Factors Influencing the Decision to Choose the Condominium Project near the Sky Train Station of the Non-registered Population in Bangkok

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Abstract

In this paper, the objective of this research was to study the factors influencing the decision to choose condominiums near the sky train stations of the non-registered population in Bangkok using primary data from survey research, which were collected from March 2021 to June 2021 and were estimated by using Binary Logit Model.

It was found that the factors influencing the decision to choose the condominium near the sky train station at the statistically significant level of 0.01 were age, a negative influence on the probability of choosing a condominium near the sky train station, and divorce status, a positive influence on the probability of deciding to choose the condominium near the sky train station, comparing with those who are single individuals. Additionally, those who have a bachelor's degree (edu) had a negative influence on the probability of deciding to choose the condominium near the sky train station, compared to those who have education below a bachelor's degree. Moreover, a person who is an employee of a public limited company (occup) has a negative influence on the probability of deciding to choose the condominium near the sky train station compared to civil service careers. Furthermore, the number of private hire cars (freq_taxi) and the housing price per square meter (price_sqm) had a negative influence on the probability of deciding to choose the condominium near the sky train station, but the residence without a pool (no pool) had a negative influence on the probability of deciding to choose the condominium near the sky train station. Factors with a statistically significant level of 0.05 were self-employed persons and other occupations (occup) had a negative influence on the probability of choosing the condominium near the sky train station compared to civil service careers. Likewise, travel time to the workplace by the sky train (time_bts) had a positive influence on the probability of deciding to choose the condominium near a BTS station, and the distance from residence to a shopping mall (dist_mall) had a negative influence on the probability. The factor with statistical significance at 0.10 was travel time from residence to workplace by taxi (time_taxi), which had a positive influence on the probability of choosing the condominium near the sky train station.

Keywords: Condominium, Sky train station, non-registered population, Bangkok

1. Introduction

Currently, Bangkok is the economic, trade, and education center of Thailand. As a result, people from provincial areas moved to live in Bangkok which causes Bangkok to become the most densely populated province in Thailand. The population who moved to live in Bangkok will be work and educational objectives. Additionally, people who have not moved their names in the house registration to live in this area, such groups are referred to as "passive populations" and can be classified into 2 types, namely, the Non-registered Population and the Commuter Population (Thailand., 2020). For the non-registered population, they will stay overnight in the area of Bangkok and the latent population at daytime will come to work in Bangkok and return to live according to the household registration in that province. The non-registered population in Bangkok needs to choose a residential location in Bangkok, but the commuter population does not live in Bangkok. At present, most of the residences in Bangkok are developing projects in the form of condominiums. It is found that land prices in Bangkok are so high that those who want to buy housing cannot afford to buy, which causes the change in behavior from buying a house to a condominium instead because it is cheaper than buying a house. As a result, real estate developers have developed a large number of condominium projects in the Bangkok area for sale during the

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past period. Condominium projects can be divided into 2 main locations, which are condominium projects near both BTS and MRT stations (Bureau, 2020), condominium projects that are not more than 500 meters away from the sky train stations, and condominium projects that are outside BTS and MRT lines are condominium projects that are located more than 500 meters from the sky train station. Condominium-type residences near and far from the sky train station will have a location in the project area in terms of travel, facilities, and environment, which will make the different satisfactions between condominium projects near and far from the sky train station that responds to the convenience of traveling and the amenities of the residents. Besides, the purchase of condominiums in each project also has something to note about the common project costs, facilities within the project, and others.

For the aforementioned reasons, there is interest in choosing a condominium residence located near the sky train and far from the sky train. This study was conducted to study the factors influencing the decision to choose condominiums near the sky train stations of the non-registered population in Bangkok to regulate further policy recommendations for the government and real estate operators.

2. Objectives

To study the factors influencing decision-making between choosing the condominium near the sky train station

3. Materials and Methods

3.1 Theoretical concepts

Willingness to Pay (WTP) is a concept that describes the desire to buy a particular item at different price levels to consume it at different times. The willingness to pay for the purchase depends on their perception of the value and the preference they receive from the product (Wu & Guo, 2021). Consumers' ability to buy products depends on the ability to pay and willingness to pay is a component of demand. It refers to the quantity of that product that the consumer wishes to purchase at any given time at various price levels. The main factors affecting the change in demand are income level, prices of complementary or substitutable goods, taste, number of buyers, and expectations about future price changes. Moreover, the Willingness to Pay concept is rational consumer behavior in purchasing goods to get the most satisfaction or utility under a limited budget. The choice of accommodation is necessary to take into account which are the requirements of the style of accommodation, transportation, facilities, and housing prices to provide satisfaction to homebuyers that lead to housing purchase decisions (Gabe, Robinson, & Sanderford, 2021).

The revealed preference (RP) technique explores decision-making information in current situations which is a decision to choose an event that has already been decided (Richter, 2018). Factors in choosing a place to stay are divided into 3 factors: 1. Factors in the part of commuting to work 2. Factors in the part of accommodation 3. Factors in the part of the location of the residence. By collecting a population sample of 400 people who used the data to analyze the decision to choose a condominium located near the train station, using the Binary Logit Model, two alternatives were identified, namely the choice to choose the residence in the type of condominium far from the sky train station and the choice of deciding to choose the condominium type of residence near the sky train station.
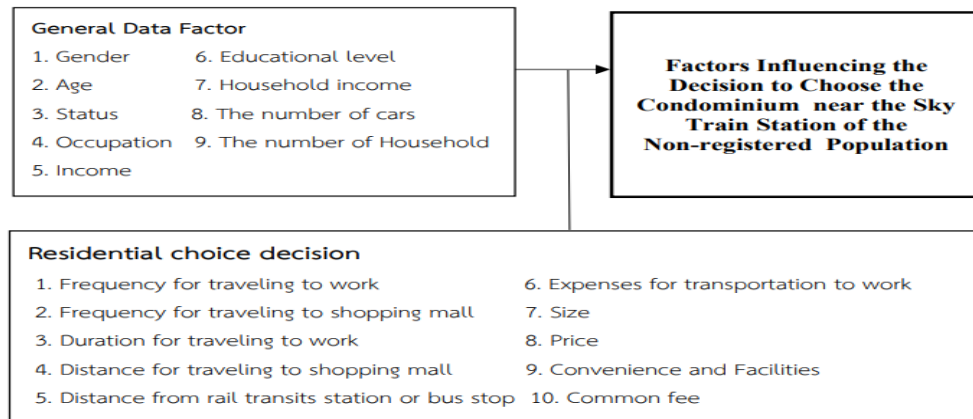
3.2 Conceptual framework

Figure 1 Conceptual Framework

3.3 Research methods

The sampling was performed as a single-stage sampling, which was randomized from the population living in condominium projects near the Green Line sky train station, Silom Line, Blue Line, Purple Line, and the Airport Rail Link. The condominium project will be located no more than 500 meters from the sky train station and sampling from the population living in the condominium project far from the green line station, Silom Line, Blue Line, Purple Line, and the Airport Rail Link. The condominium projects will be located at least 1.00 km away from the sky train station by using Primary Data from the Survey Research, collecting 400 samples from March 2021 to June 2021.

Creating research tools: The structure of the questionnaire of the sample group consists of 2 parts as follows: Part 1: personal data of respondents and part 2: information on behavior in choosing accommodation (Revealed Preference), which consists of 2.1: information in the section of travel to work, 2.2: information in the accommodation section, and 2.3: information in the area of residence.

Data analysis in research:

1. Descriptive statistical analysis: the study was conducted to analyze the data from the questionnaire collection of the people living in condominiums by finding statistical values consisting of mean, standard deviation, and the highest and lowest values of the respondents' personal data.

2. Quantitative analysis: data were analyzed by using Binary Logit Model as a model theory for behavior in choosing accommodation. There is an assumption from the people who choose the residence that they will choose the residential area that produces the highest satisfaction. Therefore, the probability that the shelter selector will choose the residential area only if the utility value of alternative i is greater than the alternative utility (Berry, 2005). Two dependent variables are set 0 and 1, given 0 means the decision to choose a condominium located far from the sky train station and 1 means a decision to choose a condominium residence near the sky train station.

4. Results and Discussion

The results of a descriptive analysis:

The population group used in the study consisted of the group of residents in condominiums near and far from BTS and MRT stations, amounting to 400 sets, which could be statistically displayed as follows:

Table 1 The categorized data from 400 questionnaires of respondents

Variable	The number of people	Percentage
Genders		
Male	165	41.25
Female	235	58.75
Status		
Single	284	71.00
Married	105	26.25
Divorced	7	1.75
widowed	4	1.00
Educational level		
Undergraduate	42	10.50
Bachelor's degree	312	78.00
Postgraduate	46	11.50
Occupation		
Governor officer	36	9.00
Company Limited employee (Public Limited)	103	25.75
Self-employed	54	13.50
State enterprise employee	25	6.25
Company Limited employee	158	39.50
Others	24	6.00

Source: The data collection was from the questionnaires.

Table 1 shows the statistical values of the respondents in gender classification. It was found that there were 165 males, representing 41.25%, and 235 females, accounting for 58.75%. Status, it was found that single status of 284 people, representing 71.00%, marital status of 105 people, accounting for 26.25 %, divorced status of 7 people accounted for 1.75% and widowed 4 people accounted for 1.00%, 42 people accounted for lower than bachelor's degree, equivalent to 10.50%, bachelor's degree 312 people accounted for 78.00%, and postgraduate education 46 people accounted for 11.50%. Occupation: civil servants 36 people accounted for 9.00%, employees of a public company limited 103 people accounted for 25.75%, engaged in private business 54 people accounted for 13.50%, employees state enterprises of 25 people, representing 6.25%, limited company employees of 158 people, representing 39.50 percent, and other occupations of 24 people, representing 6.00%.

Table 2 The categorized data from 400 questionnaires of respondents

Variable	Obs	Mean	Std.Dev	Min	Max
female	400	0.5875	0.4929	0	1
age	400	33.6275	7.8276	19	63
married	400	0.3500	0.6070	0	3
edu	400	1.0100	0.4695	0	2
occup	400	2.5950	1.5660	0	5
inc	400	4.0471	4.4422	1.40	50.00
hh_inc	400	6.0985	0.7150	1.40	100.00
cars	400	1.5575	0.7150	0	5
hh_menbers	400	1.5575	1.0976	1	7

Source: The data collection was from the questionnaires.

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From Table 2, for the monthly income section: the average is 40,470 baht, with the lowest income at 14,000 baht and the highest income at 500,000 baht, the monthly household income: the average is 60,985 baht, with the lowest income households at 14,000 baht and the highest income 1,000,000 baht with an average of 1.5575 units, with households having the lowest number of cars at 0.

The results of quantitative analysis:

A study of factors influencing decision-making between choosing the condominium residence near the sky train station and far from the sky train station. Showing the data from the questionnaire in the descriptive statistics analysis, it was found that the collected data was suitable for the study because the values of each data were not outliers in the data collection. By using econometric analysis methods to estimate the values with Binary Logit Model, the models used in this research can be shown as follows:

Buy a condominium = f (female, age, status, edu, occup, inc, hh_inc, cars, hh_menbers, freq_bts, exp_bts, freq_taxi, exp_taxi, freq_cars, exp_cars, time_bts, time_taxi, time_cars, house_size, price_sqm, no_pool, dist_mall, exp_condo)

Table 3 The analysis result of the sample for the residential location choice as a condominium that was nearby rail transits station in the marginal effect

Number of obs 400		Log likelihood = -108.6273		
Variable	**dy/dx**	**standard error**	**z**	**P>|z|**
female	-0.0289	0.0286	-1.01	0.313
age	-0.0074	0.0025	-2.90	0.004***
status				
Married	0.0130	0.0537	0.24	0.809
Divorced	0.2889	0.0571	5.06	0.000***
Widow	0.0648	0.0892	0.73	0.468
Educational Level				
Bachelor's degree	-0.0997	0.0366	-2.72	0.007***
Postgraduate	-0.1000	0.0662	-1.51	0.131
Occupation				
Company Limited employee(Public)	-0.1556	0.0526	-2.96	0.003***
Self-employee	-0.1232	0.0595	-2.07	0.039**
State Enterprise employee	-0.1007	0.0748	-1.35	0.178
Company Limited employee	-0.0833	0.0509	-1.63	0.102
Others	-0.1576	0.0738	-2.13	0.033**
inc	0.0027	0.0078	0.34	0.732
hh_inc	-0.0007	0.0040	-0.17	0.864
cars	-0.0239	0.0376	-0.64	0.524
hh_menbers	0.0164	0.0313	0.52	0.601
freq_bts	0.0043	0.0032	1.35	0.178
exp_bts	-0.0050	0.0035	-1.42	0.155
freq_taxi	-0.0120	0.0045	-2.64	0.008***
exp_taxi	0.0005	0.0023	0.22	0.824
freq_cars	-0.0020	0.0022	-0.90	0.371
exp_cars	0.0003	0.0007	0.46	0.644
time_bts	0.0027	0.0013	2.13	0.033**
time_taxi	0.0017	0.0009	1.90	0.058*

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Table 3 The analysis result of the sample for the residential location choice as a condominium that was nearby rail transits station in the marginal effect (Continue)

Number of obs 400		Log likelihood = -108.6273		
Variable	**dy/dx**	**standard error**	**z**	**P>|z|**
time_cars	-0.00002	0.0008	-0.03	0.978
house_size	0.0011	0.0017	0.66	0.511
price_sqm	0.0964	0.0049	19.51	0.000***
no_pool	-0.3019	0.1061	-2.84	0.004***
dist_mall	-0.0170	0.0074	-2.29	0.022**
exp_condo	-0.0023	0.0022	-1.04	0.297
Prob > chi2 = 0.0000		**AIC: 0.713**		**Count R2: 0.885**

Source: From calculation

Note: *** refers to significant at $p < 0.01$

　　　 ** refers to significant at $p < 0.05$

　　　 * refers to significant at $p < 0.10$

From Table 3, it was found that factors influencing the decision to choose the condominium near the BTS station at a statistically significant level of 0.01 were age with a probability of 0.74%. Divorce status had the probability of deciding to choose the condominium near the sky train station increased by 28.89 % compared to those who were single. For individuals with a bachelor's degree (edu), the probability of deciding to choose a condominium near the sky train station was 9.97% lower compared to those with a lower bachelor's degree. For a person who is an employee of a public limited company (occup), the probability of deciding to choose the condominium near the sky train station was reduced by 15.56% compared to the person who works for the government. With the number of private hire cars (freq_taxi), the probability of deciding to choose the condominium near the sky train station decreased by 1.20%, while the price of housing per square meter (price_sqm) increased the probability up to 9.64 %, and residing without a pool (no_pool) decreased 30.91%.

The factors with a statistically significant level of 0.05 were individuals who run their own business and other occupations (occup), the probability of deciding to choose a condominium near the sky train station was 12.31% and 15.76%, respectively, compared to a civil service occupation. Travel time to the workplace by the sky train (time_bts), the probability of deciding to choose the condominium near the BTS station increased by 0.27%, and distance from residence to shopping mall (dist_mall) dropped by 1.70%.

The factor with statistical significance at 0.10 was the travel time from the place of residence to the workplace by taxi (time_taxi), the probability of deciding to choose a condominium near the sky train station increased by 0.17%.

Discussion

From the study of factors influencing the decision to choose the condominium project near the sky train station, it was found that with age, older people tend to choose to live farther from the sky train station because they have families that might need larger living spaces. Condominiums that are far from BTS stations will have low prices per square meter. As a result, in the amount of money available, it is possible to buy a condominium with a larger room size than a condominium near a BTS station. In addition, older people will have more needs for privacy, like peace, whereas condominium projects away from the BTS station will have more privacy and tranquility, consistent with the study by de Groot et al. (de Groot, Mulder, & Manting, 2011). The status of divorce was to choose a residence near a train station because there will be no burden on the family to live alone. Therefore, they will choose the residence that focuses on the convenience of traveling rather than choosing the residence that has a lot of usable space. This finding is consistent with the fact that the majority of the respondents were single. Consequently, single people will

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choose the accommodation that focuses on the convenience of traveling without considering the use of space, consistent with the research by Andani et al. (Andani, La Paix Puello, & Geurs, 2020). Moreover, persons with a bachelor's degree (edu), who mostly receive the low salaries during the initial working period, are not able to choose condominiums near the sky train station, because condominiums' prices near the sky train station are higher than the base salary that a person with a bachelor's degree can apply for a bank loan. It forces people to buy condominiums that are far from the train station, where they will have a cheaper price. In the case of renting a residence, the rental price of a condominium near the sky train station will be higher than the condominium far away from the sky train station and the price of renting the condominium near the sky train station equals the amount of monthly installment payment with the bank in the case of buying the condominium far away from the sky train. The purchase of a condominium is considered an asset, consistent with the research by de Groot et al. (de Groot et al., 2011). A public limited company employee (occup) is a person whose work in a large company and business stability, including good welfare with the price of buying and renting condominiums close to BTS stations. A person who can afford the condominium near the sky train station must have a salary of at least 35,000 baht per month, while a person who works in a public limited company at the beginning of the salary is not enough to buy or rent the condominium near the sky train station consistent with the study by De Vos et al. (De Vos, Mokhtarian, Schwanen, Van Acker, & Witlox, 2016). A person who has an unstable income cannot apply for a bank loan to purchase condominiums and most of the aforementioned professionals have to purchase condominiums with cash. Besides, it is difficult for a person to be able to save money to buy a condominium near the BTS station with cash because condominiums near the BTS station are expensive, therefore they choose to buy condominiums that are far from the sky train station because the price is cheaper. In the case of renting a condominium, people who have unstable incomes might choose to rent affordable housing to save money consistent with the research by Guo et al. (Guo, Feng, & Timmermans, 2020). The number of private hire cars (freq_taxi) used by people who choose condominiums near the sky train station will consider traveling by train primarily because it is convenient and quick to travel. The cost of living is another factor in choosing a condominium near the sky train station that people would have to reduce the cost of traveling by private car or private car, consistent with the research by De Vos et al. 2 (De Vos & Alemi, 2020). For the travel time to the workplace by sky train (time_bts), the most convenient option is to travel by the sky train that clearly calculates the travel time and has no traffic congestion like traveling on public roads, consistent with the study by Hsu et al. (Hsu & Guo, 2006). The travel time from place to place by taxi (time_taxi) for people who choose to live in condominiums near the sky train station, there is a higher cost of living in buying or renting a condominium than a condominium that is far from the sky train station which causes individuals opted not to buy a private car and instead opted for public transportation to save costs consistent with the research by Pérez et al. (Pérez, Martínez, & de Dios Ortúzar, 2003). For the residential price per square meter (price_sqm), condominiums close to the sky train stations tend to be more expensive than those far away from the sky train stations, which the person who decides to choose to live in a condominium near the sky train station will take into account the location and the future resale price. It must be admitted that condominiums near the sky train station are preferred by individuals and the price has increased more than condominiums that are far from the BTS station. As a result, there will be more profits in reselling in the future where the loan interest rate is still the same, whether it is the condominium that is close to the sky train station or far from the sky train station, consistent with the research by Jae Hong et al. (Jae Hong, Pagliara, & Preston, 2005). The residences without a pool (no_pool) are one of the key factors that people pay attention to as condominium projects with swimming pools and there will also be a place to exercise which people who choose to live in condominiums near the sky train station considered as a person with a high income. This group of people will need facilities and physical care. For the distance from residence to the shopping mall (dist_mall), people who choose to live in condominiums near the BTS stations have convenient and fast travel to various places. As a result, people do not have to think about the distance to travel to the mall, consistent with the research by Guo et al. (Guo et al., 2020).

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5. Conclusion

From this study, it was found that the preferences of those who decided to choose condominiums might be people around the age of 35 and those who decide to live in a condominium near the sky train station are high-income groups. On the other hand, people who decide to live in condominiums far from the sky train station will be the second income group. Additionally, those who decide to buy the condominium near and far from the sky train station will be a group that has stable job duties and has the idea to continuously work in the present or not move to other areas. Therefore, they decide to buy the condominium. It was also found that those who decided to buy the condominium would be those with the parent's former status who could financially support the decision to buy the condominium. In terms of the trend of changing the population structure from the non-registered population to the population of Bangkok, it was found that the non-registered population would change their status to the Bangkok population from the working factor, which the non-registered population who has a career and works in a stable organization will decide to buy the condominium and have the idea of working until retirement without changing the job, such as state enterprises, government agencies, public limited companies, large limited companies, etc. However, the non-registered population with low income will choose to rent condominiums instead. The single status affects the decision to choose the condominium easier than the marital status. Buying the condominium means that they have decided to change to the Bangkok population without concern for their families and there is no obligation to live in their hometowns.

6. Policy Implications

1. The government should have the policy to allow the National Housing Authority to cooperate with condominium project developers in finding areas near and far from the sky train station in the suburbs to create affordable condominium projects for the non-registered population, which has income less than 25,000 baht and persuading government financial institutions such as Government Housing Bank, Government Savings Bank, etc. to lend loans to low-income people or freelance with uncertain incomes. In addition, financial institutions should have a policy that can allow borrowers to pay more than the debts that must be paid each month. The amount that is paid in excess of each month can be withdrawn for use in the event of an emergency. This policy will be an attraction for borrowers to pay more than they could, which will result in the borrower having a lower interest burden and having the confidence that they can use the overpayment each month for the urgent case.

2. The government should have the policy to help low-income people buy their first homes. The first housing policy includes both newly built and second-hand housing. The policy will help people with interest on the loan as follows: The first loan of one million baht will be charged at the same rate as a 1-year fixed deposit plus 0.75%, while the amount over 1 million baht to 2 million baht will be charged interest on the loan equal to the 1-year fixed deposit plus 1.25% and the credit lines exceeding 2 million baht will be charged on the loan as usual. This policy will help reduce the gap between the poor and the rich by reducing the burden of interest on loans and appropriate to the present that Thailand has an oversupply of deposits in the banking system which stimulates the Thai economy to grow.

3. The government should collect more tax on the registration of private cars registered in Bangkok and use the income from the increased tax to subsidize sky train tickets to be cheaper supporting people who earn wages, a minimum of 331 baht per day in Bangkok. As a result, the low-income people can use the train to travel from the suburbs to work in the inner city of Bangkok conveniently and this could help draw money from high-income groups to help low-income groups by paying taxes.

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