

CHAPTER 3: RESEARCH METHODOLOGY

This chapter addresses the methodology, the population and the sampling design, measurement items, and the data collection method and the data analysis techniques used in the study.

Population and Sample

A survey research is used to test the research question and the research hypotheses of the current study (Malhotra, 2007). The sample design is described below:

- Population is Thai and foreign, organizational buyers who purchase Thai gemstones
- Sample is Thai and foreign, organizational buyers who purchase Thai gemstones in the 43rd Bangkok Gems and Jewelry Fair 2009 (held during February 25th – March 1st, 2009)
- Respondents are managers / officers who are responsible for gemstones purchasing tasks in the organization

Following Tiangsoongnern & Vuori (2004), this study employed the 43rd Bangkok Gems and Jewelry Fair as the sampling unit. In other words, this research adopted a non-probability sampling using the judgmental sampling (Zikmund, 2003). According to the

Taro Yamane's Table with the 95% confidence level and $\pm 5\%$ sampling error, 400 responses were expected.

As the population consisted of Thai and foreign gemstone buyers, data collection was conducted using a quota sampling method (Cooper & Schindler, 2006). Table 1 showed that the target population was subdivided into two equal groups of Thai and foreign buyers, with 200 responses were expected from each group. The latter was also separated into four equal subgroups of home-country: North America, EU, Asia and others, with 40 responses were expected from each subgroup. This method has been commonly used by previous buyer behavior studies. For example, in exploring the attitudes of young buyers towards SMS advertising, Van der Waltd, Rebello, & Brown (2009) used quota sampling to divide the population into an equal group of male and female respondents. Similarly, Erffmeyer, Keillor, & LeClair (1999) investigated ethical ideology and perception of Japanese buyers toward different ethical situations by dividing them into subgroups of demographic characteristics. Wu (2007) also adopted quota (and snowball) sampling to explore the relationships among electronic service quality, customer satisfaction, electronics recovery service quality, and customer loyalty when purchasing electronic products from online retailers. Following Parasuraman, Zeithaml, & Malhotra (2005), the scales used in Wu's study (E-Core Service Quality Scale and E-Recovery Service Quality Scale) were assessed using a quota sampling method: one-third of respondents were

asked to evaluate their favorite sites, one-third were asked to evaluate their second-favorite sites, and one-third were asked to evaluate their third-favorite sites.

Table 1: Estimated Quota Sampling Used

Number of Thai Gemstone Buyers	Number of Foreign Gemstone Buyers*			
	North America	EU	Asia	Others
40	10	10	10	10
40	10	10	10	10
40	10	10	10	10
40	10	10	10	10
40	10	10	10	10
Total 200	50	50	50	50

Note:

* Estimated from the Bangkok Gems and Jewelry Fair 2007 Statistics

Data Collection

A structured questionnaire was utilized to collect data. It consisted of two main sections which are biographical data, and purchasing behavior and attitude toward Thai gemstone purchasing. This study employed a convenient sampling method (Zikmund, 2003) which the questionnaire were distributed to the gemstone buyers who visited the 43rd Bangkok Gems and Jewelry Fair 2009 held during February 25th - March 1st. The item “Which of

the following best describe your company type?” with the pre-determined choices of the gemstone dealers, gemstone and jewelry dealers, jewelry retailers, and other company types; was used to ensure that respondent is a representative of organizational buyers, as expected.

Measurement Items

The measures employed were adapted based on peer studies (e.g. Pongyilar & Pongwichai, 2008; Tiangsoongnern & Vuori, 2004; Ward, Girardi, & Tiangsoongnern, 2007). Recommendations of practitioners (e.g. Buncharoen, 2009; JCOC, 2008a, , 2008b; Porncharern, 2007) are also considered.

Based on the objectives of the study, several questions were adopted to identify the biographical profile of respondents: country of residence (company location), number of employees, number of years of experience, and gender. Similarly, questions regarding gemstones type, gemstones lot-types, gemstones qualities that they have bought, regular buying methods and number of times attending gemstones exhibitions in a typical year were employed to address the “What to buy”, “Where to buy” and “How to buy” questions regarding buyer’s purchasing behavior (Kotler & Keller, 2009; Schiffman & Kanuk, 2009).

13 items were used to explore the three variables underlying the buyer's purchasing behavior: the product strategy, the price strategy and the place strategy used by the seller. These items were adapted from peer studies (JCOC, 2008a, 2008b; Tiangsoongnern, 2007; Ward, Girardi, & Tiangsoongnern, 2007). 7 items were adopted to examine the product strategy: "When buying gemstone, I tend to consider about treatment disclosures e.g. heating; authenticity (real); origin; color; clarity; variety of gemstone types offered; and selective available (able to select and buy some parts from the whole gemstone lot). 3 items were utilized to study the price strategy: "I am happy to pay higher price for better quality gemstones"; "sellers should have standard price for same quality of gemstones"; and "seller should offer flexible payment methods (e.g. payment in installments). 3 items were used to investigate the place (distribution channel) strategy: "I always buy gemstones that I can inspect by my eyes (face-to-face contacts)"; "I buy gemstones via online channels"; and "I sometimes buy gemstones via online channels".

The three variables underlying the attitudes of gemstone buyers toward the trust, the satisfaction and the purchase intention were examined using 13 items. 6 items were employed to examine the trust to purchase Thai gemstones. Example items are "I prefer to buy from sellers that have good reputation"; "I buy from old contacts; and "offering return policy within inspection period influences my buying decision". The satisfaction of gemstones buyers were measured using 4 items: "I am happy with gemstones buying from Thailand"; "I am happy to deal businesses with Thai sellers"; "I can make profit on

gemstones buying from Thailand”; “Overall, I am satisfied with buying gemstones from Thailand”. 3 items were employed to examine the purchase intention of gemstones buyers: “I will buy gemstones from Thailand in the next months”; “I may buy gemstones from Thailand in the future”; and “I will buy more gemstones from Thailand”.

In line with previous studies (e.g. Newell & Goldsmith, 2001; Roseman & Kurzynske, 2006; Tiangsoongnern, 2007; Ward, Girardi, & Tiangsoongnern, 2007; Ling, Piew, & Chai, 2010; Ankar & D'Incau, 2002), this study used the 5-point Likert scale (Likert, 1932) to assess respondents' behavior and opinions. The scale requires the individuals to make a decision on their level of agreement with the statement. This is suggested as appropriate scale for self-administered survey method (Hair, Bush, & Ortinau, 2000). The scale descriptors are anchored by “1 = Strongly Disagree”, “2 = Disagree”, “3 = Neither Agree or Disagree”, “4 = Agree”, and “5 = Strongly Agree”.

Data Analysis

Analysis of the data proceeded in various stages and is discussed as follows.

Data Screening

Outliers were screened using results of descriptive statistics to assure that extreme values did not affect the data analysis. The assumptions of normality, linearity and homoskedasticity were tested by viewing scatter-plot diagrams and ensuring skewness and kurtosis values were mostly within specified ranges (i.e. $-1 < \text{skewness values} < +1$, $-2 < \text{kurtosis values} < +2$) (Tabachnick & Fidell, 2001).

The reliability of two studying constructs, the purchasing behaviour and the attitudes of gemstone buyers was evaluated using a reliability coefficient of Cronbach's alpha (1970).

Hypothesis Testing

This research used descriptive statistics, Mann-Whitney U test, *t*-test, and correlation analysis to test the study hypothesis and make the conclusion of the data.

The *t*-test is considered as a commonly used statistical approach to compare the means of continuous variables in two different populations (Coakes & Steed, 2003; Zikmund, 2003). Therefore, this study adopted the *t*-test to determine the difference in the purchasing behavior and the attitudes between two independent groups, Thai and foreign

gemstone buyers. The expected result was articulated by Hypothesis 1 (H1a, H1b, and H1c) and Hypothesis 2 (H2a, H2b, and H2c):

H1a: Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their purchasing behavior toward the products purchased (i.e. gemstone characteristics)

H1b: Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their purchasing behavior toward the price purchased

H1c: Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their purchasing behavior toward the buying channels used

H2a: Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their attitudes toward the trust to purchase Thai gemstones

H2b: Thai gemstone buyers and foreign gemstone are significantly different in terms of their attitudes toward the satisfaction to purchase Thai gemstones

H2c: Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their attitudes toward the intention to purchase Thai gemstones

Use of the independent groups *t*-test analysis has been shown in previous studies (Anckar & D'Incau, 2002; Chen, 2007). For example, Anckar & D'Incau (2002) employed the test

to investigate whether there were significant variations in the willingness to buy between males' and females'. Kishtwaria, Sharma, Sharma, & Rana (2006) adopted *t*-test to determine the difference between awareness level towards consumer terminology and legal laws (e.g. adulteration of food stuff, using deceitful advertisement) and between sex of respondents (i.e. male and female).

Mann-Whitney U test is appropriate for comparing the means of categorical variables in two different populations (Coakes & Steed, 2003; Zikmund, 2003). This test is equivalent to the independent groups *t*- test, however appropriate for testing the data measured on nominal and ordinal scales (Coakes & Steed, 2003). It was therefore used to determine the difference between Thai and foreign gemstone buyers in terms of their buying methods and gemstone types (e.g. Ruby, Sapphire), gemstone lot-types (i.e. loose, single, calibrate), and qualities of gemstones (i.e. high, medium, low) they have bought. Use of Mann-Whitney U test in this study was inline with prior studies. For example, by adopting this test, Santhapparaj & Alam (2005) found that female staffs were more satisfied with their job (measured as a ordinal scale) than the male staffs. North, De Vos, & Kotzé (2003) found the significant difference in opinions of female buyers with regard to the importance of style and price when making decisions to buy apparel products.

Correlation analysis using a Pearson product-moment correlation coefficient is suitable to test the relationship between two continuous variables (Coakes & Steed, 2003; Zikmund,

2003). Therefore, a correlation analysis was employed to test Hypothesis 3 (H3) of the study:

H3: The buyer's purchasing behavior (towards the product strategy, the price strategy and the place strategy used by the sellers) is positively related to the buyer's attitude (shown through the satisfaction, the trust and the purchase intention) towards Thai gemstone purchasing.

Many earlier studies have used the correlation analysis to test a bivariate relationship between two continuous variables or to assure a basic assumption for a further regression analysis (e.g. De Mooij, 2000; B. Y. Kim & Kang, 2008; M. Kim & Lennon, 2000; Hou, 2005; Tiangsoongnern, 2007; Tiangsoongnern & Vuori, 2004). It was suggested that using the correlation analysis would help to assure the construct validity¹ of the constructs examined in this study (Tabachnick & Fidell, 2001).

The biographic data of respondents and the results of the hypothesis testing were presented and discussed in Chapter 4.

¹ The ability of a measure to provide empirical evidence consistent with a theory based on the concepts (Zikmund, 2003, p. 718).