

HOUSING CHAIN AND FACTORS AFFECTING SELECTION OF HOUSING IN THE BANGKOK METROPOLITAN REGION

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Abstract

Industrialization is shifting to out of the Bangkok Metropolitan Region (BMR), while Bangkok is increasingly enhancing the function of service industries. The younger generation of Bangkok is becoming more educated, and changing their lifestyles including jobs, consumption, family image, and housing patterns. Housing development patterns changed drastically after the Asian Economic Crisis from 1997 to 1999. Suburban housing developments became less active, while inner city housing developments became more popular along with mass transit lines such as the sky-train and subways.

This study aims to clarify (1) residents' attributes of the recent most popular private housing types such as detached/twin houses, townhouses, and condominium; (2) important factors for selecting present housing and factors affecting selection behavior; and (3) the changing pattern of residence, the so-called "housing chain" in the BMR.

The data for the research was collected from a household activity survey and questionnaires completed by selected households in typical housing projects in the BMR.

We clarify two types of housing chains. One is the conventional family-based housing chain from rental apartment or parents' house to ownership of a condominium, townhouse, and detached/twin house. The selection of a townhouse or detached/twin house depends on residents' affordability. The other is based on a new living style, wherein the condominium is the final housing goal in the housing chain for those who have a new family image such as DINKS, or those who prefer the single life or are LGBT. This implies that housing policy should set a new policy target to supply small condominiums for single people or couples, not only housing for families.

Keywords: Housing chain, Private housing, New middle class, Bangkok.

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1. Introduction

The population of Thailand has more than tripled from about 20.7 million in 1950 to 66.7 million people in 2010. Meanwhile, the population living in cities has also increased throughout the country. In particular, the population of the capital Bangkok increased about 6 times from 1.4 million to 8.3 million during this period, and the ratio of the population of the country expanded from 6.8% to 12.4%. In the past, Thai society centered on agriculture, and until the 1960s, people lived mainly in rural areas. After that, according to the national economic and social development plan, Thai society has undergone industrialization and shifted from a life based on agriculture to a more urbanized life. Many migrants came from across the country to Bangkok seeking employment opportunities. In the urban area including the Bangkok Metropolitan Region (BMR), housing demand and supply has rapidly increased, and the urban area has expanded in parallel in the BMR (see fig. 1). As such, the housing market and urban spatial structure has dramatically changed in Bangkok.

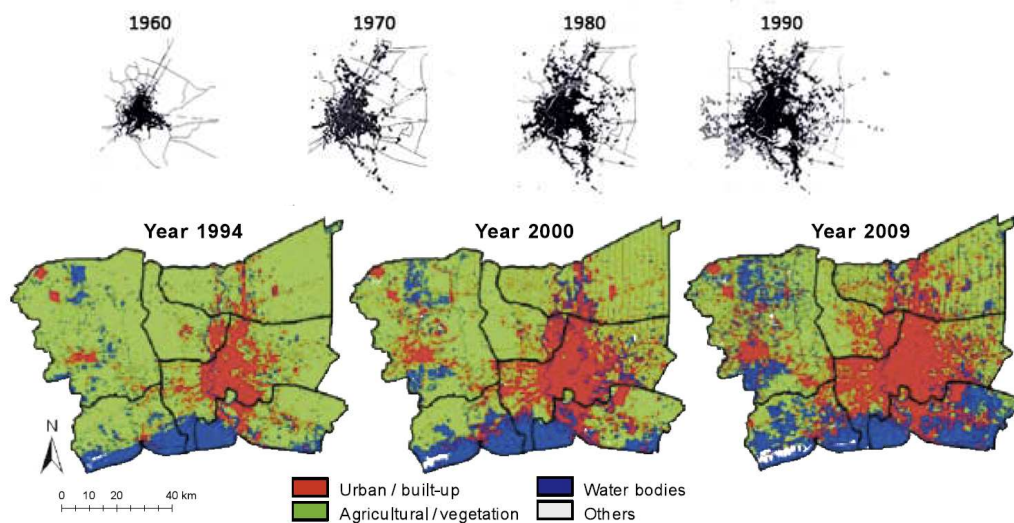


Fig. 1: Expanding urban land use of the BMR

Source: The Bangkok Plan: A Vision for the Bangkok Metropolitan Administration Area, Urbanization and its Influences on the Suburban Landscape Changes in the Bangkok Metropolitan Region, Thailand.

Thailand² has experienced several booms and busts in the housing market. Public housing was first provided after World War II. Since the early 1960s, walk-up apartments were constructed as planned urban development. These were public efforts. In turn, typical private housing development began in the form of providing subdivided residential plots. In the late 1960s, the first turnkey housing units in the form of detached/twin houses were introduced. Townhouses and condominiums followed in the late 1970s. The gigantic housing boom was observed in 1986, lasting until 1997. During this period, more than a million new housing units were constructed.

Today, many new houses are being supplied in the BMR, and competition among housing supply companies is intense. Some private housing supply companies are becoming a trend to narrow the target area for promoting sales of cheaper houses. In Bangkok where urbanization is progressing, the emergence of many young people with a new lifestyle is evident. They prefer living in small residences located in more convenient areas. On the other hand, it seems that the mass supply of small houses for sale produces various problems or dissatisfaction for residents.

²Sophon, P. (2002) Bangkok Housing Market's booms and busts, what do we learn?, The PRRES 2002, p.1

However, it is considered that appropriate housing design can relieve or mitigate some problems or dissatisfaction.

The new trend of urban life in Thailand³ is related to demographics. A declining birth rate has increased the number of single families. Most of the young generation does not want to get married. Reportedly, people with a high level of education tend to have stable jobs to take care of themselves. Another dimension is the increase in the number of single families more than 30 years ago. The higher ratio of single families is one of the characteristics of the demographic structure of Thai society. This demographic condition is a major reason for the increased number of households from 9 million to 20 million over the last 30 years. On the other hand, the average size of the household has decreased from 4.5 persons to 3.3. One reason for the shrinking family size is parents' inability to stay together; thus, the new family lives separately from the previous one.

The changing of society affects lifestyles, especially in the BMR. One new living style is demonstrated through the new pattern in selecting the type and location of a residence. The emergence of new condominiums is one such case. For example, expensive condominiums are mostly bought by foreign businessmen or the aristocracy. They are predominantly located along Sukhumvit and Silom Roads. Nowadays, the size of condominiums is decreasing. They are constructed mainly in areas with easily accessible public transport. The price range is not as high as that for older condominiums. As such, they are suitable for general staff, students, newlyweds, or those in the upper middle class in terms of accommodating the expanding number of single families.

Regarding suburban housing, a suburb is a new frontier form of housing in Bangkok. Today, this area is very popular, especially among small business owners, executive owners of a company, or government officers. Suburban living necessitates having a private car and driving, because the suburbs do not have a good public transportation system. The suburban lifestyle in the BMR equates with a motorized society. Therefore, a policy encouraging people to own a car is currently proceeding. However, people will need to tolerate daily traffic congestion. On the other hand, having a private car facilitates the movement of suburban development and housing supply. Suburban neighborhoods are growing rapidly in Bangkok.



Fig.2: Type of private sector residences by in the BMR
Source: authors

The authors are interested in the factors affecting the selection of different types of housing and the different locations in the BMR. The purposes of this research are to first, analyze the socio-economic and demographic characteristics of selection behavior related to housing types and location; second, analyze the factors and reasons affecting the selection behavior; and third, analyze the moving or changing pattern of residence, the so-called "housing chain" in the BMR. The results of the study are useful in understanding the needs and demands of people who

³Nuttapol, A. (2012) The New Trends in Urban Lifestyle in the Kingdom of Thailand, Public-Interest Incorporated foundation, pp. 5-7,12

want to purchase a new house. Furthermore, the study provides useful information for housing suppliers and decision makers when considering future strategies and policies related to housing.

2. Literature Review

This section provides a review of the literature on the main topics of the study.

2.1 Changing housing market in the BMR

Much literature covers the housing market in Bangkok. For example, JICA⁴(2013) provides recent basic information and data on the housing market in the city. The JICA report highlights issues pertaining to the housing sector: "Especially in the BMR, where the population will be concentrated, diversification of houses and changing housing locations according to lifestyle and life-stage preferences is expected. It is necessary to strengthen the housing market to facilitate the provision of diversified housing and the easy movement of people between housing types and locations."

Many recent studies on new housing developments in Bangkok focus on transit-oriented development (TOD). For example, Varameth^{5,6} et al.(2005, 2010), Saksith⁷ (2008), Sanit⁸ et al. (2012), and Matsuyuki⁹ (2013) studied the influence of condominium development on lifestyle, commuting pattern, and travel behavior using statistical data or questionnaires. "Many residents migrated from the outer areas, dramatically changing their lifestyles. The new urban lifestyle, which is characterized by living in condominiums in the catchment areas of rail transit stations, limiting the scope of travel, and a preference for using public transportation, is diffusing through the young, middle-class population. This new phenomenon is supposed to play a role in restraining urban sprawl and easing transportation problems. It is important to hold this young generation in city center and entrench the new urban lifestyle in the future. In addition, to foster migration from suburban areas, it is essential to attract people to workplaces in the city center."

⁴Japan International Cooperation Agency (JICA)(2013) 'Data collection survey on housing sector in Thailand, Final Report', International Development Center of Japan, Inc. Paracet Corporation, May 2013, p. 65.

⁵Varameth, V., et al. (2005) 'Evaluation of Policy Measure Alternatives for a Metropolis based on TRANUS from the view point of sustainability' *Journal of the Eastern Asia Society Transportation Studies*, Vol.6, pp. 3803-3818.

⁶Varameth, V. & Kazuaki, M., (2010) 'Influence of urban rail Transit on House Value: Spatial Hedonic Analysis in Bangkok' *Journal of the Eastern Asia Society Transportation Studies*, Vol.8, pp. 986-996.

⁷Saksith, C. (2008) 'Rail Transit and Residential Land Use in Developing Countries- Hedonic Study of Residential property prices in Bangkok, Thailand' *Transportation Research Record* 2038, pp. 111-119.

⁸Sanit, P., et al. (2012): 'Evaluating Transit-Oriented Development along Urban Railway in Bangkok, Thailand' *International Symposium on City Planning 2012 Journal*, pp. 111-123.

⁹Mihoko, M., et al. (2013) 'Study on Lifestyle Transformation under the Influence of Rail Transit in Bangkok-Focusing on Condominium Development along Rail Transit' *Proceedings of the Eastern Asia Society for Transportation Studies*, Vol.9 (2013), pp. 1-15.

Fukushima^{10,11}(1996, 2001), Takahashi¹² (2009) and Kaido¹³etal. (2017) researched the characteristics of the housing market in Bangkok, by using mainly statistical data. Regarding housing types and locations in Bangkok, “the typical housing types of Bangkok are condominiums, townhouses and detached houses. Households with two or three members live in condominiums and townhouses in Bangkok. As such, the urban spatial structure of Bangkok exhibits two key patterns, namely a concentric circle of three layers and the West-East area. The middle layer and eastern area has been especially growing in recent years consequent to the construction of public transportation, legal regulation of land use, and terrain factors.”

Research conducted by Nattawut (2013)¹⁴ on housing for low income people in Bangkok, which employed questionnaire, made important recommendations for affordable housing.

2.2 Housing Selection Factors

Alonso¹⁵ (1964) discusses the choice of housing, reporting that the selection of urban living area is strongly correlated with land prices. In the city center, the land is priced higher than elsewhere. Therefore, having a place to live in the city is a high investment. At the same time, land prices will decrease according to the distance away from the center of the city, which leads to lower housing prices. In addition, the price of land is also variable. In the suburbs, while land is cheaper, the cost of travel or transport is higher than for people living in the city center. When choosing a residential area, there are three main factors to consider.

1. The price of housing, relative to income and the ability to pay for housing
2. The style of living to satisfy residents, which is related to family size, and marital status
3. The location of the housing relative to the environment, distance from work, and the physical and environmental characteristics of that area

Based on the theoretical concepts mentioned above, the key elements of housing can be summarized as location, characteristics of the building, community environment, and price.

Rossi¹⁶ (1995) conducted a study on the social psychology of migration, identifying several factors that cause families to change their habitat:

¹⁰Shigeru, F. et al. (1996) 'Transformation and Settlement patterns in Fringe Area of Bangkok Metropolitan region Ex-periencing Rapid Industrialization', the Joint Conference of Research Committee 21 & 43, the International Sociological Association, New Urban Forms, New Housing Forms, Brisbane, Australia, pp. 1-16.

¹¹Shigeru, F. (2001) 'Housing Forms and its Changes in Urban Fringe Area of Bangkok Metropolitan Region Articulating Global Economy', a paper presented at the 1st World Planning School Congress, Shanghai, Tongji University, pp. 1-14.

¹²Kaoko, T. (2009) 'Evolution of the Housing Development Paradigms for the Urban Poor: The Post-war Southeast Asian Context' *Journal of Asia-Pacific Studies (Waseda University)*, no. 13 (October 2009), pp. 67-82.

¹³Kiyonobu, K., et al. (2017) 'The characteristics of housing development in urbanizing Bangkok focusing on housing type and location', *The Journal of Urban Science*, No.22, Meijo University, pp. 10-25.

¹⁴Nattawut, U., et al. (2013) 'Housing density and housing preference in Bangkok's low-income settlements' Urbanization and emerging population issues working paper 12, IIED, human settlements group, pp. 1-63.

¹⁵William, A. (1964) *Location and Land Use: Toward a General Theory of Land Rent*, p.168

¹⁶Rossi, P. H. (1955) *Why families move: a study in the social psychology of urban residential mobility*, p. 18

1. Feeling uncomfortable in the family (Density of the number of residents sharing)
2. Problems with the lessor in the case of a rental house
3. The condition of the residential community

This conclusion is important, because it can identify causal factors that stimulate thoughts to relocate.

Golant¹⁷ (1971) studied human adaptation and migration as a model of migration behavior using the three variables proposed by Walpert¹⁸ (1965). These variables are related to the environment and the individual. In addition, the variables are the relationships between the first two variables, which refer to the expectations and opportunities for each person in society. The conflicting relationship is that if each society and community cannot provide the opportunity each person expects, that community will seek a solution by moving to a new place.

2.3 Housing chain

The idea¹⁹ of the housing chain originated from the Japanese experience. The latter part of the 20th century was an era of rapid urbanization and economic growth in Japan. Many people hoped to buy and live in a detached house with a small garden in the suburbs in the final stage of their lives. The typical dream of housing selection behavior of Japanese people in this life stage was "Jutaku-Sugoroku (housing upgrade board game)." However, the stereotypical dream has begun shifting in recent years, because changing family types, demographic structure, lifestyle, the housing market, and urban spatial structure. "People wanted to buy a detached house in the suburbs in the latter part of the 20th century (in Japan). People dreamed of winning the "Jutaku-Sugoroku," moving from an apartment to municipal housing, condominium, and finally to a detached house in the suburbs (see fig. 3). Recently, the Jutaku-Sugoroku has possibly changed. The number of people who prefer condominiums as a final home is increasing, and quite a few view rented accommodation positively. However, has the completion of the Jutaku-Sugoroku changed? If the change is occurring, people's need for housing will change from the need for a detached house to other types of housing (Toshi-Jutaku-Gakkai, 2005, p. 20). If the Japanese experience is useful and precursory case for developing countries in Asia including Thailand, the idea of Jutaku-Sugoroku in Japan in the latter 20th century is interesting. We call step-by-step housing selection the housing chain. We try to identify a type or types of successive housing selection in Bangkok.



- Start
1. Baby bed
 2. Family one bedroom
 3. Children's room
 4. Dormitory
 5. Live in
 6. Slum
 7. Annex
 8. Under the bridge
 9. Boarding
 10. Low quality apartment
 11. Public single apartment
 12. Municipal housing
 13. Townhouse
 14. Company resident
 15. Dangerous house
 16. Governmental housing
 17. Senior home
 18. Rental condominium
 19. Bond for housing lot
 20. Summer house
 21. House for sale
 22. Condominium
 23. Lot for sale
 24. **Finish-** Detached house in suburbs

Fig. 3: Modern Housing "sugoroku"
 Source: Toshi-Jutaku-Gakkai (2005)

¹⁷Stephen, M G. (1971) Adjustment Process in a System: A Behavioral Model of Human Movement, p. 25

¹⁸Julian, W. (1965) Behavioral aspects of the decision to migrate, p. 111

¹⁹Gakugei, S. (2005) "Toshikyojyu-no-Mirai (The future of living in the city)", Toshi-Jutaku-Gakkai

The originality of this study is the analysis of the questionnaire survey completed by residents living in housing developments constructed in the last five for sale by the private sector in the BMR. We determine the demand for different types of housing and the characteristics of residents in three types of housing. Following this, by analyze housing demand, location, and the housing selection behavior of residents, we reveal the housing chain pattern in the BMR. Our study is original in its focus on newly developed housing for sale. Housing development is rapidly changing the housing market and urban spatial conditions in the BMR. The new middle class tend to buy three types housing, namely as detached/twin houses, townhouses, and condominiums. These types of housing signify the end of housing sugoroku in contemporary the BMR. Furthermore, we consider that their demand strongly affects the structure of the housing market and urban spatial conditions. Our study is important in this context. However, a limitation may be analyzing the whole housing market and total housing chain.

Methodology

3.1 Analytical framework

To examine the contemporary housing chain in the BMR and factors affecting housing selection, we formulated the following analytical framework, focusing on the most popular private housing segment for sale such as a detached/twin house, townhouse, and condominium. We analyze the attributes of the residents of these three housing types and their previous/present house and future housing plan, and factors affecting housing selection and the housing chain.

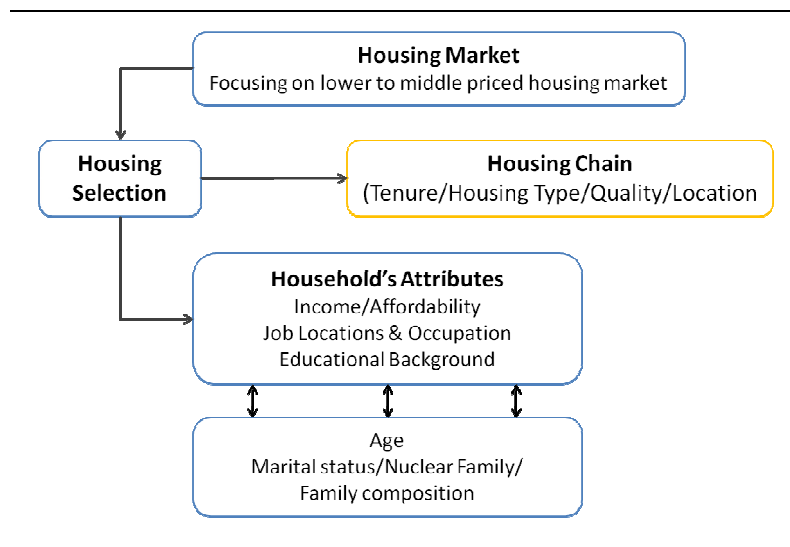


Fig.4: Analytical framework
Source: Authors

3.2 Major surveys

1) Area division of the BMR

The BMR covers an area of 7,761,662 square kilometers. The BMR area has two major rivers, the Chao Phraya River and The Chin River, and a historical and strong business center. The Department of City Planning divides Bangkok into six areas. Bangkok is mainly divided as east and west sides of the Chao Phraya River, and then into three zones: central, middle, and suburban zones. Furthermore, Bangkok six areas: East Central, West Central, East Middle, West Middle, East suburban, and Westsuburban. The suburban areas have 5 vicinities: Nonthaburi, PathumThani, SamutPrakan, SamutSakhon, and NakhonPathom. All divided areas are shown in fig.5.

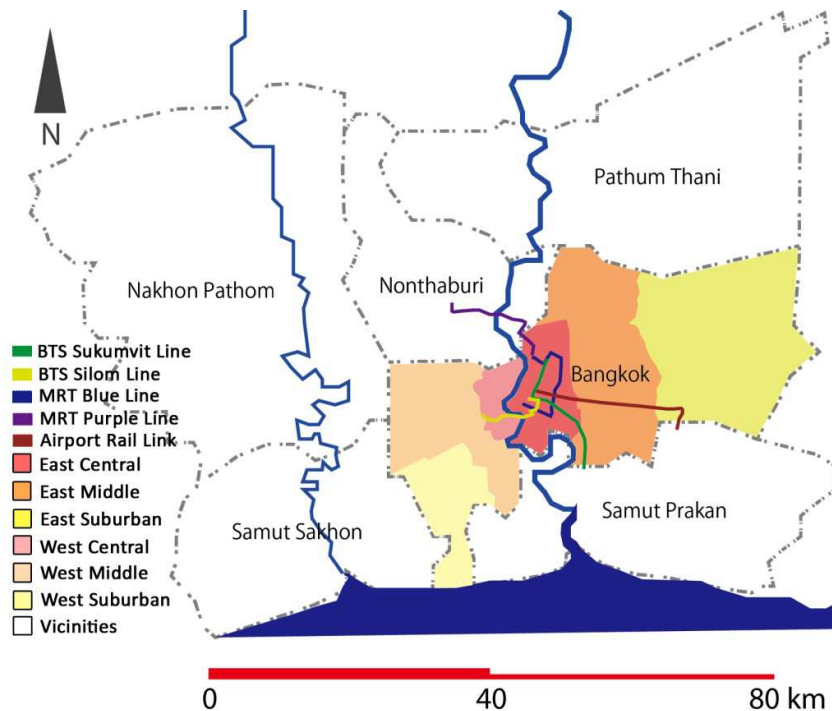


Fig. 5:Area division of the BMR

Source: authors

2) Data collection and characteristics

Case study projects for the questionnaire were selected from the new housing projects developed from 2010 to 2014. The data source is the National Housing Authority. The data shows the number of units, minimum and maximum range of the unit price, and location. Each project was developed to include each of the three types of housing: detached/twin houses, townhouses, and condominiums. In total, 524 housing projects were developed over the five years: 155 detached/twin houses, 195 townhouses, and 174 condominiums. The distribution of the number of units and unit price of the projects is shown in Tables 1 and 2.

Table 1: Number and percentage of projects: Classified by unit number

Unit number	<100	100-199	200-299	300-399	400-499	500-599	600-699	≥700	Total
Detached/Twin house	83 (54%)	50 (32%)	13 (8%)	4 (3%)	5 (3%)				155 (100%)
Townhouse	93 (48%)	44 (23%)	37 (19%)	9 (5%)	12 (6%)				195 (100%)
Condominium	29 (17%)	36 (21%)	20 (11%)	16 (9%)	17 (10%)	13 (7%)	11 (6%)	32 (18%)	174 (100%)

Source: National Housing Authority, The new private sector housing project launched in 2010-2014 in the BMR.

Table 2: Number and percentage of projects: Classified by minimum and maximum price

Price (Million Baht)	>1.00	1-1.99	2-2.99	3-3.99	4-4.99	≥5.00	Total
Minimum							
Detached/Twin house	-	3(2%)	28(18%)	47(30%)	30(19%)	47(30%)	155(100%)
Townhouse	3(2%)	70(36%)	53(27%)	37(19%)	22(11%)	10(5%)	195(100%)
Condominium	22(13%)	95(55%)	32(18%)	14(8%)	2(1%)	9(5%)	174(100%)
Maximum							
Detached/Twin house	-	1(1%)	12(8%)	24(15%)	29(19%)	89(57%)*	155(100%)
Townhouse	2(1%)	45(23%)	62(32%)	25(13%)	34(17%)	27(14%)	195(100%)
Condominium	8(5%)	21(12%)	36(21%)	32(18%)	21(12%)	56(32%)*	174(100%)

*The most are houses are in the upper 5.00 million baht rangewhich are for higher income class.

Source: National Housing Authority, The new private sector housing project launched in 2010-2014in the BMR.

Case study projects for the questionnaire were considered using Table 1 and 2. This study focuses on housing in low to medium price range and the number of housing units. However, the highest percentage is detached/twin houses and condominiums in the maximum price range, selling at more than 5 million baht (Table 2). Then, the group with the next highest percentage was detached/twin houses and condominiums. Finally, for the maximum prices, we selected the range of 4-4.99 million Baht for a detached/twin house, 2-2.99 million Baht for a townhouse, and 2-2.99 million Baht for a condominium. Similarly, the highest percentage groups for each type of housing were selected (the highlighted boxes in Table 3).

Table 3: Number of duplicate projects

Type	Unit Number (Unit)	Min Price (MB)	Max Price (MB)
Detached/Twin house	< 100(54%)	3-3.99 (30%)	4.00-4.99 (19%)
Townhouse	< 100 (48%)	1-1.99 (36%)	2.00-2.99 (32%)
Condominium	100-199 (21%)	1-1.99 (55%)	2.00-2.99 (21%)

3) Selection of projects for questionnaire

Based on the selection of typical projects from all projects from 2010 to 2014, there are 7 detached/twin houses, 6 townhouses, and 5 condominiums, totaling 18 projects. However, some project juristic offices did not permit that the questionnaire be completed. Therefore, the number of selected projects for the questionnaire is 5 detached/twin house projects including 168 housing units, 5 townhouse projects including 206 housing units, and 4 condominium

projects including 550 housing units. In total, 14 projects including 924 housing units were selected. The projects are shown in Table 4 by name, and fig.6 shows the location of each.

Table 4: Name of case study project

No.	Detached/Twin house	No.	Townhouse	No.	Condominium
1	Belle Park Chuanchuen City	6	Lio (Phahonyothin- Watcharapol)	11	The Maple@Ratchada 19
2	Nalin Residence (Hathai Rat)	7	Pruksaville 78 (Chalong Krung- LatKrabang Industrial Estate)	12	The Knight condominium (Sukhumvit 107)
3	Prompat Prime	8	I-Design (Wongwaen- Ramintra)	13	The Park@Prachachuen
4	The TaraRamintra	9	Mind Town	14	Tempo M Tiwanon
5	Lanceo (Ramintra)	10	Thanyada Parkville II (Praksa- Theparak)		

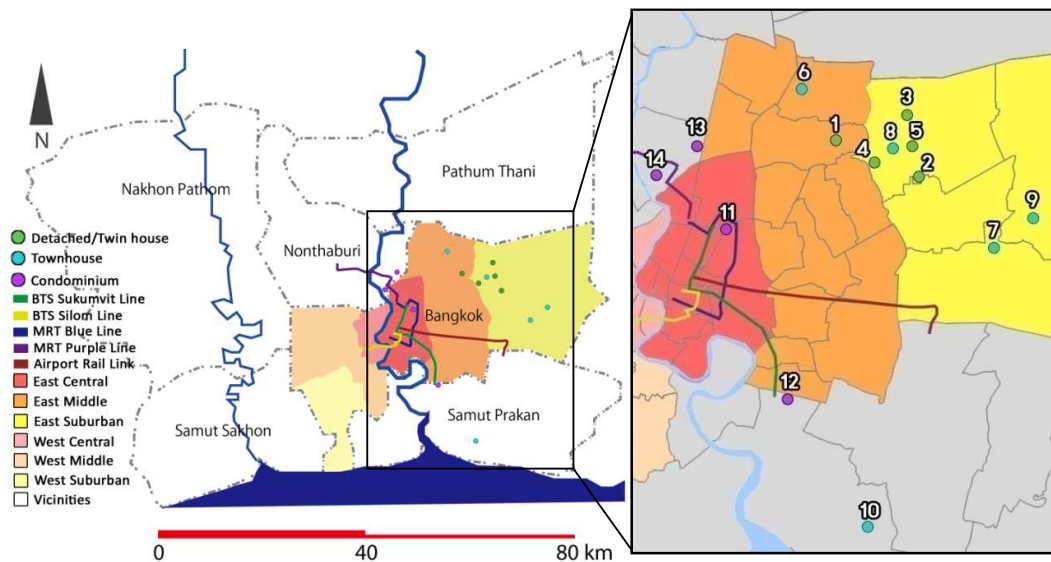


Fig. 6: Location of selected projects
 Source: authors

The number of units of the case studies of 14 projects 168 detached/twin house units, 206 townhouse units, and 550 condominium units, for a total of 924 units were used to calculate the sample size using the formula of Taro Yamane (1973): $n = N/1 + Ne^2$. The parameters had a confidence level of 95%, and level of tolerance (e) of $\pm 5\%$. The necessary sample number was calculated as 287. Then the researchers can get more. Ultimately, the final sample number was 293.

Table 5: Number of questionnaires

Type	Total units	Delivered questionnaire	Collected questionnaire	Percentage (%)
Detached/Twin house	168	115	59	51.3
Townhouse	206	115	65	56.5
Condominium	550	270	169	62.6
Total	924	500	293	58.6

The method for data collection was as follows. The researchers sent letters requesting participation in the questionnaire survey to residents through the project juristic officers. At

three detached/twin houses and townhouse projects, the juristic offices delivered the questionnaires to residents when they entered or left the project sites, and later collected them. At seven detached/twin house and townhouse projects, the researchers directly delivered and collected the questionnaires. For the other cases, the researchers were allowed to deposit the questionnaires in the mailboxes of each unit, which were later returned by the respondents to the researchers. They were deposited at the project juristic offices, and the researcher went to the corporate office later. Eventually, the researchers distributed 500 questionnaires, of which 293 completed questionnaires were successfully collected. The number of distributed questionnaires and percentage of collected questionnaires is shown in Table 5. In total, 58.6% of the questionnaires were collected: 51.3% from detached/twin houses, 56.5% from townhouses and 62.6% from condominiums.

4. Results of the Questionnaire Survey

4.1 Household attributes

In total, 293 questionnaires were collected from 59 detached/twin house units (20.1%), 65 townhouse units (22.2%), and 169 condominium units (57.7%) (see Table 6). As such, more than half the questionnaires were completed by those in condominiums.

Table 6: Respondents classified by type of housing

Detached/Twin house		Townhouse		Condominium		Total	
Freq.	%	Freq.	%	Freq.	%	Freq.	%
59	20.1	65	22.2	169	57.7	293	100

1) Socio-economic characteristics of residents

Another set of interrelated socio-economic variables such as educational background, occupation, and household income influence housing types based on residents' affordability. Residents of all three housing types are highly educated: 80-98% of respondents graduated from university or obtained a university diploma. Furthermore, most are engaged in white-collar jobs. Regardless of housing type, the majority of residents who recently bought housing in the BMR are classified as the new middle class. The highest price range is for detached/twin houses (3-5 million Baht), followed by townhouses and condominiums at 1-3 million Baht. Residents of detached/twin houses earn a higher income than those living in the other two housing types. Among the residents of detached/twin houses, 54.2% earn more than 75,000 Baht per month. In this income bracket, 29.3% live in townhouses and 13.1% in condominiums. Regarding occupational characteristics, a higher percentage (32.2%) of residents of detached/twin houses are self-employed (they may be successful in their own businesses) (see Table 7).

Table 7: Socio-economic conditions of respondents by housing type

Type	Detached/ Twin house		Townhouse		Condominium		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Education								
Primary or lower than primary	1	1.7	2	3.1	0	0.0	3	1.0
Junior high school	1	1.7	4	6.2	0	0.0	5	1.7
High school/ Vocational school	4	6.8	7	10.8	4	2.4	15	5.1
Diploma/Bachelor/Graduate degree	53	89.8	52	80.0	165	97.6	270	92.2
Total	59	100	65	100	169	100	293	100

Type	Detached/ Twin house		Townhouse		Condominium		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Occupation								
Government/State Enterprises officer	8	13.6	6	9.2	35	20.7	49	16.7
Private office worker	19	32.2	38	58.5	86	50.9	143	48.8
Professional	3	5.1	6	9.2	21	12.4	30	10.2
Self-employed	19	32.2	5	7.7	0	0.0	24	8.2
Student	3	5.1	2	3.1	12	7.1	17	5.8
Housewife/not working	4	6.8	2	3.1	11	6.5	17	5.8
Others	3	5.1	6	9.2	4	2.4	13	4.4
Total	59	100	65	100	169	100	293	100
Household of income								
<5,000 Baht	0	0.0	0	0.0	0	0.0	0	0.0
5,001-10,000	0	0.0	0	0.0	4	2.4	4	1.4
10,001-20,000	2	3.4	7	10.8	4	2.4	13	4.4
20,001-30,000	1	1.7	8	12.3	46	27.2	55	18.8
30,001-40,000	2	3.4	10	15.4	29	17.2	41	14.0
40,001-50,000	7	11.9	9	13.8	22	13.0	38	13.0
50,001-75,000	15	25.4	12	18.5	42	24.9	69	23.5
75,001-100,000	14	23.7	7	10.8	4	2.4	25	8.5
> 100,001 Baht	18	30.5	12	18.5	18	10.7	48	16.4
Total	59	100	65	100	169	100	293	100

2) Car ownership

There is a different tendency for car ownership between residents living in detached/twin houses, townhouses, and condominiums. As such, 96.6% and 98.5% of residents of detached/twin houses and townhouses own a car, while only 53.3% of condominium residents own one.

Table 8: Car ownership of respondents

Type	Detached/ Twin house		Townhouse		Condominium		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Car ownership								
Owns a private car	2	3.4	1	1.5	79	46.7	82	28.0
Does not own a private car	57	96.6	64	98.5	90	53.3	211	72.0
Total	59	100	65	100	169	100	293	100

3) Changes in family structure.

A set of interrelated variables of age, marital status, and household structure affect housing types. Detached/twin houses or townhouses are mostly lived in by residents aged in 30s to 40s(79.6-81.5%), married persons(62.7-67.7%), and persons with family. For condominiums, most residents are in their 20s-30s(87.0%), single (92.3%), and living alone or as part of a couple. Regarding gender characteristics, a slightly higher percentage of LGBT (7.1%) people are residents of condominiums.

Table 9: Social status of respondents by housing type

Type	Detached/ Twin house		Townhouse		Condominium		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Age								
<20	2	3.4	1	1.5	0	0.0	3	1.0
20-29	4	6.8	7	10.8	63	37.3	74	25.3
30-39	36	61.0	40	61.5	84	49.7	160	54.6
40-49	11	18.6	13	20.0	22	13.0	46	15.7
>50	6	10.2	4	6.2	0	0	10	3.4
Total	59	100	65	100	169	100	293	100
Marital Status								
Single	20	33.9	19	29.2	156	92.3	195	66.6
Married	37	62.7	44	67.7	13	7.7	94	32.1
Divorce/Separated	2	3.4	2	3.1	0	0.0	4	1.4
Total	59	100	65	100	169	100	293	100
Household Structure								
Head of household	3	5.1	3	4.6	104	61.5	110	37.5
Head of household & Spouse/Partner	8	13.6	13	20.0	34	20.1	55	18.8
Head of household & Spouse/Partner & Child	24	40.7	26	40.0	5	3.0	55	18.8
Extended Family (Three generations)	13	22.0	13	20.0	0	0.0	26	8.9
Extended Family (Others)	8	13.6	5	7.7	0	0.0	13	4.4
Head of household & Brother/Sister	2	3.4	3	4.6	22	13.0	27	9.2
Others	1	1.7	2	3.1	4	2.4	7	2.4
Total	59	100	65	100	169	100	293	100

Relocation to a different housing type occurred alongside a changing household structure. In other words, a change in household structure motivated residents to move. Of the 84.4%, 76.9% of residents of detached/twin houses and townhouse listed extending the family as one reason for moving. Thus, the rate of extended family presently living in these housing types increased from 10.2% to 35.6% for detached/twin houses and from 3.1% to 27.7% for townhouses. Living alone or with a spouse/partner increased the number of condominium residents.

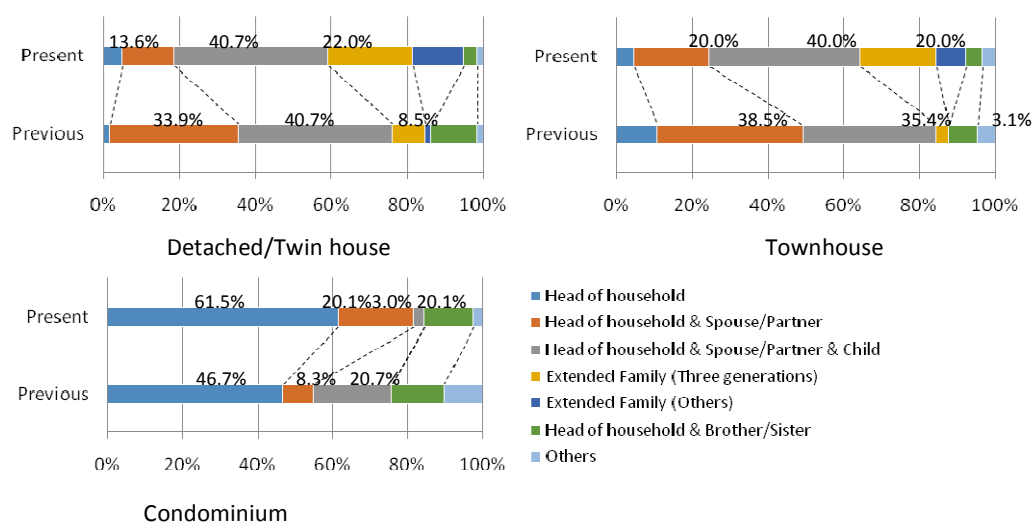


Fig. 7: Change in family type

Source: authors

4.2 Characteristics of housing type and location

Regarding the location of the current housing, detached/twin houses are located mainly in the East Middle and East Suburb; townhouses in East Middle, East Suburb, and SamutPrakan; and condominiums in East Central, Nonthaburi, and SamutPrakan. This indicates that condominiums are mainly located in the central area of Bangkok and in the vicinity areas, because this region is conveniently connected to the central area of Bangkok, providing an easy access. Both detached/twin houses and townhouses are mainly located in the same middle and suburban areas (see fig. 9).

Fig. 8 shows the residence floor layout composition focusing on the number of bedrooms. For detached/twin houses, 100% of residents chose 3 bedrooms. For townhouse, 67.7% have 3 bedrooms and 32.3% 2 bedrooms. Most condominium residents chose the 1 bedroom type (84.6%) followed by a studio (11.8%). This demonstrates different needs for each type of housing.

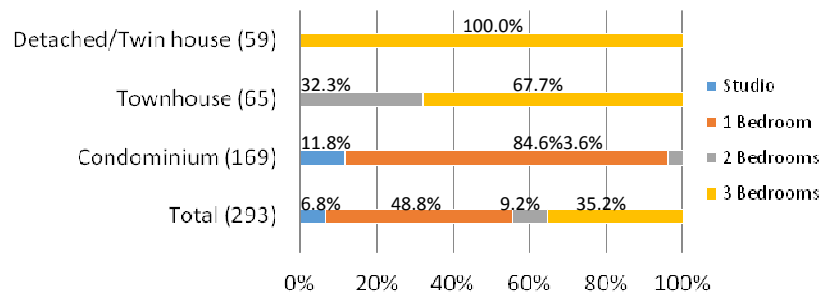


Fig. 8: Residence composition
 Source: authors

Fig. 9 shows the relation between the location of the present and previous house, according to different housing types. The majority of respondents living in detached/twin houses moved from a relatively central location or within the same district. The tendency of such suburbanization is more obvious for the detached/twin houses located in the East Suburban area.

Among respondents currently living in townhouse, the majority (56.0-71.4%) moved from the same district/province. There were 14.3% moving from central to middle and 32.0% moving from middle to suburban that indicating slight suburbanization. Only townhouses located in the East Middle area, the BMR, attracted residents from Nonthaburi (7.1%) and Pathum Thani (7.1%), indicating centralization from the neighboring provinces.

Current condominium residents demonstrate a different tendency regarding the location from where they moved. The majority of respondents living in the East Central area moved in from the same area (58.2%) or East Middle area (29.9%). This implies that condominiums in the central location attracted residents from the central or near central areas. On the other hand, condominiums in the neighboring provinces of the BMR such as Nonthaburi and SamutPrakan attracted residents from various areas of the BMR (64.8% and 74.2% respectively), more than the same province (29.5% and 12.9% respectively). As these condominiums were selected for the survey location and the mass transit line linking to Bangkok, they attract commuters to Bangkok. This clarifies that in addition to detached/twin houses or townhouses, condominiums near mass transit lines become alternatives for suburban housing for Bangkok residents, especially the younger generation.

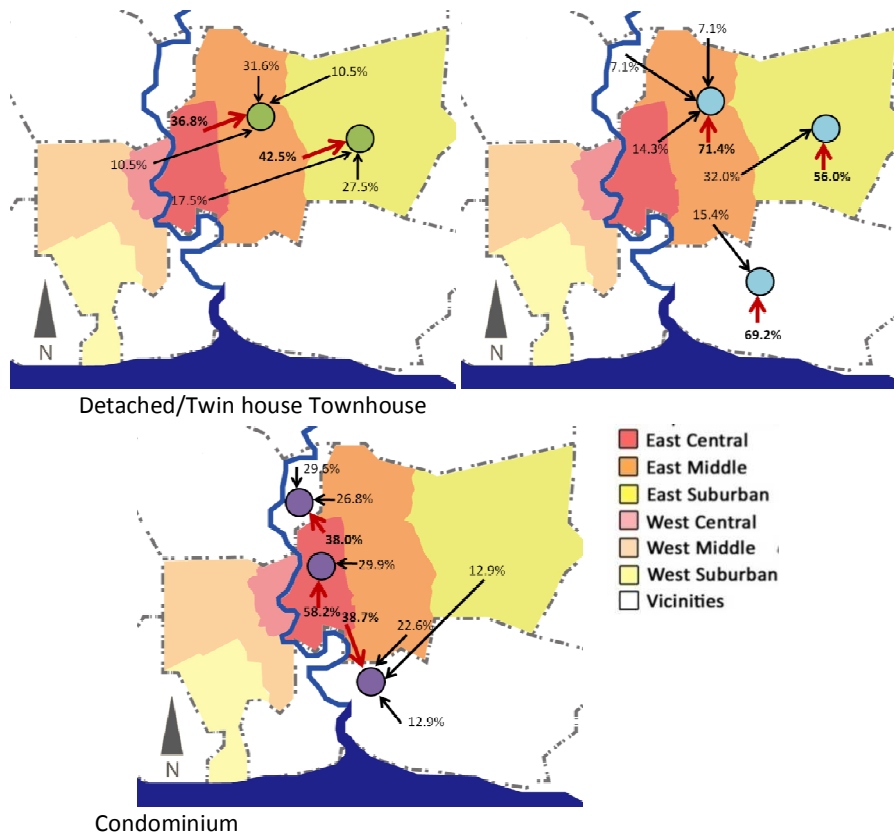
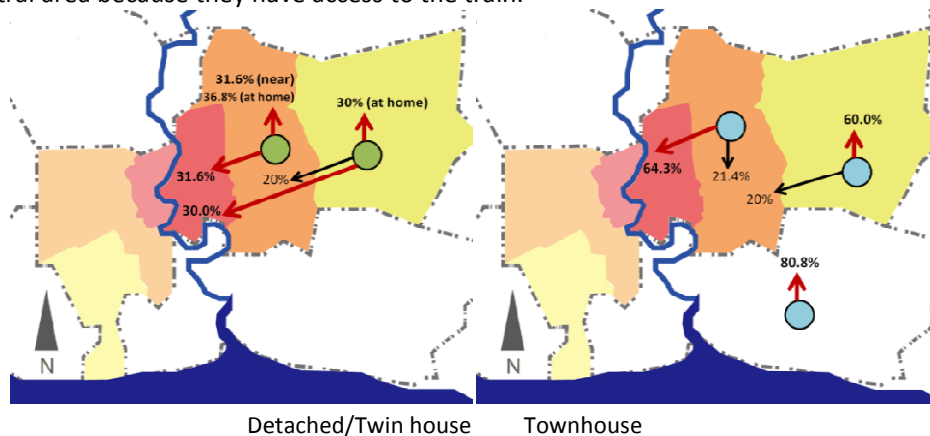
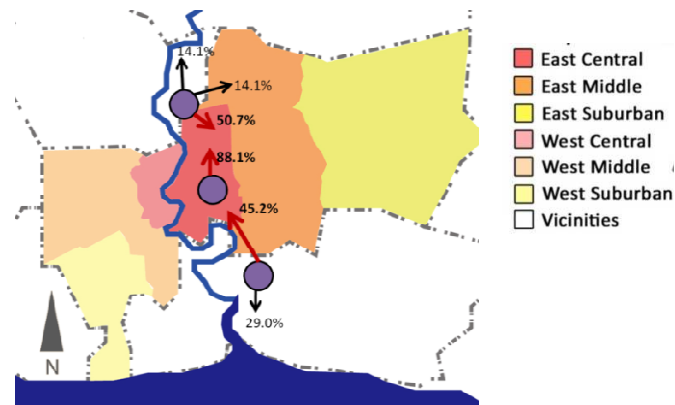


Fig. 9: Location of previous residence by present housing types
 Source: authors

Furthermore, housing type and location influence the workplace. A higher percentage of residents living in condominiums commute to Central Bangkok by public transport or car, while those living in townhouse located in the suburbs or neighboring provinces are more likely to work in the same province or district of the BMR.

These results were found for residents of all types of housing (see fig.10). The difference is that homesteaders work at home (31.6%) or in the middle and suburban areas (30.0%). Townhouse residents living in the middle area work or study in the central area (64.3%), while those in the suburbs of Bangkok and SamutPrakan select housing in areas in which they work or study. Most residents in the condominiums located in the central area, Nonthaburi, and SamutPrakan work in the central area because they have access to the train.





Condominium

Fig. 10: Location of place of work/study
 Source: authors

4.3 Housing chain

1) Housing chain for residents living in detached/twin houses and townhouses (figs.11, 12)

The housing chain for residents of detached/twin houses or townhouses is conventional. About 70% of households living in these housing types form their own family or live with parents and brothers and sisters, forming a family-based housing chain. The pattern is to move from a rental apartment, parents' house, or in a condominium to owning a detached/twin house or townhouse (ownership/rental). Regarding the previous houses, most were townhouse (44.1%), followed by condominiums (23.7%) and detached/twin houses (22.0%). On the other hand, for townhouse residents, the most common previous residence was a rental apartment (35.4%), followed by a townhouse (23.1%) and condominium (10.8%). This reflects the difference in housing affordability of residents between townhouse and detached/twin house. For those moving from a detached/twin house or townhouse to the present types, almost half represented residential changes from the parents' (or brother/sisters') house, while 20 – 30% moved from own-use housing (ownership/rental). In contrast, the majority of residential changes from condominiums were moves from own-use housing.

Home ownership rates for detached/twin houses and townhouses are 96.6% and 88.8% respectively. The choice of a detached/twin house or townhouse depends on residents' affordability. The most popular price range for a detached/twin house and townhouse is 3-5 million baht and 1-3 million baht respectively. Here, the price gap between the housing types is around two to three. Although the residents of detached/twin houses or townhouses achieve a high ownership rate, only one third will remain in their present housing. About 40% are undecided, while 20.3% of residents of detached/twin houses and 29.2% of townhouses express a desire to move to better housing. As a desired residential type, about three quarters of respondents mentioned a detached/twin house. The major reason for moving was a larger area and more usable area. Residents want more comfortable, safe housing and living environment. For those living in detached/twin houses or townhouses, a detached/twin house is acknowledged as the final housing goal in the family-based housing chain.

2) Housing chain for residents living in condominiums (Fig.13)

As residents living in condominiums are quite young (32 years old on average) and mostly single, it is difficult to grasp their housing chain. However, we tried to figure this out by reviewing

previous housing types and their future housing plan, and overlaying the housing chain of residents of detached/twin house or townhouses mentioned above.

Residents living in condominiums moved from rental apartments (45.6%), condominiums (18.3%), detached/twin houses (18.9%) or townhouses (13.0%). Around half of these were the houses of parents (or brothers/sisters). Most condominium residents (88.8%) are owner-occupiers, demonstrating an upward shift from rental apartments or parents' houses (detached/twin/townhouse) to condominium ownership in this housing chain.

The following two patterns emerged for the housing chain based on condominiums. Currently living in a condominium is acknowledged as a step in the family-based housing chain towards ownership of a detached/twin house, and townhouse, or larger condominium unit for the family. The other chain indicates a new living style, where the condominium is the final housing goal in the housing chain for those with a new family image such as DINKS or those who prefer single life or are LGBT. In fact, the questionnaire survey demonstrated that 90.5% and 77.3% of condominium residents aged in their 30s and 40s are single, and 7.1% are LGBT. Regarding their future housing plan, more than one third of the residents (36.7%) want to move to another housing type such as a condominium (17.2%), townhouse (12.4%), or detached/twin house (4.7%), while 30.2% do not want to move from their current condominium. Furthermore, 33.1% are "not sure." The desire to move to a townhouse or detached/twin house indicates that living in a condominium is one step in the conventional family-based housing chain. However, 47.4% of condominium residents ("do not want to move" and "will move to another condominium") will live in a condominium. Many might view the condominium as their final housing goal.

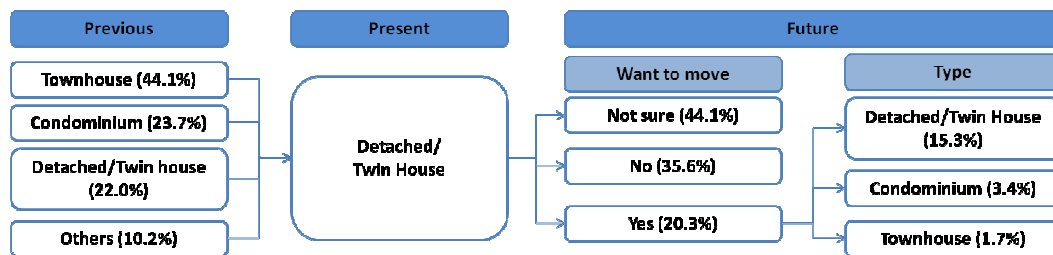


Fig. 11: Housing chain of detached/twin house residents
 Source: authors

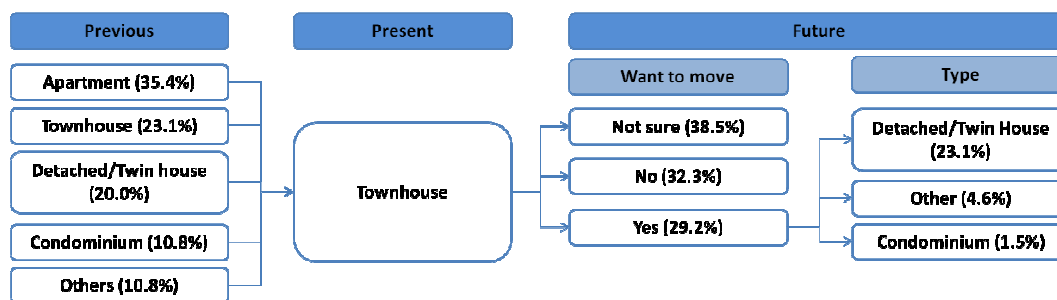


Fig. 12: Housing chain of townhouse residents
 Source: authors

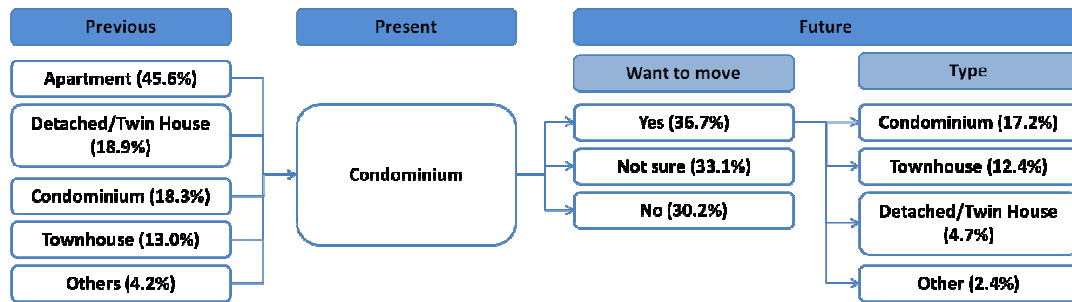


Fig. 13: Housing chain type of condominium residents
 Source: authors

4.4 Housing selection

Important factors for selecting the current house

We examine important factors for selecting the current house, according to housing types. We consider location factors, quality of housing, price/rent, and real estate investment (see fig. 14). Regardless of housing type, most residents emphasize the outdoor environment (87.4%), a livable neighborhood (82.3%), convenient daily shopping (76.1%), convenient public transport (76.1%), and convenience for recreation activities (71.1%) as location factors. Furthermore, the inside environment (87.7%), layout of unit plan (86.0%), size of unit (85.7%), security (84.6%), outside appearance of building (80.2%), quality of construction material (79.2%), number of bedrooms (78.5%), ventilation (78.2%), and access to sunshine (76.5%) were indicated as factors related to the quality of housing. Residents consider a range of factors for housing quality as important. Among the factors pertaining to real estate investment, price/rent (90.4%), ownership (89.1%), and reliable developers (74.7%) are major concerns, while only a few residents (32.4%) value profit through property investment. (The numbers in parentheses indicate the ratio for "very important" and "somewhat important.")

Some factors are prioritized for particular housing types. For example, residents of condominiums place more value on convenience for public transportation (91.7%), recreation activities (82.2%), and common spaces and facilities (77.6%). Because of limited private space, they rely more on common spaces and on-site or outside facilities. Only 53.3% of residents living in condominiums have their own car, and as such, they rely on public transportation more than residents of detached/twin houses or townhouses (more than 90% have their own car). Thus, residents of detached/twin houses consider parking space important (81.3%).

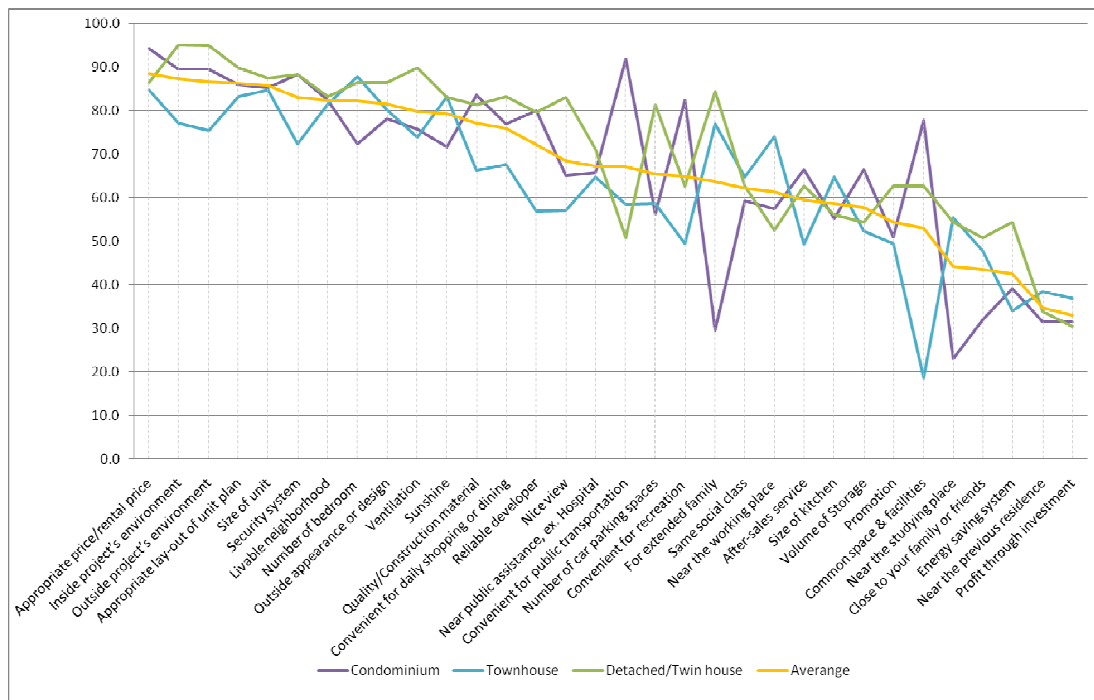


Fig. 14: Important factors for selecting the current house
 Source: authors

5. Conclusion

We examined the socio-economic characteristics of residents living in recently supplied and typical private housing in Bangkok and its surroundings. Regardless of housing type, most residents are highly educated and engaged in white-collar jobs, and characterized as the new middle class. On one hand, the demographic and social characteristics of residents of condominiums differ from those of detached/twin houses or townhouses. They are mostly aged in their 20s or 30s and either single, living alone, or part of couple. They rely more on public transport and enjoy participating in outdoor activities.

We clarified two housing chains. One is the conventional family-based housing chain from a rental apartment or parents' house to ownership of a condominium or townhouse, as a second best housing option of detached/twin house and finally to detached/twin houses. Selection of townhouse or detached/twin house depends on resident's affordability. The other is a new living style of condominium as a final housing goal in the housing chain for those who have new family image such as DINKS or prefer single life or are LGBT. This implies that housing policy should set a new policy target to supply small condominiums for singles or couples, and not only focus on housing for families. Another finding pertains to the factors driving the selection of current housing for the new middle class in the BMR. Regardless of housing type, most residents emphasize the outdoor environment, livable neighborhood, convenience for daily shopping, public transport, and recreation activities as important location factors. Residents consider a range of factors pertaining to housing quality as important, such as the indoor environment, layout of unit plan, size of unit, security, outside appearance of building, quality of construction material, number of bedrooms, ventilation, and access to sunshine. Among the factors for real estate investment, price/rent (90.4%), ownership, and reliable developers are major concerns, while few residents value profit through property investment. Some factors are prioritized for particular housing types. For example, condominium residents place more value

on convenience for recreation activities and common space and facilities, because of their limited private space. Furthermore, condominium residents emphasize convenience for public transport, while those living in detached/twin houses value the number of parking spaces.

Recommendations

We clarified that new middle-class residents have a different family image, which is reflected in their preferred housing styles. One is housing for family and the other housing for singles or couples. They demonstrate different housing selection behavior in terms of housing type, size and room composition, location, access to public transportation, and living environment. As such, housing suppliers should distinguish these two types of housing demand and market them appropriately. The housing policy in Thailand focuses on low-income housing and housing for families. As condominiums for singles or couples are important for the young new middle class, the government should promote transit-oriented urban development/renewal.

For the conventional housing chain for families, townhouses are an affordable housing option for the lower middle class. However, current townhouse projects have encountered problems such as a lack of quality, because developers want to sell these units at a low price. The government should collaborate with private housing associations and the National Housing Authority to formulate guidelines for design and construction. Extending the commuter rail and mass transit line into the BMR suburbs is also important to accelerate the supply of affordable housing/plots in convenient and better living environments. Such developments make it possible to realize affordable and convenient housing with mass transit access.

We suggest that further related research be conducted to clarify current private housing design issues by identifying the mismatch between housing design and the real space usage of residents, considering the developer's view and residents' desires.

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