

CHAPTER 3

DATA COLLECTION

3.1 Introduction

In order to make the analysis of the industry, the data and information about the background, characteristics and present situations both within and outside the industry are necessary. Moreover, nowadays the international trading has much more significant importance because of the globalisation, therefore, the clear and correct information about world market environment and also the main markets and competitors' situations are essential.

In this research, the information from the human experts and related documents are gathered for the resources of the analysis. Related document that are collected in this steps are as: trade statistic, news and law regulations within industry, beneficial information from the previous research, etc. On the other hand, many information are obtained from human experts in jewelry industry both the interviews and seminars.

Moreover, this chapter also includes the brief information, which are the background of the industry and also the basement of the analysis in the next chapter. There are the general information, industry structure, production process, and industry situation of Thai jewelry industry.

3.2 Collected Data

3.2.1 Trade Statistic from Trade Statistic Center

The useful and necessary export and import volumes are collected from Trade Statistic Center¹, Ministry of Commerce. It is the formal statistic data of the government. This information has approved by the government in the correction and accuracy. It is prepared by the co-operation of Department of Business Economic and Department of Customs, Ministry of Commerce. Actually, it is prepared for the governmental

¹ Source: Trade Statistic Center, (2000), <http://www.moc.go.th/thai/dbe/>

departments to use as the reference and use in any analysis or researches. From the past, most of researches use this source of information as the reference; therefore, this trade statistic is appropriate to use as the main reference of the import-export volume and other trading figures in this thesis.

The information that used in this research is shown the trade volume of top ten countries that have most volume in last 5 years. And also the proportion and growth rate of each country are presented with the volume.

Moreover, the important world economic indicators such as the growth of world trade volume, the growth of economic expansion of the world and important countries, inflation rate and balance current account of important countries that prepared by World Economic Outlook are gathered from Trade Statistic Center, too. The trade statistics are included in this report in Appendix A.

3.2.2 *News from Journals*

The information from journals also has a lot of benefits to this research. In the collected data process, several journals both domestic and foreign ones are gathered. By the way, there are two main sources from two journals. There are *Anyamane Newsletter* and *Exporter Review*.

➤ Since *Anyamane Newsletter* consists of various information that covers all Thai jewelry industry, a lot of information in this research is gathered from it. *Anyamane Newsletter* is the monthly journal that managed by Thai Gem and Jewelry Trader Association (TGJTA). TGJTA recommend that *Anyamane Newsletter* is the journal that present all the right information for the entrepreneurs in this business.

This journal includes a lot of news and knowledge about jewelry industry within Thailand and also the important supplies and markets. The information from *Anyamane Newsletter* that are used in this research are as adjusted tax structure, jewelry fair and exhibition arrangement, jewelry seminar, news both of Thai and foreign jewelry markets, etc.

➤ *Exporter Review* is the well-known fortnightly journal of Thailand. It receives the accuracy trading information, the referable exporting policy both of Thai and foreign countries from Department of Export Promotion, Ministry of Commerce. Moreover

Department of Export Promotion also recommends that this journal could be used as the reference in its trade statistics, research reports, academic articles, and other information in Thai export society excellently.

The information from Exporter Review that was used in this research: as GSP (Generalized System of Preference) situation of Thai products, statistic data in detail such as Thai's margin and competitors in important markets, governmental law and tax direction, etc. of Thai industry, especially in export industry. Moreover, Export Review gave much necessary information about government's action that is used in the analysis of this research as well.

3.2.3 Information from Research Reports

Many of valuable and essential information, which are the important resources in the analysis of this research, are gathered from the research reports of the experts in this field or the well-known academic institutes. These types of extracted resources and their sources are as follows:

- The policies and measures of the important jewelry countries both Thai's supplier, customers and competitors are collected from "*Study Project of Thailand's 5 Important Industrial Product: Case Gem and Jewelry Industry*", (1999) of *Economic Research Centre, Faculty of Economic, Chulalongkorn University*.
- Information about technology and research in jewelry industry are garnered from "*Science and Technology in Gem and Jewelry Industry*", (1998) of *Thailand Research Fund*.
- The general information about production and market of Thai jewelry industry include the opened market agreement of ASEAN Free Trade Area (AFTA) about jewelry industry are gathered from "*Ways and Opportunities in Export and the effects from AFTA: Case gem and jewelry industry*", (1996) of *Thailand Development Research Institute (TDRI)*.
- Tax structure and other information about import gold bar and production gold jewelry are collected from "*Production Situation and Regulation in Gold Jewelry*", (1997) by *Jira Hongladarom and group*.
- The information about the education level of working labour and provided education centers in Thailand in jewelry industry are gathered from "*Direction and Tendency of education arrangement in gem and jewelry aspect to be line in*

with the expansion of industry” (1997) of Department of Export Promotion, Ministry of Commerce by Tawip Siriradsamee.

- The information about structure, potential and competitive advantage of Thai export products are mustered from “*Study Project for assessment the competitive capability of Thai products in the world market*”, (1998) of Department of Business Economic, Ministry of Commerce.

3.2.4 Information from Human Expert Interview

In the data collection of this research, several valuable knowledge and necessary information are received from the interviews with the experts and entrepreneurs in this industry. The interviewees and subjects of interviews are as follows:

- Managing Director of a jewelry company. This company is the big manufacturer in jewelry industry, which export mainly. It has own procurement system for buying raw material both in Thailand and abroad. He gave us the information about the production process, skilled labour requirement, market trend, raw material, potential of Thai jewelry industry, the supporting of the government, etc.
- Research and development manager of a jewelry company. This company also produces as mass production and most of products are export, too. We interviewed him about the production process, technology development, development of worker, designing, market trend, the supporting of the government, and so forth.
- Marketing manager of the export company, which export both jewelry and cut gem to the foreign markets. She advised us about the foreign markets’ characteristics, the importance of joining the trading fair abroad, etc.
- General manager of the mining company. This company has operated mining in Kanchanaburee within the area about 5,000 rai². Most of found gems are blue sapphire, yellow sapphire, and black spinel. He gave us the information about the gemstones that left in Thailand and the possibility to found the new sources of gemstone in Thailand, and also the importing of gemstones.
- Member of board of director and also staffs of Thai Gem and Jewelry Trader Association (TGJTA). TGJTA is the association that unites the entrepreneurs in gem and jewelry industry to help each other to discuss and negotiate with the

² 1 rai equals to 2/5 acre.

governmental and foreign organisations. They gave the information about the operation of the association that help the traders and also the supporting of the government both that have already helped and that they want government to help.

- Staff of Gem and Jewelry Institute of Thailand (GIT). This institute located in Faculty of Science, Chulalongkorn University. GIT is the newest institute about gem and jewelry in Thailand. It provides information service, training on gemmologist and jewelry design, organises national and international conferences, include offers testing service and certifications of gem and jewelry.
- Chief teacher and researcher of Asian Institute of Gemmological Sciences (AIGS). This institute has provided professional training and producing jewelry designer and gemmologist. It also has the testing lab that recognized for the top ten best gemology laboratories of the world. She gave us the information about the education, the requirement of gemmologist and designer, the importance of gem certificate, etc.
- Staff of Department of Export Promotion, Ministry of Commerce in the section about gem and jewelry industry. She gave us about the policies and measures of the government to support jewelry industry.

3.2.5 Information from Seminars

The seminars in jewelry industry aspect also give us beneficial information that is applied to the analysis in this research.

“Top 10 Survival Issues of the Gem and Jewelry in the Next Decade”, which was the co-operation between Thai Gem and Jewelry Trader Association (TGJTA) and The Gem and Jewelry Institute of Thailand (GIT) with the official supporting from Department of Export Promotion, Ministry of Commerce. There are a lot of experts in many fields come to give information and answer questions in several aspects such as:

- Marketing by the managing director of one of the biggest jewelry manufacturers in Thailand;
- Rules of Origin by the expert in international trading laws;
- And other interesting aspects by the director of The Gem and Jewelry Institute of Thailand such as: Internet; new ideas and new designs; branding; certificate or grading reports and disclosure; education; promotion and advertising; royalty and recognition; and unity of Thai entrepreneurs.

“World Standard of Gem and Jewelry” This seminar mentioned about the potential of Thai gem and jewelry industry in the international market, the advantages and disadvantage of Thailand, the supporting of government and the policy that want government to support. The members of this seminar are as:

- First, the vice-president of TGJTA and he is the famous entrepreneur in jewelry industry. He is the managing director of the big jewelry manufacturer and exporter in Thailand.
- Second is the president of leading jewelry manufacturer of Thailand. He is also the vice-president of TGJTA.

3.3 General Information

Gems & jewelry is the industry group that has the significant importance to the development of Thailand both in making income from export and hiring a lot of labours. In 1999, this group had the export value about 1,575.2 million US\$ or 59,820.9 million Thai bath. About hiring labour, because of gems and jewelry industry is the labour concentrated industry, it bring about a lot of hiring in all levels from industrial level to home level.

Gems & jewelry industry group consists into 2 industry as:

1. Gems industry consists of diamonds, colour stones and pearls both un-cutting and finished cutting, including artificial stones.
2. Jewelry industry consists of jewelries that made of gold, silver, platinum, and other valuable metals, including artificial jewelries and fashion jewelries.

The advantage of jewelry industry is it makes low pollution, including this industry could build a lot of jobs in the countryside. Moreover, Thai labour in jewelry industry is well known globally in the skill and elaborate.

Some raw materials that used in jewelry industry could find in domestic area, but major parts have to import from foreign countries. One of main raw materials, colour stones, has to be imported increasingly because of the results of industry expansion. Partly colour stones are import from South America, Sri Lanka, and India. Most of diamonds have to import because there isn't diamond mineral in Thailand. Additional,

valuable metal such as gold, silver, and platinum also have to be import from other countries.

The cost structure of manufacturing jewelry industry consists of raw materials about 70%; labour wages 12% and the rests are the other operating expenses.

3.4 Industry Structure

Jewelry industry has been operated in Thailand for a long-time but mostly there were small size or home producers and they were the production for domestic market only. These products are silver and gold jewelry. Next, they have been developed to diamond and precious stones jewelry for export.

From the information of Industrial Information Center, Industrial Economy Office, in 1996, there are about 390 jewelry producers with hiring labour about 200,000 people. However, there are a lot of small factories that don't register with Industrial Ministry.

About the information from Board of Investment (BOI), there are 93 jewelry producers that had received the support from BOI since 1987-1996 with the register investment about 1,981 million baht. In this investment, there are Thai investment 1,122.3 million baht and foreign investment 858.7 million baht. Moreover, these BOI support jewelry industry used Thai labours about 19,195 people and foreign about 361 people.

Nowadays, there are many jewelry industry both produced for domestic and export market. By the way, the producers for export have to use higher technology in producing jewelry more than the producers for domestic market because they have to compete with many competitors in international market in quality, design and price of products.

The producers for export could be divided into two groups:

1. Thai producers, who develop from producers for domestic markets, Gems exporter and domestic gems traders.
2. Producers, who co-operate with foreign investors (there are about 50% of total producers for export). Most of foreign investors are the jewelry producers in other countries and invest in Thailand for the production base for their groups or their customers in international market.

Additionally, the exporters, who aren't the producer, will buy from the subcontractor. However, jewelry exporters also have the experience in related parts within this industry such as raw materials part (diamond and colour stones), production part, or export part. The most important characteristic of jewelry exporter is they must have the good financial background.

Now there is only one company that has all processing of jewelry industry from mining colour stones until setting jewelry and then exporting. That company is Pranda Jewelry. This kind of investment will be advantage in the time that high market demand because it can increase the production volume. However, if the market demand is low, this kind of investment will be disadvantage because of high operation cost whereas exporters who buy from subcontractors can select the lower cost subcontractors.

3.5 Jewelry Production Process

Jewelry production is the method that brings valuable gems to assemble with setting that made of precious metal such as gold, silver, and platinum. There are 2 methods to produce setting: hand-made production and casting production.

3.5.1 Hand-made production

This production has to use high skilled labour. It usually is used with special designed setting or used when production volume is too low to reach the optimum volume of the machine. The brief steps of hand-made production are as follow:

- Melt the raw material metal
- Roll for forming the setting
- Scrub and abrade for shaping the setting
- Set gem (diamond or colour stone) into the setting
- Polish the setting for luster
- Gilt, Glaze and clean the jewelry

3.5.2 Casting production

This method is used with high production volume and the jewelry that has simple design. The steps of making jewelry setting by casting method could be describe briefly as follows:

- Prepare the sample
- Make the rubber mould
- Make the wax model
- Make the plaster model and melt the wax
- Cast the metal to be the setting
- Clean and trim the setting
- Set gem, polish, and gilt as same as hand-made method

Jewelry industry is the production that has to use a lot of artistries in design, colouring, delicacy and elaboration in size culling and similarity of colour, including assembly gems into setting.

3.6 Industry situation

3.6.1 Effective Rates of Protection³ (ERP)

The research about government's policy in protection or strengthening industry by TDRI in 1997 found that ERP of this industry was about -5.05%. The outcome shows that this industry isn't protected by the government. Thus, this industry might have the opportunity to receive the outcome in lower level than it should be.

3.6.2 Domestic Resource Cost⁴ (DRC)

The domestic resource cost of gems & jewelry industry group was about 0.82 in 1997. Thus, it has the potential in manufacturing for export and it used the cost in domestic lower than income from export.

³ The high potential industry should have ERP more than 0.

⁴ The high potential industry should have DRC less than 1.

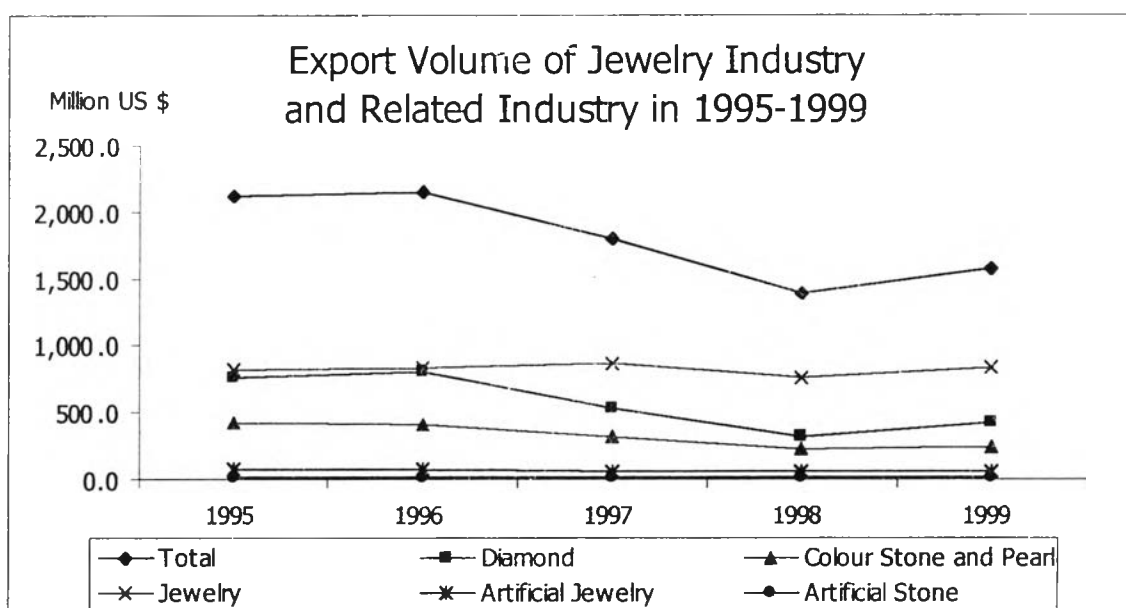
3.6.3 Revealed Comparative Advantage⁵ (RCA)

About the potential of Thai's jewelry industry in competition in global market, RCA is used in determine the level of potential. In 1997, RCA in each product were as follows:

- RCA of genuine jewelry is 4.840
- RCA of artificial jewelry is 3.089

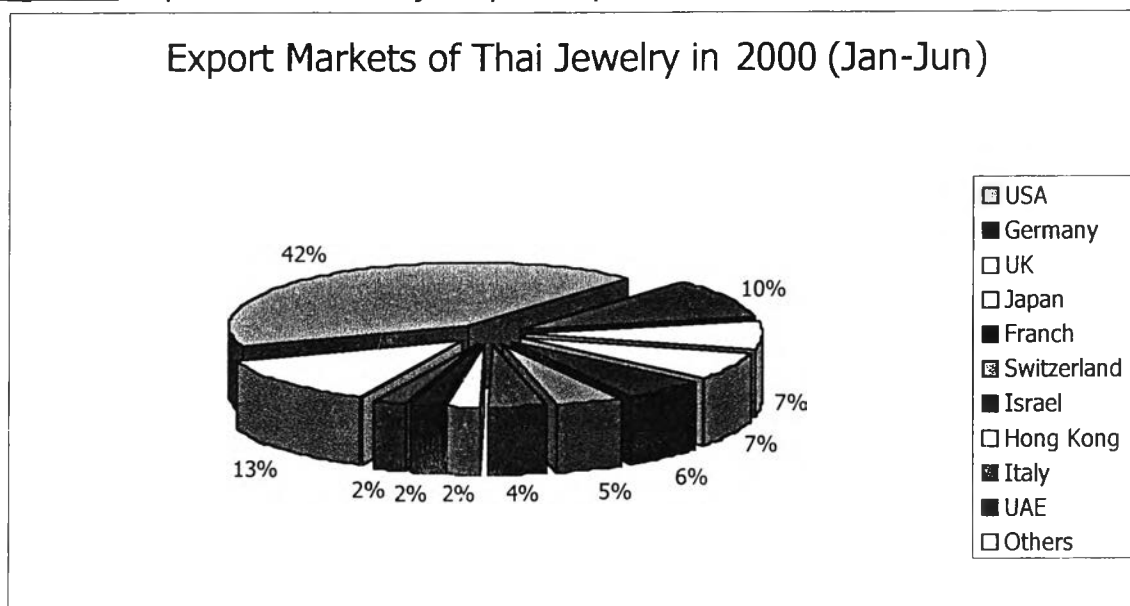
3.6.4 Export Volume and Growth

Figure 3.1: Export volume of Thai jewelry industry in 1995-1999.



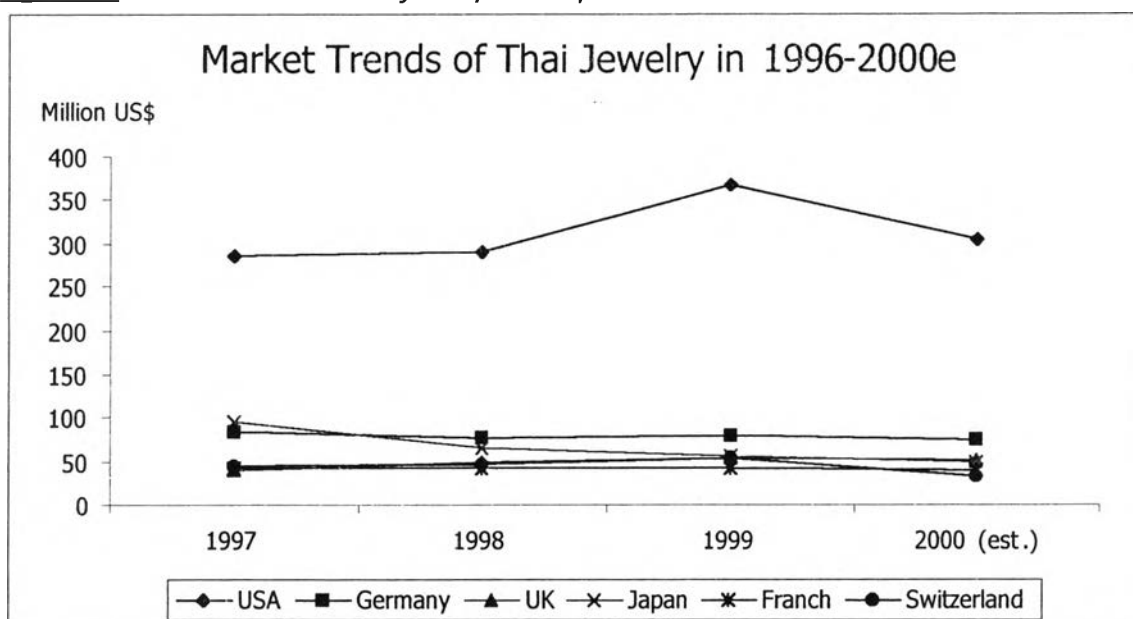
⁵ The high potential industry should have RCA more than 0.

Figure 3.2: Export markets of Thai jewelry industry in first half of 2000.



Source: Trade Statistic Centre, Department of Business Economic

Figure 3.3: Market trends of Thai jewelry industry.



Source: Trade Statistic Centre, Department of Business Economic

3.6.5 Market share

About market share in USA, Thai jewelry had market about 9-10% in past 5 years. Last year (1999) Thai had market share 10.06%, which is the third place in the market. Our competitors are Italy, India, Hong Kong, and Israel, which accounted market share in USA about 29.89%, 11.26%, 9.71%, and 4.82% respectively last year.

Thai jewelry also had the third place market share in EU. Thai had average market share about 8-9% in past 5 years. In 1999, Thai had 9.06% of total in EU. The

competitors in EU market are EU (countries within EU), Switzerland, United Arab Emirates, and Hong Kong, which had market share about 42.17%, 9.57%, 7.39%, and 6.01% in 1999.

3.6.6 Threats and Limited Points

Although jewelry industry is the important industry of Thailand but this industry has not be fully developed because there are many limited points all in parts of raw material, labour, market and also technology as follows:

- *Lack of raw materials:* At this time, we need to import a lot of raw materials from foreign countries, especially in diamond and valuable metal.
- *Lack of middlemen:* The industry need to have the middlemen who bring the work in process products from big producers to small producers or community groups. This industry has to use the trustfulness within the producers.
- *Lack of Technology:* Thai's jewelry industry lacks of technique, accuracy method and convinced way to develop quality of jewelry. In addition Thai also lacks of setting design and also lacks of high quality jewelry design.

3.7 Market Segmentation

Before analysing the characteristic of Thai jewelry industry, we need to know what exactly market that most of Thai jewelry industry is. Markets consist of buyers, and buyers differ in many ways. Thus, market segmentation represents an effort to increase an industry's targeting precision. The jewelry market can be carried out at three levels: low-end, medium-end and high-end market.

The major segmentation variables for jewelry products are:

- *Quality of products*
- *Price of products*
- *Design*
- *Income of buyers*
- *Social class of buyer*
- *Etc.*

3.7.1 High-End Market

In jewelry industry, the high-end or premium product is the product that has the modern and fashionable design and it is necessary to have very well-know brand name, for example Chaumet, Cartier, Chanel, Fred Boucheron, Patek Phillippe, Bulgari, etc.

The premium product usually made of high quality and expensive raw materials such as high-grade diamonds and precious stones. It is, mainly, produced by up-to-date and high accuracy machines and controlled the quality in every process. This will make the high quality and accuracy product. Certainly, with the quality of product and first-class design, premium jewelry product has very high price that favour in the rich and high society buyers. The important producer countries of premium jewelry product are Switzerland, Italy, UK, France, and Israel.

3.7.2 Medium-End Market

Medium-end market is the biggest size market of jewelry business. The product in medium-end market is the mid range quality product. That brings some production technology to help along with the use of skilled labour in the production. Including, the product in this market also has beautiful and elaborate design, although it doesn't need to have very modern design. The design of this product may be the own producer's design or the imitate design from hi-end product. Moreover, this product should have own brand name.

Raw materials, which use in this production, mainly are the natural gems and other precious metal such as gold, silver and platinum. The producers of the mid range products should have some production skilled and also ought to have not high labour cost, which doesn't increase too much cost of production. The product has the mid range price, which is the market of most of buyers. The important producer countries of mid range product are Hong Kong, USA, Canada, and Turkey.

3.7.3 Low-End Market

The product in low-end market competes in pricing. The trading usually has high volume and is in low price per piece. The product in this market does not need to have

complicated design and any brand name. Most products have low quality, which produced by unskilled and cheap labour with few technology and machines.

Because the competition factor in this market is the price, so the cost of production has to be as less as possible. Most of them made of cheap raw materials such as cheap and low quality gems or imitated/syntactic gems. The major producer countries of low-end product are China, Vietnam, and India.

After we consider characteristics of all jewelry market from high-end to medium-end and low-end markets, we believe that most of Thai jewelry are in medium-end market because of the reasons as follows:

- Although most of Thai jewelry products have high quality but they do not have the standard, including they do not have well-known brand name.
- Jewelry products from Thailand have the weakness in designing. Thai designing does not accept in the international market. Most designs are the imitating from foreign products or the buyers' designs.
- Thailand does not have own up-to-date technology. In Thailand, there are only few modern machines that can produce high accuracy products like in the hi-end producer as Italy.

As a result, Thai jewelry product cannot be in high-end market because Thai producers cannot compete in the high quality with trendy design with other producers in hi-end market. On the other hand, the other reason is:

- Thailand has higher labour costs than other competitors in low-end market such as China and India.

Thailand cannot compete with the very low pricing in low-end market as well. Therefore, the target market of most Thai jewelry products is medium-end market.