Chapter 3

Research Methodology

1. Research Design

This research applied quantitative research methodology by using surveys techniques. Following quantitative methodology, the research design employs non-probability techniques to ensure the study is free of bias and ensure the validity of findings to achieve (Creswell, 2003; Kumar, Aaker, & Day, 1999). According to the literature, personal factors, social factors and marketing mixes are relatively well-developed theories and concepts, although controversies of application in different contexts do exist. The continuous development of literature from qualitative research is posited to be strong enough and has called attention to confirm those findings by quantitative methods. The following sections give the details of this research design in support of this study.

2. Population, Samples and Sampling Strategy
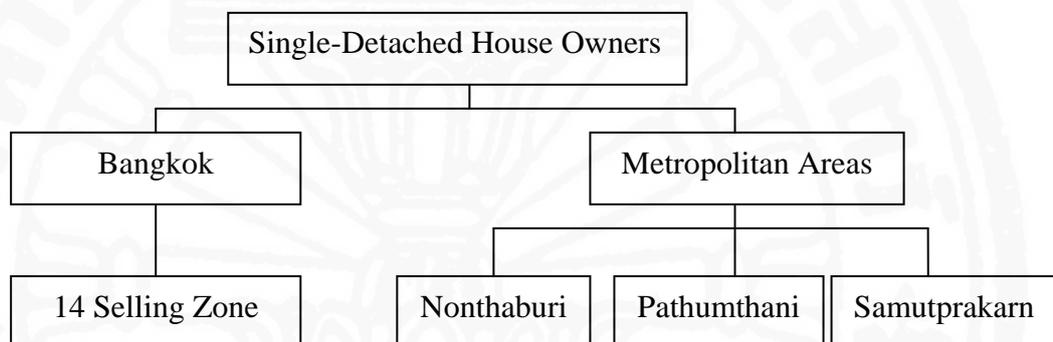
2.1 Population

The population of this research is Bangkok and metropolitan residences who bought a single-detached house from the property project within five years. The study areas include Bangkok and its metropolitan areas, which are Nontaburi, Patumthani, Samutprakarn, Samutsakorn and Nakornpathom.

2.2 Samples

The sample of this study was the single-detached house owners in Bangkok and the metropolitan area. The distribution of the sample was proportioned by the statistics of new houses from housing project transferred and population density. The sample of pilot surveys was 14 homeowners in the Pracha-Outid District, Bangkok. Then, the data collection process was done to 410 samples that were justified by the amount by probability of population. The population of this study was not precisely identified exactly and it was diverse, so this study set the amount of sample at the confidential interval equal to 95% of infinite population, which was

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equal to 400 units. The samples were drawn from the areas in Bangkok and metropolitan provinces, including Nontaburi, Pathumthani and Samutprakarn (see section 3.2.3). There were 407 returned questionnaires, but four of those were incomplete. Thus, 404 questionnaires were used for analysis.

FIGURE 3.1

SAMPLE SIZE AND SAMPLING ZONE CLUSTER

2.3 Sampling Strategy

There were two sample techniques employed by this study, which were area sampling and stratified random sampling. The sample frame was developed from multiple public statistical data such as population, housing registration, housing transfer and housing project development permission data. According to the statistic of population (Department of Local Registration, 2009) and the statistic of housing registration (Department of Land, 2009; Real Estate Information Center, 2009), the change in the amount of population and houses in each province demonstrates different trends over the past 10 years. Hence, this study divided the cluster area into district units and considered population and housing data only within the past five years. Population and housing data revealed a diversity of housing trends and population migration. Firstly, this study screened the population density in each district and selected only the districts with high population density, over 1,000 people per sq.m, because low population density areas usually have a constant or a slightly decrease in population. According to the data from Department of Local Registration

(2009), none of the districts in Samutsakorn and Nakornpathom has a population density over 1,000, so these two provinces were neglected. Then, the data of new housing transferred were used to calculate with proportion of housing project from developers to be the amount of sample of each province as shown in table 3.1.

TABLE 3.1

PROPORTION OF SAMPLE AMOUNT IN EACH PROVINCE FROM NUMBER OF HOUSING TRANSFERRED IN 2008-2009

Province/Location	Total Housing Transferred (Units)	Average Share of House Developer (%)	Amount of Sample (Cases)
Bangkok	15646	58.26%	233
Nonthaburi	7027	26.17%	105
Patumthani	2419	9.01%	36
Samutprakarn	1762	6.56%	26

Source: Adapted from Department of Land (2009) and Real Estate Information Center (2009)

After the amount of housing transferred of each province was calculated, the population density in each district was used to screen the high-density areas. Eight districts from Nonthaburi, Patumthani and Samutprakarn fit this condition. Hence, these eight districts and their density were proportionate to the amount of sample in each district (see table 3.2). However, this analysis was not applicable to Bangkok since population density was over 1,000 people per sq.m. in every district. This study argues that Bangkok is a unique case compared to metropolitan provinces. The population in the inner city has continuously decreased overtime while number of single-detached house registrations from housing project has dramatically decreased recently. At the mean time, population and housing registration in outer Bangkok has increased considerably. This data reflects the change in living zones and property types, especially single-detached homes, from the inner to the outer city. Therefore, this study used the major selling area data of housing project development to separate

the demographical areas (Thai Appraisal Foundation, 2008). There were 14 major zones, which are Jangwattana, Bangsue, Phaholyothin, Ramintra, Saimai, Meanburi, Ratchada-Ratpraow, Srinakarin, Suanluang, Bangna, Suksawat-Prachautit, Rama II, Petchkasem, and Phuttamonthon-Pinklaow, and the samples were divided among those zones equally. In sum, there were 23 samples drawn from each zone in Bangkok.

TABLE 3.2

AMOUNT OF SAMPLE IN EACH DISTRICT PROPORTIONATE BY
POPULATION DENSITY

Province/Location	Population Density	Amount of Sample
	Per Sq.m.	(Cases)
Nonthaburi		105
Mueng	4589.58	45
Bang Krui	1700.98	15
Bang Bua Thong	1872.48	15
Pak Kret	2346.62	30
Patumthani		36
Mueng	1360.90	18
Thanyaburi	1575.49	18
Samutprakarn		26
Mueng	2491	13
Phra Pradaeng	2825	13

Source: Adapted from Department of Local Registration (2009)

3. Research Instrument and Measurement

This research employed a quantitative research method by using self-complete questionnaires. The research instrument was developed from related literature and research results of previous studies. Those results were transformed into quantitative research questions. The questionnaire consisted of four sections: demographical data, housing demand, social network factors and marketing mixes preferences. The demographic section contained questions about personal factors such as gender, age, marital status, education, occupation, income and knowledge about housing assessment, to represent personal human capital for buying decision making. The second section about housing demand asked the demand for the homes' price. The third section was concerned with social network factors. This section consisted of six questions regarding influence, trust in general and trust in house assessment knowledge, and asked the respondents' opinion toward these questions by interviewing six groups of people (see appendix A). The last section asked respondents to rate their level of preference in home buying through seven marketing mixes. The questions in section three and four were based on a Likert Scale and were ranked from one, very little, to five, very much. The measures of this research are as follows.

3.1 Dependent Variables

According to the literature, marketing mixes are comprised of four or seven elements depending on the context of analysis. In general, four marketing mixes are exploited to analyse the general product, while the seventh one applies to services. This study posits the unique product of the housing project in Thailand as a combination of both product and services. Thus, seven marketing mixes, which consist of product, price, place, promotion, people, process and physical evidence, are applied to this study.

Multi-item scales were employed for these seven marketing mixes by using a Likert Scale that contained the following measurements: 1 = very little to 5 = very much. The respondents were asked to choose a number that best represented their preference level of marketing mix items. Factor analysis revealed seven types of marketing mixes, although three of those had relatively low internal reliability.

Therefore, only four types of marketing mixes were used as dependent variables in this study. Those dependent variables were product (alpha = 0.93), physical evidence (alpha = 0.86), promotion (alpha = 0.74) and process (alpha = 0.75).

3.2 Independent Variables

The independent variables of this study were comprised of two theoretical categories: personal factors and social factors. As demonstrated in the literature, personal factors can be considered as human capital because these factors can determine the capability and the tendency of a person in performing various activities. This study examined personal factors of gender, status, age, education, occupation, personal income and housing assessment knowledge. Every personal factor was examined by single-item questions except housing assessment knowledge, which was examined by the multi-item scale.

Another group of independent variables represent the social factors. In accordance with the literature, social factors consist of six types of social network and dimensions. This study examines the effect of social factors through the dimension of trust of the respondents toward six types of social networks that may have influence on buying decision making. The social network scale were formed by the level rated in Likert Scale, from 1 = very little to 5 = very much, in four questions. There is a question which asks about the level of influence. The next two questions asked about trust in general and the other two asked about trust in housing assessment knowledge. Factor analysis showed the consistency of five questions in one scale. The six types of social networks are spouse and children (alpha = 0.97), parent (alpha = 0.92), spouse's parent (alpha = 0.99), relatives and friends (alpha = 0.88), friends with experience (alpha = 0.87) and specialists (alpha = 0.90).

3.3 Validity and Reliability

The test of validity and reliability of the research instrument is crucial in ensuring the accuracy of the measurement. Content validity, face validity and internal reliability are some of the most employed techniques in the literature (Cavana et al., 2001; Ticehurst and Veal, 2000). Face validity is used to test the understanding of language, while content validity is employed to verify the questions and their applicability to the context. Face validity and content validity were confirmed by a pilot survey.

Internal reliability is the degree to which a particular scale is free from random measurement error (Kline, 2005). The single-item approach construct was posited to contain some limitations, especially in the measurement of broad concepts and theories (Nunnally, 1978). Alternatively, the multiple-items approach was argued to suit broad concepts and theories because of larger coverage. As a result, an internal consistency reliability technique was introduced to test the consistency of multiple-items measures. In this study, all variables were entered into an unrotated factor analysis in terms of their fictional categories to determine the number of factors (see Table 4.1 in Chapter four).

4. Data Collection

There were two stages of data collection procedure in this study. Firstly, a pilot study was conducted in order to test this new instrument. A pilot survey was conducted and the reliability of scales and correlation among variables were tested. These were chances of intercorrelation among variables. The results from pilot tests were used to assess variables so the face validity, content validity and internal reliability of instrument could be ensured before data collection. Among a number of quantitative data collection techniques, the questionnaire survey was selected for this study.

Self-completed questionnaires were the research instrument of this study. As the population covered the limited geographical area of Bangkok and its metropolitan provinces, this research employed the personal survey, data collection technique. Although a number of drawbacks of the personal surveys existed such as its relatively high cost, limited geographical coverage and respondent consent, personal survey technique suited this study because of its very high response rate within the limited time available for the study.

TABLE 3.3

STRENGTH AND WEAKNESS OF FOUR NON-EXPERIMENTAL METHODS

	Mailing	**Phone**	**Personal**	**Online**
Cost	Lowest	Low-moderate	High	Low
Speed	Slow	Very fast	Moderate-fast	instantaneous
Response Rate	Low-moderate	Moderate-high	Very high	Various
Geographic coverage	High	High	Limited	High

Source: Adopted from Kumar et al. (1999) and Ticehurst and Veal (2000)

5. Data Analysis

Data analysis techniques employed in this study were: descriptive statistic, factor analysis, reliability analysis, Spearman's rank correlation coefficient and multiple linear regression analysis. Descriptive statistics was used to analyse the data in general. Factor analysis, reliability analysis and multiple linear regression were three main techniques used in this study. Factor analysis was employed to cluster the variables and to confirm the group of personal and social factor variables and marketing mixes.

This study employed Spearman's rank correlation coefficient in an attempt to investigate the correlation coefficient of personal factor variables, which had been collected at many data levels. Spearman's rank correlation coefficient was selected to test the independent variables of this study because; firstly, unlike Pearson's product moment correlation, Spearman's rank correlation coefficient did not require the variables to be only interval scales. Thus, the lower data level was applicable to this analysis. Secondly, Spearman's rank correlation coefficient was suitable in testing the nonparametric measure of correlation, and the linearity of relationships among variables was not assumed. After the analysis of Spearman's rank

correlation coefficient, the variables with high correlation levels would be identified and deleted from the testing of the hypothesis by using multiple regressions. Then, multiple linear regressions tested the relationship and predictability among dependent and independent variables.