financial subsidies from the government.

H4: “Attitude” has a positive impact on “Behavioral Intention”

With $\beta = 0.328$, “Attitude” is positively associated with Behavioral Intention. Therefore, H4 is accepted. The result is consistent with the attitude statement that refers to the extent to which a person can judge favorably or negatively based on objects, people and events of the author Mostafa (2007). The results are also in agreement with Mostafa's statement about the positive relationship between attitudes and behavioral intentions that has been established in many cultures. According to Kotchen and Reiling (2000), attitude predicts behavior and attitude is a psychological emotion that is oriented through consumer evaluation (Chen et al., 2014). The above statements are in agreement with the conclusions of the study that the authors made.

It can be understood that people who have an optimistic attitude about a living space (be it for sale or rent) will be more likely to choose that place. The reason is that a good impression and strong will increase the likelihood of a person carrying out his intentions. On the other hand, if the living space does not meet expectations, or a person has no idea of living in such a place, they will not decide to invest in housing or rent there.

H5: “Subjective Norms” has a positive impact on “Behavioral Intention”

With $\beta = 0.140$, the authors conclude that the variable “Subjective Norms” has a certain impact on Behavioral Intention. Therefore, H5 is accepted. The result is in agreement with many previous conclusions of the study, in which can be mentioned in the study of Ajzen (1991) as it states that subjective norm refers to social pressure to decide to perform or not to perform the behavior or it can be understood that subjective norm is that the attitudes of others have an impact on the attitudes of others that influence the customer's decision to choose and buy a product. Subjective norms positively affect consumers' intention to choose a home. Another study was done in China by Zheng et al. (2019) also agrees that young people's choice to rent a house is positively influenced by the subjective norm factor.

In Vietnam, the authors have not found a specific study showing the correlation between Subjective Norms and Behavioral Intention. The conclusion "Subjective norm" has a positive impact on the behavioral intention of the authors is a new factor in Vietnam.

H6: “Perceived Behavioral Control” has a positive impact on “Behavioral Intention”

With $\beta = 0.091$, the authors conclude that the factor "Subjective norms" has an impact on Behavioral Intention. This conclusion is consistent with the suggestion of Ajzen (1991) that perceived behavioral control is the decisive factor in behavioral intentions.

This means the opinions of one's significant others (i.e., one's family, close friends, colleagues...) has a strong direct relationship with one's decisions. If significant others believe a living space is advantageous, one would share the same opinion. Normally, a decision would not be made solely on one's own, as people have a tendency to refer to others' suggestions.

H7: “Financial Status” has a positive impact on “Behavioral Intention”

With $\beta = 0.110$, the authors conclude that the variable “Financial situation” has a relative impact on behavioral intention, so H7 is accepted. The authors' conclusions are in agreement with relatively many statements of previous studies, such as the study of Kurniawan et al (2020), which stated that financial factors are, respectively, confirmed to have a positive impact on the intention to buy a home of Gen Y in Indonesia and Ho Chi Minh City. However, the research team's results were inconsistent with the proof that financial ability could not explain Gen Y's decision to buy a house in Ho Chi Minh City.

Hence, with the abovementioned conclusion on the relationship of Financial Status and Behavioral Intention, Gen Y people in Vietnam with lower income have limited choices, allowing them to choose living spaces at a lower range of prices. People earning higher incomes would have more accommodation choices, and they can decide on which space to choose. However, a higher income level does not mean one would go for higher priced choices.

H8: “Location” has a positive impact on “Behavioral Intention”

With $\beta = 0.245$, “Location” serves as a strong determinant for “Behavioral Intention”. As a result, H8 is accepted. This result is in agreement with numerous previous studies. The research has shown the relationship between home location and behavioral intention to choose a type of housing, such as Kaynak and Stevenson (1982) agreeing that location is one of the factors that have a strong influence on housing decisions of Canadian citizens. Previous researchers have also reviewed the premise research papers and proposed the hypothesis "Home location affects customers' decision to buy a house" and proved this hypothesis to be completely correct.

In short, location indicates the convenience of a space in terms of transportation. If an accommodation is located near

convenience complexes which comprise hospitals, banks, markets, etc., it will facilitate the living of people staying in that neighborhood. Traveling too far for some basic demands is not favorable, which induces people to choose somewhere in a beneficial area.

H9: “Behavioral Intention” has a positive impact on “Actual Behavior”

With $\beta = 0.326$, the authors conclude that “Behavioral Intention” has a great influence on Actual Behavior. Therefore, H9 is accepted. This conclusion is also in agreement with the statement of intention to perform the behavior as the larger behavioral intention is, the more likely the behavior will be performed (Zheng et al., 2019). In this study, the actual behavior is the decision to choose the type of housing, and when the intention is more certain, it is easier to make a decision.

6. Contribution

This study aims to determine the driving factors affecting the decision on housing options. The theoretical framework deployed regards influences of the seven independent variables: (i) Attitude, (ii) Subjective norms, (iii) Perceived behavior control, (iv) Financial status, (v) Location, (vi) Public services, and (vii) Government incentives and from that intention to Actual behavior. Research results showed that the effect of ATT, SB, PBC, FS, and LO are factors on the behavioral intention that was positive and significant, indicating that when a consumer has an intention to choose a residence option, they will be likely to consider these factors before executing their decision. However, all hypotheses were supported except H2 concerning the impact of Government Incentives on Perceived Behavior Control, implying that people’s ease of choosing housing options will not be affected by the Government’s policy and subsidiary on buying or renting any type of house. With these findings, we hope to deliver new theoretical contributions to the research topic of real estate.

This research has quantified the effect of seven independent variables in the proposed model to recognise the importance to the “Actual Behavior” variable. Based on Theory of Planned Behavior (TPB), the authors analyzed the intention and behavior of individual homebuyers with 3 independent variables including "Attitude", "Subjective Norm" and "Behavior Control".

In addition, the authors have consulted and discussed to come up with 4 other factors that are likely to affect the decision of home buyers/borrowers, including: "Public Services", "Government Incentives", "Financial Status" and

“Location”. Thus, the model includes 7 factors affecting the customer’s housing-decision. The proposed model is used to survey, test and draw final conclusions about the impact on people’s decisions.

Research results have shown that, "Public service" and "Government Incentives" respectively have a strong impact on "Perceived Behavioral Control". However, the two factors that have the strongest impact on "Behavioral intention" are "Attitude" and "Location". The final conclusion of the study contributes to providing a clearer understanding of the causes affecting the final decision of homebuyers/renters and suggests some meaningful implications for homebuyers and investors and Government.

Especially, it helps real estate investors understand and improve the ability to meet the demand of customers. Based on the results, some recommendations are proposed. Investors should focus on “Public Service and Environment”, actively develop and enhance those factors to attract people to their products because people are more and more concerned about the quality of living environment. Real estate businesses can also focus on developing other factors such as space, design or utilities to increase the attractiveness of the land if there is no advantage in terms of location. In addition, financial reasons have relatively little impact compared to other variables, which is evident in the demographics section. However, to expand the potential customers, investors should consider a number of ways to provide financial support such as extending the installment period and simplifying home loan procedures.

7. Conclusion and Implication

Through the analysis above, the authors have discussed and synthesized a number of recommendations based on each variable in the research model. These recommendations help improve understanding and positively influence Gen Y's decision to choose housing type, and help real estate businesses understand the trends and desires of people.

7.1. For The Buyers/Renters

According to the results of the study, the variable “Attitude” has the strongest impact on the intention to choose the type of housing. The results of data analysis show that the majority of people who were born between 1981 and 1996 choose this type of housing based on subjective reasons such as having a positive perception of the type of housing, understanding current trends, and the utility of each house. type and preferences. However, the chooser in Gen Y should consider other objective factors to consider carefully before making a final decision. Buying/renting a

house is one of the very important things, helping to stabilize personal life and at the same time promoting the development of the community economy. Therefore, if your decision-making depends too much on your own views and attitudes, the type of housing chosen may not be suitable for your financial situation, location, public facilities...

7.2. For The Investors

“Public Service” has a strong impact on “Perceived behavioral control” in the buyer's decision. That means Vietnamese millennials are more and more concerned about the quality of the living environment, green space and amenities, pet conditions, infrastructure, neighbors, regional security situation and the impact on the environment. of the noise around the living area... Therefore, investors should focus on these issues, actively develop and enhance those factors to attract people in this generation to their products. In addition, space for play, entertainment, sports, pet-raising conditions... also need to be considered more carefully to suit each specific type of housing.

“Financial Status” has a relatively large impact on “Behavioral Intention” housing type. Financial reasons have a certain impact when compared with the effects of other variables in the model. With modern thinking and foresight, respondents often focus on future benefits rather than the money to spend to own a type of housing. This is clearly shown in the survey when more than half of the respondents are renting instead of buying a house. This trend is attributable to the fact that renting is an affordable option for people aged from 26 to 41 (people born from 1981 to 1996). So finance is not entirely a big concern in the case of Vietnam. However, in order to expand the potential customer file, investors should consider a number of ways to provide financial support such as cooperating with credit institutions to support buyers, extending the installment period and simply streamline loan procedures...

“Location” ranks fourth in influencing buyer decisions. The biggest concern of millennials is the balance between work and family life. Therefore, close to convenient locations such as workplaces, schools, relatives' homes, main roads, markets and supermarkets, commercial centers and medical centers... are relatively important for buyers / renters. Therefore, choosing a location for housing development will be very important for investors in attracting potential customers. However, the survey results show that 18% of buyers choose townhouses/villas because of the attractiveness of the area. Therefore, besides the location, investors can focus on developing other factors such as space, design or utilities to increase the attractiveness of the area if there is no advantage in terms of location. For example, Vingroup - a large real estate corporation in Vietnam has applied this implication in order

to attract millennials who want to buy / rent a house. The corporation has built a miniature city, which has all the facilities that people need in daily life such as shopping centers, restaurants, supermarkets, schools, hospitals... which helped Vingroup to become one of the largest corporations in Vietnam

7.3. For The Government

As mentioned above, “Public Services” has a relatively large impact on the decision to choose the type of housing of the buyer or renter in generation Y. The government can increase investment in infrastructure and public services (trees and parks, public transport, education, environment...) to improve the living environment and quality of life. the life of the buyers/renters. About “Financial Status”, the Government should encourage and give incentives to financial institutions to develop and design home loan packages with attractive incentives.

Although the hypothesis of the impact of “Government support” on “Perceived behavioral control” in the proposed research model is rejected. This variable has a strong impact on the “Financial ability” of survey respondents. The study showed that a total of 74 out of 445 respondents had a salary of less than 5 million/month, and a total of 91 out of 445 respondents chose the type of “Social housing”. This shows that low-to-middle-income millennials are able to own a home that fully meets their living needs. The most common type of social housing is housing projects sold to government-managed social housing funds. These projects often have attractive tax incentives and purchase prices.

These will help stimulate the demand for home purchases, causing many people to strive to own a home, especially due to the serious effects of the Covid-19 pandemic

8. Limitation and Suggestion Future Researches

The analysis results provide both theoretical as well as practical implications for e-commerce related behaviors and marketing-related campaigns, this study has limitations as well as directions for future researchers.

First of all, differences in cultural aspects across countries have been found to affect the individual expectations and adoptions of online shopping to a greater or less degree, according to previous studies (Ashraf et al., 2014). The respondents in this study are mainly students and office staff in Hanoi, so future research can be applied in many different regions and cultures to be able to conceptualize and determine if there are cultural differences in terms of these behaviors.

In addition, with the barriers of geography and timing, the research subject includes exclusively gen Y in Hanoi. Therefore, the research sample may consist of limitations and lack of explanation capacity to the intention of house-option decision. To overcome these limitations, further research should be conducted all around the country as well as combined online and offline collection data to improve the response diversity.

Finally, recent research takes a horizontal approach, which covers only the sample at a short period. In fact, people's intentions are subject to different short- and long-term effects, thereby making different choices at each point in time. Other research should be conducted through a long period to ensure a reasonable sample in each different time.

Acknowledgement

Funding: This research is funded by National Economics University, Hanoi, Vietnam

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

References

- Adair, A., Berry, J., & McGreal, S. (1996). Valuation of residential property: Analysis of participant behaviour. *Journal of Property Valuation and Investment*, 14(1), 20-35.
- Alam, S., & Sayuti, N. (2011). Applying the Theory of Planned Behavior (TPB) in halal food purchasing. *International Journal of Commerce and Management*, 21(1), 8-20.
- Al-Nahdi, T. S., Habib, S. A., & Albdour, A. A. (2015). Factors influencing the intention to purchase real estate in Saudi Arabia: moderating effect of demographic citizenship. *International Journal of Business and Management*, 10(4), 35.
- Amenyah, I.D., & Fletcher, E.A. (2013). Factors determining residential rental prices. *Asian Economic and Financial Review*, 3(1), 39-50.
- Ajzen, I. (1980). Understanding attitudes and predicting social behavior. *Englewood cliffs*.
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. DOI:10.1016/0749-5978(91)90020-T
- Ashraf, N., Field, E., & Lee, J. (2014). Household Bargaining and Excess Fertility: An Experimental Study in Zambia. *American Economic Review*, 104(7), 2210-2237.
- Blanchard, C., J. Fisher, P. S., & Nehl, E. (2008). Understanding physical activity behavior in African American and Caucasian college students: An application of the Theory of Planned Behavior. *Journal of American College Health*, 56(4), 341-347.
- Blankson, C., Kalafatis, S. P., & Tsogas, M. H. (2000). Positioning strategies in business markets. *The Journal of Business and Industrial Marketing*, 15(6), 416-37.
- Chen, M., & Tung, P. (2014). Developing an extended Theory of Planned Behavior model to predict consumers' intention to visit green hotels. *International Journal of Hospitality Management*, 36, 221-230. DOI:10.1016/j.ijhm.2013.09.006
- Chia, J., Harun, A., Mohd Kassim, A. W., Martin, D., & Kepal, N. (2016). Understanding factors that influence house purchase intention among consumers in Kota Kinabalu: An application of Buying behavior model theory. *Journal of Technology Management and Business*, 3(2), 94-110.
- Chung, C. Y., Yeong, W. M., Peng, L., & Ung L. Y. (2018). Purchase Intention of Residential Property in Greater Kuala Lumpur, Malaysia. *International journal of Asian social science*, 8, 580-590.
- Daly, J. G. (2003). Consumer behaviour in the valuation of residential property: A comparative study in the UK, Ireland and Australia. *Property Management*, 21(5), 295-314.
- Fang, M. (2006). Examining ethical intentions of individual employees of Taiwan from Theory of Planned Behavior. *The Business Review*, 6(1), 257-264.
- Fu, J. R., Farn, C. K., & Chao, W. P. (2006). Acceptance of electronic tax filing: A study of taxpayer intentions. *Information & management*, 43(1), 109-126.
- Gibler, K., & Nelson, S. (2003). Consumer Behavior Applications to Real Estate Education. *Journal of Real Estate Practice and Education*, 6(8), 146-154.
- Gopi, M., & Ramayah, T. (2007). Applicability of theory of planned behavior in predicting intention to trade online: Some evidence from a developing country. *International Journal of Emerging Markets*, 2(4), 348-360.
- Han, H., & Kim, Y. (2010). An investigation of green hotel customers' decision formation: Developing an extended model of the theory of planned behavior. *International journal of hospitality management*, 29(4), 659-668.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New challenges to international marketing*. Emerald Group Publishing Limited.
- Iakovleva, T. L. (2011). Entrepreneurial intentions in developing and developed countries. *Education and Training*, 53(5), 353-370.
- ImanA., Pieng F., & Gan, C. (2012). A Conjoint Analysis of Buyers' Preferences for Residential Property. *International Real Estate Review*, 15(1), 73-105.
- Ing-Long, W., & Jian-Liang, C. (2005). An extension of trust and TAM model with TPB in the initial adoption of on-line tax: an empirical study. *International Journal of Human-Computer Studies*, 62(6), 784-808.
- Jabareen, Y. (2005). Culture and housing preferences in a developing city. *Environment and Behavior*, 37(1), 134-146.
- Kaynak, E., & Stevenson, L. (1982). Comparative Study of Home Buying Behaviour of Atlantic Canadians. *Management Research News*, 5(1), 3-11. <https://doi.org/10.1108/eb027794>
- Khoa, B. T., Ha, N. M., & Ngoc, B. H. (2022). The accommodation services booking intention through the mobile applications of generation Y: an empirical evidence based on TAM2 model.

- Prediction and causality in econometrics and related topics*, 559-574.
- Kim, Y., & Han, H. (2010). Intention to pay conventional-hotel prices at a green hotel – a modification of the theory of planned behavior. *Journal of Sustainable Tourism*, 18(8), 997-1014. DOI:10.1080/09669582.2010.490300.
- Kotchen, M., & Reiling, S.D. (2000). Environmental Attitudes, Motivations, and Contingent Valuation of Nonuse Values: A Case Study Involving Endangered Species. *Ecological Economics*, 32(1), 93-107. [http://dx.doi.org/10.1016/S0921-8009\(99\)00069-5](http://dx.doi.org/10.1016/S0921-8009(99)00069-5)
- Kueh, C. C., & Chiew, F. H. (2005). Factors influencing house buyers' purchasing decision. *Research Reports, Institute of Research, Development and Commercialization, Universiti Teknologi MARA*.
- Kurniawan, C., Dewi, L. C., Maulatsih, W. & Gunadi, W. (2020). Factor influencing housing purchase decisions of millennial generation in Indonesia. *International Journal of Management*, 11(4), 350-365.
- Liu, T., Chen, L., Yang, M., Sandanayake, M., Miao, P., Shi, Y., & Yap, P. S. (2022). Sustainability Considerations of Green Buildings: A Detailed Overview on Current Advancements and Future Considerations. *Sustainability*. 14. 14393. 10.3390/su142114393.
- Manivannan, P., & Somasundaram, M. (2014). Purchase of Residential Flats - Factors Influencing the Decision of Buyers in Selected Cities in Tamil Nadu. *International Research Journal of Business and Management*, 7(9), 67-73.
- Mathieson, K., (1991). Predicting user intention: Comparing the technology acceptance model with the theory of planned behavior. *Information System Research*, 2(3), 173-191.
- Mariadas, P. A., Abdullah, H., & Abdullah, N. (2019). Factors affecting purchasing decision of houses in the urban residential property market in Klang Valley, Malaysia. *e-BANGI*, 16, 1-9.
- Marshall, A. L., & Wolanskyj-Spinner, A. (2020, June). COVID-19: challenges and opportunities for educators and generation Z learners. In *Mayo Clinic Proceedings*, 95(6), 1135-1137. Elsevier.
- Mostafa, M. (2007). Gender differences in Egyptian consumers' green purchase behaviour: The effects of environmental knowledge, concern and attitude, *International Journal of Consumer Studies*, 31(3), 220-229, <https://doi.org/10.1111/j.1470-6431.2006.00523.x>
- Mwfeq, H. (2011). Factors Affecting Buying Behavior of an Apartment an Empirical Investigation in Amman, Jordan. *Research Journal of Applied Sciences, Engineering and Technology*, 3(3), 234-239.
- Numraktrakul, P., Ngarmyarn, A., & Panichpathom, S. (2012, June). Factors affecting green housing purchase. In *17th International Business Research Conference*. Toronto, Canada.
- Ramayah, T., & Omar, O. M. (2008). Behavioral determinants of online banking adoption: Some evidence from a multicultural society. *I-managers Journal of Management*, 2(3), 29-37.
- Rambalak, Y., & Govind S., P. (2017). Determinants of Consumers' Green Purchase Behavior in a Developing Nation: Applying and Extending the Theory of Planned Behavior. *Ecological Economics*, 134, 114-122.
- Ramdane, D., & Abdullah, A. A. (2000). Satisfaction level with Satisfaction level with neighbourhoods in low income public Housing in Yemen. *Property Management*, 18(4), 230-242.
- Rivis, A., & Sheeran, P. (2003). Descriptive norms as an additional predictor in the theory of planned behaviour: A meta-analysis. *Current Psychology: Developmental, Learning, Personality, Social*, 22, 218-233.
- Taylor, S., & Todd, P. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, 6(2), 144-176.
- Teo, T. S., & Pok, S. H. (2003). Adoption of WAP-enabled mobile phones among Internet users. *Omega*, 31(6), 483-498.
- Teo, T., & Lee, C. B. (2010). Explaining the intention to use technology among student teachers: An application of the Theory of Planned Behavior (TPB). *Campus-Wide Information Systems*, 27(2), 60-67.
- Tonglet, M., Phillips, P., & Read, A. (2004). Using the Theory of Planned Behaviour to Investigate the Determinants of Recycling Behaviour: A Case Study from Brixworth. *Resources, Conservation and Recycling*, 41(3), 191-214.
- Wise, D. K. (2006). Predicting intentions to use condoms using gender, sexual experience, and the Theory of Planned Behavior. *American Journal of Health Education*, 37(4), 68-97.
- Xiao, Q., & Tan, G. K. R. (2007). Signal extraction with kalman filter: A study of the Hong Kong property price bubbles. *Urban Studies*, 44(4), 865-888.
- Yam, L. H. S., & Mcgreal, W. S. (2010). House-buyers' expectations with relation to corporate social responsibility for Malaysian housing. *International Journal of Housing Markets and Analysis*, 3(2), 132-145.
- Yusliza, M., & Ramayah, T. (2011). Explaining the Intention to Use Electronic HRM among HR Professionals: Results from a Pilot Study. *Australian Journal of Basic and Applied Sciences*, 5(8), 489-497.
- Zhang, L., Chen, L., Wu, Z., Zhang, S., & Song, H. (2018). Investigating Young Consumers' Purchasing Intention of Green Housing in China. *Sustainability*, 10(4), 1044. DOI:10.3390/su10041044
- Zheng, S., Cheng, Y., & Ju, Y. (2019). Understanding the Intention and Behavior of Renting Houses among the Young Generation: Evidence from Jinan, China. *Sustainability*, 11(6), 1-18. DOI:10.3390/su11061507
- Żróbek, S., Trojanek, M., Żróbek-Sokolnik, A., & Trojanek, R. (2015). The influence of environmental factors on property buyers' choice of residential location in Poland. *Journal of International Studies*, 7(3), 163-173, DOI:10.14254/2071-8330.2015/8-3/13