THE PERCEPTION OF IMPORT’S BUYER SELECTION’S CRITERIA OF INDUSTRIAL MACHINERY PRODUCT FROM JAPAN, GERMANY, AND UNITED STATES: AN INVESTIGATION ON TEXTILE INDUSTRY IN THAILAND

Adisak Chandpralalert*

Abstract

The main objective of this study was to investigate the nature and relative importance of selection criteria of a foreign supplier of industrial machinery products in both supplier and product characteristics among Japanese, the United States, and German exporters. The research model and research hypotheses were developed of three industrial buying behavior concepts; one by Webster & Wind (1972), one by Sheth (1973), and one by Samli, Grewal & Mathur (1988). The survey method was used in this research study through a personal interview of 310 textile companies that imported textile machinery product from Japan, the United States, and Germany. The statistical technique of an analysis of co-variance (ANCOVA) was used in this research study. The results indicated that there was a significant relationship between selection criteria and decision making for buying industrial machinery products by Thai import purchasing managers. There were significant differences of product characteristics and supplier’s country image among Japanese, the United States, and German exporters by Thai import purchasing managers’ perceptions.

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Meanwhile the satisfaction with a past purchase and supplier’s characteristics show no direct effect on the selection decision on a foreign supplier by Thai imported purchasing managers.

**Problem Background**

As global economic growth occurs, international trade is becoming increasingly important (Beamish, Killing, Lecraw, & Crookell, 1991). This leads to high competition in the world market. The understanding of marketing in all cultures is a significant element to consider in all exporting firms in any firm or nation. Many firms and nations need to improve their abilities to compete successfully in the international marketplace in order to capture a larger market share.

Today, some of the less developed countries (LDCs) have emerged in the world market as a large proportion of the consumers in international marketplaces, especially in Asian countries. These consumers have increased their purchasing power in world trade. Thailand is one Asian country that has increased its role as an importer and exporter in the world market. Thailand has drastically increased its amount of importation since 1991.

The table 1 indicates that Thailand is likely to be a huge market in the future. It is an exciting marketing for exporting countries. This is particularly true for industrial products that are of major importance in the business system of the nation, composing more than 80 percents of total imports. The understanding of Thai industrial importers’ buying behavior is necessary to the success of the Thai market.

There are three Thai major industrial exporting countries--Japan, the United States, and Germany. These three countries are considered the biggest exporters of industrial products

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Industrial Goods</th>
<th>Consumer Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>1,833</td>
<td>279</td>
<td>151</td>
</tr>
<tr>
<td>1997</td>
<td>1,924</td>
<td>256</td>
<td>161</td>
</tr>
<tr>
<td>1998</td>
<td>1,774.1</td>
<td>169.7</td>
<td>154.5</td>
</tr>
<tr>
<td>1999</td>
<td>1,907.7</td>
<td>151.8</td>
<td>159.7</td>
</tr>
<tr>
<td>2000</td>
<td>2,494.2</td>
<td>222.3</td>
<td>199.6</td>
</tr>
<tr>
<td>2001</td>
<td>2,756.7</td>
<td>269.9</td>
<td>224.9</td>
</tr>
</tbody>
</table>

Source: Bangkok Bank 2002
Table 2

Thai’s Importation of Industrial Machinery in 1990-2001 (in Billion Baht)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>518</td>
<td>492</td>
<td>420.3</td>
<td>464.4</td>
<td>615.7</td>
<td>616.5</td>
</tr>
<tr>
<td>USA</td>
<td>229</td>
<td>267</td>
<td>249.7</td>
<td>243.5</td>
<td>293.6</td>
<td>318.7</td>
</tr>
<tr>
<td>Germany</td>
<td>93</td>
<td>91</td>
<td>76.2</td>
<td>60.2</td>
<td>78.4</td>
<td>113.8</td>
</tr>
</tbody>
</table>

Source: Bangkok Bank 2002

Table 2 indicates that Japan is the largest exporter of industrial machinery to Thailand, while the United States and Germany are the second and third exporters of industrial machinery, respectively. Thus, in order to be competitive exporters, these three major exporting industrial countries should understand Thai importer buying behavior and the important variables involving supplier selection decisions. This information can lead them to be leading exporters in the Thai market and other Asian countries.

Similarly, as the growth rate of Thai’s importation has continued to increase, the selection of foreign suppliers or exporters will become more important than ever. Consequently, Thai import companies’ purchasing managers have to seek out the best supplier in order to obtain competitive advantage in the international marketplace. Therefore, an understanding of the elements of product and supplier selection criteria can help to make buying decisions more effective and efficient.

Literature Review

In the past two decades, many researchers have created models of buying behaviors such as Robinson, Faris & Wind’s buygrid model (1967); Wind’s industrial source loyalty model (1970); Webster & Wind’s organizational buying behavior model (1972); Sheth’s industrial buying behavior model (1973); and Samli, Grewal & Mathur’s integrative model of international industrial buyer behavior (1988).
First, organizational buying decisions involved a buying center which is composed of the roles of user, influencer, buyer, decider, and gatekeeper. Various individuals within the organization occupy these roles at each stage of the buying process. There are many different variables that influence these individual buying behaviors such as price, quality, service, and individual psychological processes. The determinants of supplier choice can be classified into two categories: 1) task variables, which concern product characteristics including product quality, design, price, delivery, and service availability; and 2) non-task variables, which include exporter characteristics such as the organizational buyer’s perceptions of suppliers’ reputations, knowledge, trustworthiness, co-operativeness, orientation to the buyer, and personal qualities.

Second, according to the model the organizational buying process has four stages: 1) problem recognition, 2) assignment of buying authority and responsibility, 3) a search process for identifying product offerings and for establishing selection criteria, and 4) choice process for evaluation and selection of alternative suppliers.

Webster & Wind’s model (1972) is a principal theoretical base of organizational buying behavior which has been extensively studied by the other researchers. For example, Sheth (1973) developed a model of industrial buyer behavior which consists of four essential components: 1) expectations of individuals involved in the decision, 2) organizational buying processes, 3) the decision-making processes, and 4) situational factors. Later, Samli, Grewal & Mathur (1988) proposed an integrative model of international industrial buyer behavior that included six groups of factors influencing buying units functions. They are individual factors, organizational factors, environmental factors, societal/cultural factors, government roles and regulation, and uncertainty factors.

In addition, supplier selection is an important phase of the organizational buying process (Nydick & Hill, 1992). These researchers found that buyers generally establish a set of selection criteria to evaluate the potential suppliers. They also indicated that the basic criteria are price, product quality, delivery, and service. Similarly, Mummalaneni, Dubas, Chao, and Chiang-nan (1996) stated that purchasing managers need to periodically evaluate supplier performance in order to retain those suppliers who meet their requirements in terms of several performance criteria. There are six attributes that are frequently used as performance criteria. They are on-time delivery, quality, price/cost targets, professionalism, responsiveness to customer needs, and long-term relationships with the purchasing company. Many existing researches have studied various criteria used to select and evaluate suppliers.
In an era of global sourcing, the buyers (importers) cannot only consider the importance of supplier selection criteria, but they also consider other important factors such as country-of-origin effects, loyalty effects, the impact of risk, and the impact of government and regulation. This research study emphasizes only the impact of country-of-origin, and the impact of loyalty (Schooler’s 1965; Nagashima, 1970; and Bilkey & Nes, 1982). For instance, Lawrence, Marr & Prendergast (1992) concluded that country-of-origin stereotyping is often a determining factor in the buying process. Similarly, Loyalty is the behavior of choosing the same industrial product or supplier as the previous one. When consumers, or industrial buyers, gain experience and confidence in the products or services, a repeat purchase is made (Cunningham, 1956). This is known as brand or consumer loyalty. Industrial source loyalty can directly affect industrial buyer behavior (Wind, 1970). Bubb & Rest (1973) concluded that loyalty is one of the major determinants in industrial buying decisions.

Research Questions

The following are the research problems of the present study:

- • What are the important criteria that influence Thai import purchasing managers selection decisions for buying textile machinery products?

- • Do Thai import purchasing managers differ in their evaluation of these three Thai major exporters- Japanese, the United States, and German of textile machinery products on both supplier and product characteristics?

- • Do country-of-origin (stereotypes) and past purchasing experience (loyalty concepts) influence supplier selection decisions by Thai import purchasing managers?

Purpose of the Study

This study focuses on the importer’s side of international trade by investigating Thai import buyer decisions’ criteria for selecting machinery product for textile industry from Japanese, the United States, and Germany. Firstly, the purpose of this study is to find out what the important selection criteria are for foreign suppliers to Thai import purchasing managers for textile industry. Secondly, this research surveys Thai import purchasing managers’ evaluations of Japanese, the United States, and German industrial exporters’ characteristics and the nature of their products (textile machinery product). Finally, the importance of individual characteristics of Thai import purchasing managers perceptions are examined—for example purchasing experiences and stereotypes (country-of-origin).
Importance of the Study

As the market becomes globalized, an increasing number of firms that once concentrated on domestic sourcing are now seeking their supply bases from around the world (Min, 1994). To remain competitive, Thai textile companies should select the best of both suppliers and products with regards to significant factors, the environment, and situations. Thus, the study of selection criteria can help Thai textile companies choose the best alternatives for their productions. The transaction with a good supplier and the quality of the product can help the Thai textile Company in competing with other companies in the world market, and lead to company success. Moreover, this generates higher benefits and profitability for the company in the trading business.

On the other hand, the understanding of both the perception of Thai import companies’ purchasing managers and the buying behavior of Thai import organizations can also help the three major industrial exporters—Japan, the United States, and Germany to develop effective marketing strategies to succeed in the Thai market.

Research Hypotheses

H1: There is a significant relationship between country-of-origin stereotypes and the purchasing decision of a foreign supplier by Thai importer purchasing managers/members

H2: There is a significant relationship between the past purchasing experiences of Thai importer purchasing manager/member’s and purchasing decisions of foreign suppliers.

H3: There is a significant relationship between selection criteria and purchasing decision of buying textile machinery products by Thai import companies.

H4: There is a significant relationship between supplier characteristics among Japanese, the United States, and German suppliers/exporters and purchasing decision by Thai importer purchasing managers/members.

H5: There is a significant relationship between product characteristics among Japanese, the United States, and German suppliers/exporters and purchasing decision by Thai importer purchasing managers/members.

Research Methodology

Like most of the international business field, most studies in this field use a cross-sectional procedure. However, this study uses primary data based on the survey result. The population of this study therefore was textile companies operating in Thailand. The sampling frame used to select respondents for this research was
Figure 4
Importer Buying Behavior Process Model

Importer Buying Behavior

Buying Process

1. Problem Recognition

2. Assignment of Buying Authority and Responsibility

3. Search Process for Identifying Product Offering and for Establishing Selection Criteria


1) Selection Criteria
2) Supplier Characteristics
3) Product Characteristics

Buying Decision Influencing Factors
1) Past Purchasing Experience
2) Supplier Country Image
obtained from two directories. The names and addresses of the textile company in Thailand were obtained from these directories. The 2001 edition of the “Thailand Textile Institute (THTI)” and the 2001 edition of the “Directory of Thai Industry and Business 2001” were used. When this research began, the 2,500 sample frame was the most current information available. The Thailand Textile Institute listed the company addresses and telephone numbers in Thailand for each of the firms. This was supplemented by the Directory of Textile Firms Operating in Thailand. Management level positions (purchasing managers, directors of international operations, general managers, managing directors, board of directors, vice-presidents, presidents, and CEO’s) were, therefore, determined to be the most likely persons within the organization to involve in the purchasing decision-making and were selected as the respondents to represent the sampled population. A systematic random sampling technique was used to increase generalizabilities of the research results.

For this study, there were three steps in the data collection process. First, the questionnaire was delivered through the mail to a specific person within the organization who participated in purchasing decision for imported products. A cover letter was enclosed with the questionnaire to inform the respondent of the objectives, significance, and usefulness of the research. The letter also contained the appointment time schedules for the respondent to consider. This was done to increase the credibility of the research and to have the right person answer the questions.

Second, the interviewers made a phone-call to each respondent to arrange an interview appointment. This phone call was also used to reassure the respondents of the importance of the study and help them feel comfortable about answering the questions.

Third, six interviewers were selected and trained to conduct the personal interviews by a research instructor who had a clearly understanding of this research study. The interviewers were given a clear explanation of all questions on the questionnaire, as well as the procedures for data collection. This training of interviewers was used to reduce the misinterpretation of questions by the respondents, as well as to decrease the rate of unanswered questions.

Finally, the total respondents of 310 textile companies worthy of analysis were collected. This accounted for about 12.4 percent of the total target population. The sample size was considered adequate to be representative of the target population.
Reliability and Validity Tests

This research study used Cronbach's alpha to measure the internal consistency of the instruments which is “the most accepted formula for assessing reliability of a measurement scale with multi-point items (Peter, 1979, p.8).” Table 3 displays the coefficient alpha of all multi-item variables in this research questionnaire. The coefficient alpha of the “selection criteria” variable was .83.

However, the coefficient alphas of perception of supplier characteristics of Japanese, the United States, and German exporters were .71, .73, and .77 respectively. The coefficient alphas of perception on product characteristics of Japanese, the United States, and German exporters were .65, .68, and .63 respectively. Since most constructs in the study had relatively high alpha coefficient scores, it ensured that the questions were quite reliable and useful for this and future research.

Table 3
Coefficient of Reliability Test (Cronbach Alpha)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Decision Participation</td>
<td>.83</td>
</tr>
<tr>
<td>Perception toward Foreign Supplier Characteristics:</td>
<td></td>
</tr>
<tr>
<td>Japan Exporter</td>
<td>.71</td>
</tr>
<tr>
<td>United States Exporter</td>
<td>.73</td>
</tr>
<tr>
<td>Germany Exporter</td>
<td>.77</td>
</tr>
<tr>
<td>Perception toward Foreign Product's Characteristics:</td>
<td></td>
</tr>
<tr>
<td>日本</td>
<td>.65</td>
</tr>
<tr>
<td>United States Exporter</td>
<td>.68</td>
</tr>
<tr>
<td>Germany Exporter</td>
<td>.63</td>
</tr>
</tbody>
</table>

Prior to the data collection stage, 30 sets of questionnaire were sent to 30 Thai textile purchasing managers to be certain that every single question would be fully understood. Subsequently, content validity and reliability was used to check to be certain that the data the collection form was valid. In detail, the panel of evaluators examined each question in the instrument and the research objectives to make sure that things to be measured were measured and would yield the best possible results for generalization. Eventually, 700 copies of Thai version questionnaires were sent to all individuals involved in this study.
Data Processing and Analysis

The most appropriate analytical tool for hypothesis (H₁ to H₅) is Analysis of Covariance (ANCOVA) because it is used to measure the relationship between dependent and several independent variables. The data type was applied to both metric and category data. In this case, there is one dependent variable (buying decisions of imported machinery products), and five independent variables (product price, product quality, reliability of delivery, availability of after-sales service, and supplier technical skills). This hypothesis will be supported if each of the independent variables significantly relate to the dependent variable at p<.05.

Research Findings

Table 4: Summary of Analysis of Co-Variance (ANCOVA) with Category and Metric Variables

<table>
<thead>
<tr>
<th>Category Variables</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past Experience (Japan)</td>
<td>.974</td>
</tr>
<tr>
<td>Past Experience (US)</td>
<td>.531</td>
</tr>
<tr>
<td>Past Experience (Germany)</td>
<td>.609</td>
</tr>
<tr>
<td>Country of Origin</td>
<td>.029</td>
</tr>
</tbody>
</table>

Metric Variables

<table>
<thead>
<tr>
<th>Metric Variables</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection Criteria</td>
<td>.000</td>
</tr>
<tr>
<td>Supplier Characteristics</td>
<td>.098</td>
</tr>
<tr>
<td>Product Characteristics</td>
<td>.005</td>
</tr>
</tbody>
</table>
Five hypotheses were investigated in order to answer the research questions. Data were obtained from three hundred and ten Thai import purchasing managers through personal interviews. The data was first analyzed by descriptive analysis, which included analysis of co-variance (ANCOVA) as the method to test all hypotheses.

According to the ANCOVA result, the overall model is considered to be significant at the coefficient 0.000 while the R-square was high and can predict the model at 0.38. The result means that the model has power to predict the overall equation more than 38 percent level of confidence, which was considered as significance.

For the hypothesis testing, firstly, the supplier’s country of image positively affected a purchasing manager/member’s purchasing decision of a foreign supplier at the level of significant 0.029. According to the positive effects of the supplier’s country image, a favorable country image can increase the purchase volume of textile machinery products from those countries.

For hypothesis two, past purchasing experience does not have any differences to purchasing decision of Thai purchasing managers since the significant level was at 0.974, 0.531, 0.609 respectively. This can be explained by the fact that technology changes and upgrades all the time especially in most industry. In this circumstance, the past purchasing experience therefore does not influence the purchasing decision in Thai textile industry by Thai imported purchasing decision.

For hypothesis three, there was, however, very high difference between the selection criteria on a foreign supplier of textile machinery products as measured by purchasing value scales at significant level 0.00. It was found that the selection criteria including the product price, quality, reliability of delivery, availability of after-sales service, and supplier technical skills were important to decision making for buying textile machinery products by Thai import purchasing managers. The research finding was along with many previous research by Shipley (1985), Lee & Dobler, 1971, Monore & Dodds, 1988, and Lehmann & O’Shaughnessy, 1974; Webster, 1979).

For hypothesis four, Thai import purchasing managers indifferently perceived those three textile machinery exporters—Japanese, the United States, and German exporters in supplier characteristics including supplier technical skills, supplier commercial skills, and supplier interpersonal skills. These can be explained by the fact that most textile machinery suppliers have common similarities and strategies in their technical skills, commercial skills, and interpersonal skills related to this industry. The research finding was also along with Lehman & O’Shaughnessy (1982), who investigated the ~ criteria
used in buying different categories of products. The researchers found that if the products became less standard, economic criteria would decrease in importance while performance criteria would increase in importance. Therefore, the research findings show there was no significant difference (Sig = 0.098) between supplier characteristics and purchasing decision.

Finally, product characteristics for hypothesis five including product price, product quality, product performance, product durability, and product design influence in purchasing decision for Thai purchasing managers at the level of significant 0.005. The results showed the product characteristics were perceived some differences among Thai import managers. In addition, the results of the mean ratings from Thai import companies on product characteristics indicated that Japanese exporters have the highest scores in total for product price, quality, performance, durability, and design, followed by German and the United States exporters, respectively.

**Summary**

Since it is important to understand Thai import companies’ decisions to select textile industrial machinery products, this research investigates the significant selection criteria used to evaluate foreign supplier of textile machinery products by Thai import purchasing managers. Moreover, this research also examines how Thai import companies evaluate three major textile machinery exporters—Japanese, the United States, and German exporters in both supplier and product characteristics. In addition, the country-of-origin stereotypes, selection criteria, and past purchasing experiences were examined. Five hypotheses were investigated in order to answer the research questions. The findings of the study provide several managerial implications for foreign supplier (exporters) of industrial textile machinery products, especially in the Thai market.
Table 5

Summary of Hypothesis Testing Results

H₁: Supported Significant at p<.05
(There is a significant relationship between country of origin stereotypes and the degree of participation in purchasing decision of the buying for buying industrial machinery products).

H₂: Unsupported Significant at p>.05
(There is no significant relationship between past purchasing experiences and the purchasing decision of a foreign supplier by Thai import purchasing managers).

H₃: Supported Significant at p<.05
(Due to the selection criteria explained only 5% of variation in product purchase value yielding a minimal effect size and p<.05, there is a significant relationship between selection criteria and purchasing decision making for buying industrial machinery products by Thai import companies' purchasing managers/members).

H₄: Unsupported Significant at p>.05
(There is no significant relationship between supplier characteristics among Japanese, the United States, and German suppliers/exporters and purchasing decision by Thai import purchasing managers).

H₅: Supported Significant at p<.05
(There is a significant relationship between product characteristics among Japanese, the United States, and German suppliers/exporters and purchasing decision by Thai import purchasing managers).
References


