

Chapter 4

Research Result

This data is collected from the questionnaires is collected from surveying the gemstones owner shop, gemstones broker, gemstones purchaser, gemologist, trade for cut & polished stones, importer and exporter seller, retailer, manufacture, and broker from rough stones, interviewees who answer this questionnaire have more than 3 years experience or some more than 10 years and they are experts that what they are doing in this gemstones industries. From the total distributing 100 sets of questionnaire, the researcher received 80 sets completed questionnaire by face to face survey. Researcher gets the right answers from the right target interviewees.

4.1 Summary of Received Information from Questionnaires

This section consists of the gathering and analyzing of the information from the survey of Thai gemstones industry. The information comes from 80 questionnaires. This questionnaire is divided into four parts as:

1. General information: Ask for the general information of the answers such as type of the business, working experience, and number of employees in his/her organization.
2. about our assumption of Thai Gemstones industry: Ask for his/her agreements in the assumptions of strengths and weaknesses of Thai Jewelry Industry.
3. About the external factors that affect Thai Gemstones industry, Ask for his/her agreements about the external factors that affect the export potential both opportunities and threats of Thai Gemstones industry.
4. Hypotheses testing.

General Information

This part is including general information from interviewee which is consist of gender, age, education level, profession, marital status, monthly income, working experience in gemstone business, and number of employees from their organization. The result displays from table 4.1 – 4.8 by using frequency and percent.

Table (4.1) .1 Participant's gender

	Frequency	Percent
Male	68	85.0
Female	12	15.0
Total	80	100.0

From the table 4.1, the majority interviewees are male (85%), while other 15% are female.

Table (4.1).2 Participant's age

	Frequency	Percent
18 - 30 years old	18	22.5
31 - 40 years old	42	52.5
41 - 50 years old	14	17.5
51 - 60 years old	6	7.5
Total	80	100.0

According to the table 4.2, the result shows most of interviewees of this study aged 31 – 40 years old (52.5%), and then following by 18 – 30 years old (22.5%), 41 – 50 years old (17.5%), and 51 – 60 years old (7.5%), respectively.

Table (4.1).3 Participant's education background

	Frequency	Percent
Primary school	6	7.5
High school	2	2.5
Bachelor Degree	39	48.8
Master Degree	33	41.3
Total	80	100.0

Among 80 interviewees, the majority of them has highest education in Bachelor degree (48.8%), and followed by Master Degree (41.3%), then primary school (7.5%), and high school (2.5%) as minority group.

Table (4.1).4 Participant's profession

	Frequency	Percent
Broker for rough stones	8	10.0
Cutting and polishing	6	7.5
Importer / exporter	38	47.5
Curator / gemologist	7	8.8
Trader for cut & polished stones	9	11.3
Collector	3	3.8
Retailer	9	11.3
Total	80	100.0

From the table 4.4, the majority of interviewees is importer and exporter (47.5%), and followed by trader for cut & polished stones (11.3%), retailer (11.3%), broker for rough stones (10%), curator or gemologist (8.8%), cutting and polishing (7.5%), and collector (3.8%), respectively.

Table(4.1).5 Participant's marital status

	Frequency	Percent
Single	31	38.8
Married	46	57.5
Divorced	3	3.8
Total	80	100.0

From the table 4.5, the majority of interviewees is importer and exporter (47.5%), and followed by trader for cut & polished stones (11.3%), retailer (11.3%), broker for rough stones (10%), curator or gemologist (8.8%), cutting and polishing (7.5%), and collector (3.8%), respectively.

Table (4.1)6 Participant's monthly income

	Frequency	Percent
Below 200,000 Baht	35	43.8
200,000 - 400,000 Baht	8	10.0
400,000 - 600,000 Baht	12	15.0
600,000 - 1,000,000 Baht	5	6.3
1,200,000 - 1,400,000 Baht	3	3.8
Over 1,500,000 Baht	17	21.3
Total	80	100.0

According to the table 4.6, most of interviewees (43.8%) earn monthly income below 200,000 Baht, and then following by over 1,500,000 Baht (21.3%), 400,000 - 600,000 Baht (15%), 200,000 - 400,000 Baht (10%), 600,000 - 1,000,000 Baht (6.3%), and 1,200,000 - 1,400,000 Baht (3.8%), respectively.

Table (4.1)7 Participant's experience in gemstone business

	Frequency	Percent
Below 10 years	35	43.8
10 - 20 years	32	40.0
21 - 30 years	-	-
31 - 40 years	10	12.5
Over 40 years	3	3.8
Total	80	100.0

The result from table 4.7 explains that most of interviewees have experience in gemstone business below 10 years (43.8%), and then following by 10 - 20 years (40%), 31 - 40 years (3.8%), and over 40 years (3.8%), respectively.

Table (4.1)8 Participant’s size of organization

	Frequency	Percent
Below 10	33	41.3
10 - 20	20	25.0
21 - 30	-	-
31 - 50	11	13.8
51 - 100	11	13.8
Over 100	5	6.3
Total	80	100.0

Table 4.8 displays the number of employee in interviewee’s organization, majority of them has below 10 person in organization they are belong (41.3%), and then following by 10 – 20 person (25%), 31 – 50 person (13.8%), 51 – 100 person (13.8%), and over 100 person for 6.3%, respectively.

Assumptions our Interviewees overview on Gemstones Industries

This section represent about the overview on Gemstones business. The agreements of the interviewees in each assumption are divided into five levels, range from strongly agree, agree, either, disagree, and strongly agree. The researcher applied average mean and standard deviation to summarize the assumption level into average score. The weights of each level are introduced and measured by setting the score range.

$$\text{Score range} = \frac{\text{maximum score} - \text{minimum score}}{5} = \frac{5-1}{5} = 0.8$$

Score	Opinion level
1.00 – 1.80	Strongly disagree
1.81 – 2.60	Disagree
2.61 – 3.40	Neutral

3.41 – 4.20

Agree

4.21 – 5.00

Strongly agree

Table (4.1)9 Overview on gemstones industries

	Mean	Std. Deviation
Thai Labors have continuously development in skilled and efficiency continuously.	4.40	.61
Thailand is the main centers of stone polishing, cutting and innovative design color gemstones in the world.	4.26	.81
Thailand need more high tech technology for cutting gems stones for that we need to import expensive machines and equipment from abroad.	4.24	.92
Thailand is one of the centers of hand & machine, polishing, cutting gemstones of the world.	4.16	.92
Heat treatment or cook technique is the advantage Thailand over others countries.	4.10	.95
Skilled labor cost is lower in Thailand than other countries.	3.71	1.13

The summary of number of agreements about Thai gemstones industry found that most of the entrepreneurs and the specialists in gemstones industry agree with the aspect of Thai Labors have continuously development in skilled and efficiency continuously, average mean is equal to 4.40 which is highest mean score among other agreements. In addition, most of interviewees also agree with Thailand is the main centers of stone polishing, cutting and innovative design color gemstones in the world ($\bar{X} = 4.26$), and also need more high tech technology for cutting gems stones ($\bar{X} = 4.24$). They still agree with Thailand is one of the centers of hand & machine, polishing, cutting gemstones of the world ($\bar{X} = 4.16$), and has heat treatment or cook technique over others countries ($\bar{X} = 4.10$). However, interviewees have least agree with skilled labor cost in Thailand is lower than other countries ($\bar{X} = 3.71$).

(4.1).10 External factors that affect Thai Gemstones industry

This section represent external factors that affect the export potential both opportunities and threats of Thai Gemstones industry. Interviewee’s opinions are divided into five levels, range from strongly agree, agree, either, disagree, and strongly agree. The researcher applied average mean and standard deviation to summarize the opinion toward external factors into average score. The results are represented in table 4.10 – 4.14.

Table (4.1)11 Average score of political stability & natural disaster

	Mean	Std. Deviation
Political stability & natural disaster	3.76	.78
High trade barriers	3.75	1.06
The unite of free trade area such as EU, NAFTA can effect gemstones business	3.83	.84
Natural disaster also affects gemstones business	3.70	1.14

From the Table 4.10, the result of the overall opinion towards political stability & natural disaster is equal to 3.76, which are represent most of interviewees agree with it. In description, most of respondents agree that free trade area such as EU, NAFTA can effect gemstones business ($\bar{X} = 3.83$), and following by high trade barriers ($\bar{X} = 3.75$), while they have least agree with natural disaster also affects gemstones business ($\bar{X} = 3.70$), respectively.

Table (4.1)12 Average score of market economy

	Mean	Std. Deviation
Market economy	3.58	.83
Currency can also affect the gemstones market	3.70	.96
Import-export duty rate is higher	3.61	1.16
Tax policy in raw material	3.64	.88
The custom measure in import-export is not convenience, slow and not clear	3.50	1.17
Tax policy in machine and equipment	3.45	1.07

From the Table 4.11, the result of the overall opinion towards market economy is equal to 3.58, which are represent most of interviewees agree with it. In description, most of respondents agree that currency can also affect the gemstones market ($\bar{X} = 3.70$), and following by tax policy in raw material ($\bar{X} = 3.64$), import-export duty rate is higher ($\bar{X} = 3.61$), the custom measure in import-export is not convenience, slow and not clear ($\bar{X} = 3.50$), while they have least agree with tax policy in machine and equipment ($\bar{X} = 3.45$), respectively.

Table (4.1)13 Average score of economic growth

	Mean	Std. Deviation
Economic growth	3.68	.57
World economic has tended to become better than before	3.55	.94
Developing and producing high technology	3.50	.62
Developing and producing gemologist	3.68	.76
Improvement of import and export operation	3.74	.91
Outsourcing raw material from abroad	3.75	.89
Among the export product gem and jewelry industries increase GDP of Thailand economy	3.85	.75

From the Table 4.12, the result of the overall opinion towards economic growth is equal to 3.68, which are represent most of interviewees agree with it. In detail, most of respondents agree that the export product gem and jewelry industries increase GDP of

Thailand economy ($\bar{X} = 3.85$), and following by outsourcing raw material from abroad ($\bar{X} = 3.75$), improvement of import and export operation ($\bar{X} = 3.74$), developing and producing gemologist ($\bar{X} = 3.68$), world economic has tended to become better than before ($\bar{X} = 3.55$), while they have least agree with developing and producing high technology ($\bar{X} = 3.50$), respectively.

Table (4.1).14 Average score of high international demand

	Mean	Std. Deviation
High international demand	3.86	.64
High demand of gems treatment	3.84	.82
High demand of gems cutting, setting and exquisite designs and perfect blend of Western styles and other countries style	3.93	.78
Higher competition from China, India, and ASEAN of color gemstones	4.11	.78
High demand of Bangkok International Gems and Jewellery Fair held twice a year	3.56	1.16

From the Table 4.13, the result of the overall opinion towards high international demand is equal to 3.86, which are represent most of interviewees agree with it. In detail, most of respondents agree that there are higher competition from China, India, and ASEAN of color gemstones ($\bar{X} = 4.11$), and following by high demand of gems cutting, setting and exquisite designs and perfect blend of Western styles and other countries style ($\bar{X} = 3.93$), high demand of gems treatment ($\bar{X} = 3.84$), while they have least agree with high demand of Bangkok International Gems and Jewellery Fair held twice a year ($\bar{X} = 3.56$), respectively.

Table (4.1).15 Average score of market facilitation

	Mean	Std. Deviation
Market facilitation	3.93	.74
Internet and e-commerce to find the new market and provide the information	4.11	.78
Arrangement of gems and jewelry fair exhibition	4.03	.87
Supporting of the government to find the new market collecting and providing the trading information and marketing research	3.90	1.01
Export promotion policy	3.69	.99

From the Table 4.14, the result of the overall opinion towards market facilitation is equal to 3.93, which are represent most of interviewees agree with it. In detail, most of respondents agree that internet and e-commerce to find the new market and provide the information ($\bar{X} = 4.11$), and following by arrangement of gems and jewelry fair exhibition ($\bar{X} = 4.03$), supporting of the government to find the new market collecting and providing the trading information and marketing research ($\bar{X} = 3.90$), while they have least agree with export promotion policy ($\bar{X} = 3.69$), respectively.

Hypothesis Testing

H1: The difference demographic background have difference attitude towards factors facilitate import and export trade of gemstones in Thailand.

Table (4.1). 16 The analysis of difference demographic background and attitude toward political stability and natural disaster by using Analysis of Variance (ANOVA)

Political stability & natural disaster		Mean	S.D	F	Sig.
Gender	Male	3.91	.74	20.294	.000*
	Female	2.92	.43		
	Total	3.76	.78		
Age	18 - 30 years old	3.78	.50	3.563	.018*
	31 - 40 years old	3.90	.89		
	41 - 50 years old	3.71	.57		
	51 - 60 years old	2.83	.55		
	Total	3.76	.78		
Education background	Primary school	4.33	.00	2.362	.078
	High school	3.33	.00		
	Bachelor Degree	3.86	.66		
	Master Degree	3.56	.93		
	Total	3.76	.78		
Profession	Broker for rough stones	2.96	.52	2.386	.037*
	Cutting and polishing	4.17	.18		
	Importer / exporter	3.74	.70		
	Curator / gemologist	3.67	.64		
	Trader for cut & polished stones	3.96	1.23		

	Collector	4.33	.00		
	Retailer	3.96	.86		
	Total	3.76	.78		
Income	Below 200,000 Baht	3.75	.76	2.134	.071
	200,000 - 400,000 Baht	4.13	.83		
	400,000 - 600,000 Baht	3.97	.73		
	600,000 - 1,000,000 Baht	3.00	.91		
	1,200,000 - 1,400,000 Baht	4.33	.00		
	Over 1,500,000 Baht	3.57	.72		
	Total	3.76	.78		

Table 4.15 represents the results of difference in attitude toward political stability and natural disaster by using analysis of variance (ANOVA) for demographic factors. The analysis of variance indicated that the significant level of gender, age, and profession are at .000, .018, and .037, which are less than .05. It means that there are difference in attitude toward political stability and natural disaster when segmented by gender, age, and profession at the .05 significant levels. However, education background and income has no significant difference with political stability and natural disaster. According to the mean score of gender, age, and profession, the result found that male has significantly higher attitude toward political stability and natural disaster than female ($\bar{X} = 3.91$), and interviewee who aged 31 - 40 years old has highest mean score ($\bar{X} = 3.90$). In term of profession, collector has highest mean score ($\bar{X} = 4.33$).

Table (4.1).17 The analysis of difference demographic background and attitude toward market economy by using Analysis of Variance (ANOVA)

Market economy		Mean	S.D	F	Sig.
Gender	Male	3.60	.88	.188	.666
	Female	3.48	.54		
	Total	3.58	.83		
Age	18 - 30 years old	3.50	.51	9.921	.000*
	31 - 40 years old	3.80	.63		
	41 - 50 years old	3.64	1.10		
	51 - 60 years old	2.10	.77		
	Total	3.58	.83		
Education	Primary school	4.80	.00	7.265	.000*

background	High school	3.00	.00		
	Bachelor Degree	3.65	.64		
	Master Degree	3.31	.92		
	Total	3.58	.83		
Profession	Broker for rough stones	3.38	.36	2.364	.038*
	Cutting and polishing	3.60	.22		
	Importer / exporter	3.49	.99		
	Curator / gemologist	3.00	.45		
	Trader for cut & polished stones	4.16	.56		
	Collector	3.20	.00		
	Retailer	4.11	.78		
	Total	3.58	.83		
Income	Below 200,000 Baht	3.59	.81	4.926	.001*
	200,000 - 400,000 Baht	3.83	.58		
	400,000 - 600,000 Baht	3.88	.78		
	600,000 - 1,000,000 Baht	3.88	.11		
	1,200,000 - 1,400,000 Baht	4.80	.00		
	Over 1,500,000 Baht	3.93	.78		
	Total	3.58	.83		

Table 4.16 represents the results of difference in attitude toward market economy by using analysis of variance (ANOVA) for demographic factors. The analysis of variance indicated that the significant level of age, education, profession, and income are at .000, .000, .038, and .001, which are less than .05. It means that there are difference in attitude toward market economy when segmented by age, education, profession, and income at the .05 significant levels. However, gender has no significant difference with market economy. According to the mean score of age, education, profession, and income, the result found that interviewee who aged 31 - 40 years old has highest mean score ($\bar{X} = 3.80$), graduated with Primary school ($\bar{X} = 4.80$), and work as trader for cut & polished stones ($\bar{X} = 4.16$). In term of income, interviewees who has income 1,200,000 - 1,400,000 Baht has highest mean score ($\bar{X} = 4.80$).

Table (4.1). 18The analysis of difference demographic background and attitude toward economic growth by using Analysis of Variance (ANOVA)

Economic growth		Mean	S.D	F	Sig.
Gender	Male	3.67	.60	.013	.910
	Female	3.69	.35		
	Total	3.68	.57		
Age	18 - 30 years old	3.39	.66	6.478	.001*
	31 - 40 years old	3.87	.52		
	41 - 50 years old	3.71	.34		
	51 - 60 years old	3.08	.27		
	Total	3.68	.57		
Education background	Primary school	4.00	.00	1.673	.180
	High school	3.00	.00		
	Bachelor Degree	3.65	.62		
	Master Degree	3.70	.54		
	Total	3.68	.57		
Profession	Broker for rough stones	3.63	.42	7.349	.000*
	Cutting and polishing	4.00	.55		
	Importer / exporter	3.62	.43		
	Curator / gemologist	3.64	.80		
	Trader for cut & polished stones	3.83	.28		
	Collector	2.17	.00		
	Retailer	4.13	.50		
	Total	3.68	.57		
Income	Below 200,000 Baht	3.60	.57	1.236	.301
	200,000 - 400,000 Baht	3.44	.28		
	400,000 - 600,000 Baht	3.96	.61		
	600,000 - 1,000,000 Baht	3.60	.55		
	1,200,000 - 1,400,000 Baht	4.00	.00		
	Over 1,500,000 Baht	3.72	.66		
	Total	3.68	.57		

Table 4.17 represents the results of difference in attitude toward economic growth by using analysis of variance (ANOVA) for demographic factors. The analysis of variance indicated that the significant level of age and profession are at .001 and .000, which are less than .05. It means that there are difference in attitude toward economic growth when segmented by age and profession at the .05 significant levels. However, gender, education background, and income have no significant difference with economic growth. According to the mean score of age and profession, the result found that interviewee who aged 31 - 40 years old has highest mean score ($\bar{X} = 3.87$). In term of profession, interviewees who are retailer has highest mean score ($\bar{X} = 4.13$).

Table (4.1).19The analysis of difference demographic background and attitude toward high international demand by using Analysis of Variance (ANOVA)

High international demand		Mean	S.D	F	Sig.
Gender	Male	3.85	.67	.207	.650
	Female	3.94	.45		
	Total	3.86	.64		
Age	18 - 30 years old	3.69	.56	9.076	.000*
	31 - 40 years old	4.09	.61		
	41 - 50 years old	3.80	.43		
	51 - 60 years old	2.88	.41		
	Total	3.86	.64		
Education background	Primary school	4.00	.00	1.567	.204
	High school	3.00	.00		
	Bachelor Degree	3.93	.58		
	Master Degree	3.80	.74		
	Total	3.86	.64		
Profession	Broker for rough stones	3.84	.53	3.341	.006*
	Cutting and polishing	4.25	.27		
	Importer / exporter	3.67	.62		
	Curator / gemologist	3.43	1.05		
	Trader for cut & polished stones	4.39	.45		
	Collector	4.00	.00		
	Retailer	4.17	.33		
	Total	3.86	.64		
Income	Below 200,000 Baht	3.91	.67	.543	.743

	200,000 - 400,000 Baht	3.94	.62		
	400,000 - 600,000 Baht	3.96	.53		
	600,000 - 1,000,000 Baht	3.60	.55		
	1,200,000 - 1,400,000 Baht	4.00	.00		
	Over 1,500,000 Baht	3.69	.75		
	Total	3.86	.64		

Table 4.18 represents the results of difference in attitude toward high international demand by using analysis of variance (ANOVA) for demographic factors. The analysis of variance indicated that the significant level of age and profession are at .000 and .006, which are less than .05. It means that there are difference in attitude toward high international demand when segmented by age and profession at the .05 significant levels. However, gender, education background, and income have no significant difference with high international demand. According to the mean score of age and profession, the result found that interviewee who aged 31 - 40 years old has highest mean score ($\bar{X} = 4.09$). In term of profession, interviewees who work as cutting and polishing has highest mean score ($\bar{X} = 4.25$).

Table (4.1).20 The analysis of difference demographic background and attitude toward market facilitation by using Analysis of Variance (ANOVA)

Market facilitation		Mean	S.D	F	Sig.
Gender	Male	3.88	.76	2.300	.133
	Female	4.23	.61		
	Total	3.93	.74		
Age	18 - 30 years old	3.61	.42	4.893	.004*
	31 - 40 years old	4.17	.82		
	41 - 50 years old	3.91	.47		
	51 - 60 years old	3.25	.82		
	Total	3.93	.74		
Education background	Primary school	4.00	.00	1.204	.314
	High school	3.00	.00		
	Bachelor Degree	3.90	.62		
	Master Degree	4.01	.92		
	Total	3.93	.74		
Profession	Broker for rough stones	4.22	.76	6.765	.000*
	Cutting and polishing	4.25	.55		

	Importer / exporter	3.60	.59		
	Curator / gemologist	3.68	1.01		
	Trader for cut & polished stones	4.61	.47		
	Collector	3.25	.00		
	Retailer	4.61	.47		
	Total	3.93	.74		
Income	Below 200,000 Baht	3.87	.78	1.319	.265
	200,000 - 400,000 Baht	3.47	.31		
	400,000 - 600,000 Baht	4.25	.75		
	600,000 - 1,000,000 Baht	4.25	.68		
	1,200,000 - 1,400,000 Baht	4.00	.00		
	Over 1,500,000 Baht	3.94	.83		
	Total	3.93	.74		

Table 4.19 represents the results of difference in attitude toward market facilitation by using analysis of variance (ANOVA) for demographic factors. The analysis of variance indicated that the significant level of age and profession are at .004 and .000, which are less than .05. It means that there are difference in attitude toward market facilitation when segmented by age and profession at the .05 significant levels. However, gender, education background, and income have no significant difference with high international demand. According to the mean score of age and profession, the result found that interviewee who aged 31 - 40 years old has highest mean score ($\bar{X} = 4.17$). In term of profession, interviewees who work as trader for cut & polished stones and retailer has highest mean score ($\bar{X} = 4.61$).

H2: The difference between wholesaler and retailer have difference attitude towards factors facilitate import and export trade of gemstones in Thailand.

Table (4.1).21 The analysis of difference between wholesaler and retailer and attitude towards factors facilitate import and export trade of gemstones in Thailand by using Analysis of Variance (ANOVA)

	Wholesaler		Retailer		Total		F	Sig.
	Mean	S.D	Mean	S.D	Mean	S.D		
Political stability & natural disaster	3.53	.66	4.43	.74	3.76	.78	26.115	.000*
Market economy	3.41	.82	4.10	.66	3.58	.83	11.807	.001*

Economic growth	3.68	.50	3.68	.77	3.68	.57	.000	.985
High international demand	3.70	.64	4.33	.36	3.86	.64	16.890	.000*
Market facilitation	3.80	.70	4.34	.74	3.93	.74	8.725	.004*

Table 4.20 represents the results of difference in attitude towards factors facilitate import and export trade of gemstones by using analysis of variance (ANOVA) for find a difference between wholesaler and retailer. The analysis of variance indicated that the significant level of political stability & natural disaster, market economy, high international demand, market facilitation are at .000, .001, .000 and .004, which are less than .05. It means that there are difference in attitude toward factors facilitate import and export trade of gemstones by using analysis of variance (ANOVA) at the .05 significant levels. However, economic growth has no significant difference between wholesaler and retailer. According to the mean score, the result found that interviewees who are retailer have higher mean score than wholesaler in each aspect.

