

CHAPTER 4: RESULTS

Introduction

The previous chapter discussed the research methodology and method of analysis used to test the hypotheses of this study. This chapter presents the results from the data analyses which were conducted in two stages: data screening and hypothesis testing. The chapter proceeds in five sections. First, the result of data collection and response rate are discussed. This is followed by data screening, and nature of the sample. The result of the hypothesis testing (including result of reliability analysis) and the result of supplementary analysis (including a correlation matrix) are then provided. The chapter concludes with a summary of the significant findings of this study.

The Results of Data Collection and Response Rate

Data was collected from gemstone buyers who visited the 43rd Bangkok Gems & Jewellery Fair 2009. A comparison of expected and actual number of responses for Thai and foreign gemstone buyers was shown in Table 2.

Table 2: Comparison of expected and actual number of responses for Thai and foreign gemstone buyers

Number of Responses	Country of Residence	
	Thai	Foreigner
Expected	200	200
Actual	109 (59.9%)	73 (40.1%)
Total	182 (100%)	

Data collection was completed in 5 days of the exhibition (February 25th – March 1st 2009). Four hundred sets of the questionnaires were expected while one hundred and eighty-four responses were received. Two sets of the responses were uncompleted; therefore a response rate of 45.5% (182 out of 400) was achieved. With the political unrest in Thailand during the exhibition session e.g. the anti-government's protestant of the United Front for Democracy against Dictatorship (UDD), so called the 'Red Shirt' in Bangkok, which has caused safety concerns to foreigners, the total number of visitors tended to be lower than other previous events (GIT, 2010). This might help to address such the fair response rate.

The majority of respondents were Thai (59.9%) and the remaining (40.1%) were foreigners. This result met the study assumption that aiming to receive an equal number of responses from Thai and foreign gemstone buyers.

Data Screening

Using a set of data screening procedures, the data was assessed for normality, skewness, kurtosis and the presence of univariate outliers before the analysis (Tabachnick & Fidell, 2001). Investigation of normal probability and scatter-plot diagram reported no serious violations. The data mostly fell in specified ranges: of $-1 <$ and $< +1$ for skewness and $-2 <$ and $< +2$ for kurtosis. Table 3 reports some of the descriptive statistics result of the study constructs and their measurement variables. The data therefore could be assumed to be normally distributed.

The 26 items underlying the purchasing behaviour construct (measured by product strategy, price strategy and place strategy) and the attitude construct (measured by trust, satisfaction and purchase intention) showed moderate reliability with a coefficient alpha of 0.70. This indicated an acceptable internal consistency of the measurement items used and the study constructs (Hair, Bush, & Ortinau, 2000; Zikmund, 2003). See Appendix A for a full set of the constructs and the measurement items used.

Table 3: Descriptive Statistics of the Study Variables

Construct/Variable	Mean	Std. Deviation
Attitude Construct		
Trust	3.8354	.4159
Satisfaction	3.8875	.4647
Purchase Intention	3.3665	.7723
Purchasing Behavior Construct		
Product	4.2474	.4137
Price	3.4667	.6387
Channel	3.2870	.7637

The Nature of the Sample

The majority of respondents were found to be gemstone dealer (47.8%), followed by jewellery retailer (25.8%), and gemstone and jewellery dealer (21.4%). They mostly were micro companies that have 1-10 employees (63.1%) (Bridge, O'Neill, & Cromie, 2003). This result was as expected because data collection was conducted in the gemstone zone of the exhibition, which was the study focus. These buyers tended to have a high level of experience in the gemstone industry, ranging from 15-20 years (31.6%), and 10-15 years (27.7%) respectively. A greater part of gemstone buyers in this study were male (65.9%).

Results also showed that gemstone buyers have relied on traditional buying method (95.6%). In other words, a face-to face contact still plays a significant role when

purchasing gemstones. Visiting gemstone exhibitions (30.6%), visiting seller companies (23.3%), calling salespersons (22.5%) and buying from travelling salespersons (17.7%) were found to be the top four popular buying methods used. In terms of the purchases through online channels (4.4%), buying from sellers' websites; buying from gemstone and jewellery e-marketplaces e.g. Polygon.net; and buying from general e-marketplaces e.g. eBay, were found to be the three most frequent used online-buying methods.

Furthermore, the majority of foreign buyers located their business in Asia (68.3%) followed by Middle East (15.9%), North America (13.4%) and Europe (2.4%) respectively. 72% of respondents have attended gemstone exhibitions approximately 3 times per year. In a typical year, the five most visiting countries were Thailand (54.8%) followed by Hong Kong (21%), China (9.2%), India (4.8%) and USA (4.5%) respectively. This result supported the information provided by recognized gemstone institutions such as the Gems Institute of Thailand (GIT) that those countries are in the group of the world leading gemstone trading countries (GIT, 2010).

Gemstone buyers in the study purchased both the precious gemstones (i.e. Ruby, Sapphire and Emerald) and the semiprecious gemstones (i.e. Zongia, Amethyst, Topaz, Quartz, Moonstone, Padparacha and others) in a proportion of 53% versus 47%, respectively. It was, however, contradict to the study of Ward, Girardi, & Tiangsoongnern (2007) found that semiprecious gemstones were more likely to be

purchased when buying through online channels. This result implied different practices in gemstone trading which would be discussed in the next chapter.

It was also found that buyers tended to purchase gemstones in the three categories of lot-types at an approximate proportion of 30% each. That was, the loose lots (buying a large amount of gemstones in varying sizes and shapes), the single piece, and the calibrated lots (buying gemstones in specific measured sizes and shapes) (Beard, 2001; Buncharoen, 2009; Phetwong, 2009; Porncharern, 2007). This was not consistent with the study of Tiangsoongnern (2007) suggested that most buyers tended to buy gemstones in the loose lots rather than as the single piece. Again, such a result highlighted diverse practices of gemstones purchasing between online buying methods and traditional buying methods which call for a further study in the area.

Moreover, buyers tended to purchase gemstones in variety qualities. Typically, the quality of gemstones has been classified by the rule of 4C's (color, clarity, cutting style and carat weight), in which a higher grade in these attributes indicating a higher quality (Buncharoen, 2009; Hughes, 1997; ICA, 2001; Liddicoat, 1993; Porncharern, 2007; Weinburg, 2001). The medium-low was found to be the most purchased quality (81%), followed by the high quality (19.0%). Whilst the study of Tiangsoongnern (2007) suggested that the medium-high was the most purchased quality when buying gemstones online, such a result re-emphasized an existence of dissimilar practices between buying

gemstones through online channels and traditional channels. It gave new understanding to the literature and would be discussed in the next chapter.

Results of Hypothesis Testing

T-test, Mann-Whitney U test, and correlation analysis were used to test the seven study hypotheses, as outlined below:

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

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.

Support of H1a was not found in this study. There was no evidence of a statistical difference between Thai gemstone buyers and foreign gemstone buyers in terms of their purchasing behavior toward the products purchased (Sig. = 0.853, $p > 0.05$). Both of the Thai and foreigner gemstone buyers have considered similar gemstone characteristics: treatment disclosure e.g. heating, authenticity; origin; color; clarity; variety of gemstones type offered; and selective available (able to select and buy some parts of the whole gemstone lot), when purchasing gemstones. This result supported a practical guideline for buying gemstones (Hughes, 1997; ICA, 2001; Netco & Weinburg, 2001; Phetwong, 2009; Porncharern, 2007; Weinburg, 2001). Thus, these gemstone characteristics could be considered as the international standard set to purchase gemstones.

In regards to H1b, there was no support of a statistical difference between Thai gemstone buyers and foreign gemstone buyers in terms of their purchasing behavior toward the

price purchased (Sig. = 0.109, $p > 0.05$). Both of the Thai and foreigner gemstone buyers had similar level of agreement (mean = 3.40 and 3.56) toward the price strategy used by the seller. They agreed that charging a higher price for a better gemstone quality; having a standard price for the same gemstone quality; and offering flexible payment methods, are general practices for most sellers. In other words, sellers should re-consider / adapt these strategies should they aim to differentiate the gemstone market using the price strategy as a segmentation criterion.

Support of H1c was found in this study. Thai gemstone buyers and foreign gemstone buyers are different in terms of their purchasing behavior toward the place (distribution channel) strategy used by the seller. Buying gemstones using face-to-face contact (Sig. = 0.00, $p < 0.05$) was more likely to be used by the foreigner buyers (mean = 4.72) than the Thai buyers (mean = 4.37). The result implied that gemstone buyers seemed to rely on their own vision when inspecting the quality of gemstones; and this was more obvious in foreign gemstones buyers. Again, this finding supported suggestions of practitioners in gemstone industry (e.g. Buncharoen, 2009; ICA, 2001; Phetwong, 2009; Porncharern, 2007) and some previous academic studies (e.g. Tiangsoongnern & Vuori, 2004 and Tiangsoongnern, 2007).

H2a was support in this study (Sig. = 0.017, $p < 0.05$). That was, Thai gemstone buyers and foreign gemstone buyers are different in terms of their attitudes toward the trust to

purchase Thai gemstones. Foreign gemstone buyers were more likely to pay higher attention on the attributes relating to the trust than Thai gemstone buyers' (mean = 3.93 and 3.77). Offering warranty/guarantee was found to be the most considered attribute, followed by a length of relationship, good reputation, offering a return policy within inspection period, salesperson influence, and a company size, respectively. Previous studies such as Tiangsoongnern (2007) found the direct effects of trust on the purchasing behavior of gemstone buyers. However, that study used the frequency of purchase to measure the (level of) purchasing behavior through online channels while this study focused on examining gemstone purchasing through traditional methods. The result of this study therefore contributed new understanding to the relevant literature using empirical evidence from gemstone purchasing through traditional methods e.g. visiting gemstone exhibitions and visiting seller's office, which has been rarely explored in an academic study.

Thai buyers and foreign buyers were found to have different attitudes toward the satisfaction to purchase Thai gemstones (H2b) (Sig. = 0.022, $p < 0.05$). Foreign buyers tended to be more satisfied with buying Thai gemstones than Thai buyers' (mean = 3.98 and 3.82). A satisfaction from ability to make profit when reselling Thai gemstones was deemed the most considered rationale while a satisfaction to deal business with Thai sellers was regarded the least considered rationale. This finding was in line with a common goal of profit organizations (e.g. Bridge, O'Neill, & Cromie, 2003).

Support of H2c was not found in this study ($p>0.05$). Thai buyers and foreign buyers showed a similar level of intention to purchase Thai gemstones (mean = 3.37 and 3.36). It was unlikely to predict whether they would buy Thai gemstones or would buy more Thai gemstones in the future. This result was not expected, and hence provided additional knowledge to the body of literature in this area. It also implied that other factors might take part in this occurrence, which would be addressed in the next chapter.

Table 4 showed a support of H3 in this study. The buyer's purchase behavior (towards the product strategy, the price strategy and the place strategy used by the seller) is positively related to the buyer's attitudes (shown through the satisfaction, the trust and the purchase intention) towards Thai gemstone purchasing ($r = .246$, $p<0.01$). The more the buyers deemed the marketing strategies used by the sellers met their performance expectation, the higher the buyers' satisfaction, the buyers' trust, and the buyers' purchase intention towards Thai gemstones purchasing.

Table 4: Correlation of the Study Constructs

	Construct: Purchasing Behavior*and Attitudes**
Pearson Correlation (r)	0.246***
Sig. (2-tailed)	0.001

Note:

* Purchasing behavior construct was measured by the product, the price and the channel strategy

**Attitudes construct was measured by the satisfaction, the trust and the purchase intention

*** Correlation is significant at the 0.01 level

Results of Supplementary Analysis

A correlation analysis was used to examine the relationship among the measurement variables i.e. the product strategy, the price strategy and the place (channel) strategy which underlying the purchase behaviour construct; and the satisfaction, the trust and the purchase intention which underlying the attitude construct. Table 5 reports the existence of correlation among the majority of these measurement variables ($p < 0.05$ and $p < 0.01$).

Table 5: Correlation Matrix of the Study Variables

Variables	Correlation	Purchase Intention	Trust	Satisfaction	Product	Price
TRUST	Pearson Correlation	.161 [*]				
	Sig. (2- tailed)	.031				
Satisfaction	Pearson Correlation	.361 ^{**}	.375 ^{**}			
	Sig. (2- tailed)	.000	.000			
Product	Pearson Correlation	.204 ^{**}	.068	.066		
	Sig. (2- tailed)	.006	.362	.379		
Price	Pearson Correlation	.228 ^{**}	.407 ^{**}	.158 [*]	.155 [*]	
	Sig. (2- tailed)	.002	.000	.035	.038	
Channel	Pearson Correlation	-.030	.121	-.023	-.142	.330 ^{**}
	Sig. (2- tailed)	.690	.106	.757	.056	.000

*Correlation is significant at the 0.05 level

**Correlation is significant at the 0.01 level

Result of supplementary analysis gave additional insight to the support of H3. The product strategy and the price strategy utilized by the seller were found to have a positive relationship with the purchase intention of gemstone buyer ($p < 0.01$). The more the buyer was provided with information about gemstone characteristics (e.g. treatment disclosure, authenticity, origin, clarity), the higher the buyer's intention to purchase Thai gemstones ($r = 0.204$, $p < 0.01$). This result corroborated practitioner's suggestions (e.g. Beard, 2001; Buncharoen, 2009; ICA, 2001; Porncharern, 2007; Weinburg, 2001) that buyers should consider these attributes when purchasing gemstones. Furthermore, buyers were likely to have a higher purchase intention, if sellers used a standard pricing (for the same quality of gemstones) and offered flexible payment methods such as payment by installments ($r = 0.228$, $p < 0.01$). This result suggested optional pricing strategies for gemstone sellers.

Similarly, the price strategy used by the seller was also found to have positive correlation with the trust ($r = 0.407$, $p < 0.01$) and the satisfaction ($r = 0.158$, $p < 0.01$) to purchase Thai gemstones. That was, the more the sellers utilized a standard pricing (for the same quality of gemstones) and offered flexible payment methods, buyers tended to have a higher satisfaction and a higher trust to buy Thai gemstones. This finding suggested an alternative option to capture buyer's trust, buyer's satisfaction and buyer's purchase intention for gemstone sellers.

There also emerged correlation between measurement variables underlying the attitude construct in the study. The higher the buyer's satisfaction, the more the buyer's trust to purchase gemstones ($r = 0.375$, $p < 0.01$). Moreover, the buyer's intention to purchase Thai gemstones was likely to increase following the higher buyer's satisfaction ($r = 0.361$, $p < 0.01$) and the higher buyer's trust ($r = 0.161$, $p < 0.05$). Such the relationship between buyer's trust and buyer's satisfaction was consistent with previous studies (Hou, 2005; North, De Vos, & Kotzé, 2003; Wonglorsaichon, 2002). However, their findings were drawn from the purchase of products categories other than gemstones e.g. apparel (e.g. Hou, 2005; North, De Vos, & Kotzé, 2003), and automobile tire (e.g. Wonglorsaichon 2002). Similarly, the relationship between buyer's satisfaction and buyer's purchase intention was suggested in prior studies (e.g. Harrison & Shaw, 2004); nevertheless it was derived from examining service sectors such as a museum visit. Therefore, the results of this study provided new insight into the literature in these areas.

The pattern of correlations in this study partly supported the discriminant validity² of the constructs examined (Zikmund, 2003). There was no significant relationship between biographical data (e.g. respondent's country of residence, company type, gemstone type,

² The ability to predict the probability that an object will belong in one of two or more mutually exclusive categories (Zikmund, 2003).

gemstone lot-type, and number of visits), and the purchase behaviour and the attitude ($p>0.05$).

A correlation analysis also revealed a significant relationship among number of visits, years of experience, and number of employees. The higher the years of experience, the higher the number of visits ($r=0.281$, $p<0.01$). Employees in larger companies (with a higher number of employees) tended to have higher years of experience ($r=0.210$, $p<0.01$). Moreover, such companies were more likely to visit gemstone exhibitions often than smaller companies (with a lower number of employees) ($r=0.196$, $p<0.05$).

Results of Mann-Whitney U test reported a significant difference between some measurement variables underlying the purchasing behavior and the attitudes of Thai and foreign gemstone buyers. Foreign gemstone buyers tended to use a gemstone exhibition visit and a seller organization visit more often than Thai gemstone buyers ($p=0.001$, $p=0.005 < 0.01$).

It was also revealed that when making decision to buy gemstones, both Thai and foreign gemstone buyers have considered five most important attributes. These were the “Seller’s offering return policy within inspection period” (33.5%), followed by the “Seller’s offering warranty/guarantee on gemstone bought” (18.7%), the “Seller’s

reputation” (13.7%), the “Seller’s offering a selective option (able to select and buy some parts of the whole gemstone-lot)” (11%), and the “Seller’s closure of the gemstone authentic” (7.7%), respectively. The finding suggested a possible set of focusing attributes for gemstone seller to appeal buyers.

Chapter Summary

This chapter presented the statistical results of the hypothesis testing and supplementary analysis. The research question and the hypotheses were answered. As shown in Table 6, significant results have been found to support the study hypotheses.

Table 6: Summary of Hypothesis Results

<p>H1a: Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their purchasing behavior toward the products purchased (e.g. gemstone characteristics)</p> <p>H1b: Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their purchasing behavior toward the price purchased</p> <p>*H1c: Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their purchasing behavior toward the buying channels used</p>
<p>*H2a: Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their attitudes toward the trusts to purchase Thai gemstones</p> <p>*H2b: Thai gemstone buyers and foreign gemstone are significantly different in terms of their attitudes toward the satisfaction to purchase Thai gemstones</p> <p>H2c: Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their attitudes toward the intention to purchase Thai gemstones</p>
<p>*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 attitudes (shown through the satisfaction, the trust and the purchase intention) towards Thai gemstone purchasing.</p>
<p>Note: *Significant hypothesis at the 0.05 level</p>

For the purchasing behavior construct, it was found that Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of the place strategy used to buy Thai gemstones. Buying gemstones using face-to-face contact was more likely to be used by the foreign buyers than the Thai buyers. In regards to the attitude construct, it

was evident that Thai gemstone buyers and foreign gemstone buyers are significantly different in terms of their trust and their satisfaction to purchase Thai gemstones.

Moreover, it was found that the buyer's purchase behavior (towards the product, the price 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. This study also provided supplementary findings, which contributed new insight into the relevant literature and the gemstone industry.

Chapter 5 will present a discussion of the findings of this study, with an outline of the theoretical and practical implications, limitations, and suggestions for future research.