Chapter 4
Research Methodology

This chapter presents research methodology. It consists of sample design, instrumentation, questionnaire design, data collecting, data recording, data processing and analysis, and measurements. Research uses a survey approach. Framework for export success based on Porter's diamond model is examined using food export industry in Thailand.

Sample Design

The sample design consists of industry selection, sample selection, and population frame. Criteria for selecting industry are presented. Population frame is determined. Sample size and sample selection are identified.

Industry Selection

The study selects an industry to suit the purposes of this study. Selected criteria are based on the industry's export performance and industry's potential to enhanced and developed. Food industry shows good export performance. It is in the top 5 ranking in term of export value for the past 10 years, from 1988 to 1997. Food industry is acknowledged and supported by the government. The Seventh National Economic and Social Development Plan identifies food as one of the industries supported by the government. Ministry of Commerce supports food industry in term of export promotion. Ministry of Industry supports food industry in term of technology and R&D support. Food industry has potential to develop further since Thailand is an agriculture country. Thailand is the major food exporter in Asia (National Food Institute, 1997). Thailand is among largest exporter of rice, sugar, tapioca, fowl, seafood products, and tropical fruits. Thai food is well known and accepted for its taste and nutritional value.

Sample Selection and Population

The sampling frame for this study is the food exporting companies in Thailand. Lists of Thai food exporters are obtained from published food and beverage directory, the Kompass Direct for Food and Beverage 1998. The population of this study is 1,518 companies. Past researches show a low response rates ranging from 2.3 percent through 34 percent (Bilkey, 1987; Walters and Samiee, 1990; Grosse and Zinn, 1991). Hair Jr. et.al. (1995) suggests preferred sample size for factor analysis of 100 or larger. Preferred sample size for multiple regression analysis is at least five times the number of all variables to be used in the model. Since past researches show low response rates, to ensure sufficient number of responses, this study selects the sample size equal to the whole population.

Instrumentation

Data is obtained through a designed questionnaire. The questionnaire includes series of questions concerning respondent's profile, company's profile, company's export performance, internal and external factors affecting company's export performance, respondent's opinion on measures of export success, and open ended questions to obtain respondents suggestion on government policies and other factors leading to food export success. Questionnaire is designed to obtain both objective and subjective measures.

To ensure face and content validity and reliability, measures of variables being studied are designed and revised based on reviewed literature and expert opinions. Questionnaire is initially developed based on measures of the past researches in the fields of export and international competitiveness. Expert opinions are acquired through in-depth interviews of top-executives in food industry. Expert opinions are conducted for modifications of questions and scales to suit the Thai environment. Their views on export success factors and external factors affecting performance are also obtained. Pre-test of questionnaire is conducted to ensure understandability and interpretability of

questionnaire items, relevancy of questions, interests, sequence of questions, and time taken to complete the questionnaire. Final modification to questionnaire is performed before final distribution.

Questionnaire Design

A questionnaire (see Appendix A) is developed in 2 languages, one in Thai and the other in English. Thai version of questionnaire is distributed to Thai executives, and English version of questionnaire is distributed to non-Thai executives. The questionnaire contains 3 questions elicited information on the respondent, and 9 questions on characteristics of the exporting firm. Additional 4 questions identify export description. Export performance is measured through an average of export sales growth, and an average of export profit. Questions to obtain opinion on chance events in Thailand, in importing countries, and in foreign competitors affecting Thai food export success are designed. There are questions with six-point ranking scale on both important level and actual current condition concerning factors contributing to the export success of firm. These factors consist of 6 items on basic factor conditions, 7 items on advanced factor conditions, 4 items on demand conditions, 9 items on strategy, 2 items on structure, and 2 items on domestic competitors. Six-point ranking scale on important level and three choices identifying actual condition are designed for 10 items on related and supporting industries and 3 items on government administration contributing to overall success of exporting. Two open-end questions are provided for respondent to suggest government policies and other factors contributing to the successful export.

Data Collection Procedures

Procedures for distribution and collection of questionnaire:

1. A telephone addressing participating firms in order to locate the responsible executive and to explain the research purpose prior to sending out the questionnaires is performed on the whole sample.

2. Cover page, questionnaire, and self-addressed postage-paid return envelope are mailed out addressing the responsible executive of exporting firms within three days after the initial telephone.

3. A reminding telephone is called upon these executives two weeks after the initial call.

4. Second follow-up call is conducted three weeks after the first reminding call.

Data Collection and Record

After the initial telephone calls to executives, questionnaires are mailed out. Reminding calls and follow-up calls are conducted. Data are collected through returned mail. Table 4.1 shows questionnaire responses.

Table 4.1 Questionnaire Responses

Responses Description	Number of Companies	Number of Companies	%
Total Sample	1,518		
Liquidated or moved away Companies	227		
Subsidiary company	122		
Cease from export	86		
Total distributed questionnaire		1,083	100
Non-return questionnaire Response		807	74.52
Returned, unanswered		108	9.97
Unusable returned		33	3.05
Usable returned		135	12.47
Early responses		89	8.22
Late responses		46	4.25

The initial telephone reviews that 227 companies liquidate or move away from listed premises, 122 companies are subsidiary companies, and 86 companies cease from exporting.

Total 1,083 sets of questionnaire are mailed out. There are 108 returned but unanswered questionnaires. Total 168 questionnaires were returned answered. Of the 168 returned mail, 33 were discarded as unusable responses because respondents do not provide answer on company's export profit or sales growth. There are 135 usable responses. Returned responses within a month of distribution are considered early responses. Returned Responses after one month of distribution are considered late responses. The number of early responses is 89, and the number of late responses is 46. Data is coded and electronically recorded using SPSS version 8.

Data Processing and Analysis

Prior to data analysis, a statistical test is performed to ensure that returned responses are sufficient to represent the whole population. Armstrong and Overton (1977) suggest that information provided by late responses is comparable to those of non-responses. Technique is to compare demographic characteristics of responses and non-responses. Levene's test of homogeneity of variances and t-test for equality of means are performed. Table 4.2 shows the comparison of early and late responses on year of establishment, number of employees, and export sales value.

Table 4.2 Early vs. Late Responses comparison

Characteristic	Levene's Test		t-test	
	F value	Sig.	T value	Sig.
Years of establishment	0.897	.345	0.145	.885
Number of employees	3.324	.071	0.732	.466
Export sales value	0.620	.432	0.935	.351

Note : n = 135

Both Levene's test and t-test on demographic characteristics shows no significant differences at 95% confidence interval in variances and in means of early and late responses. The test implies that responded sample is a representation of the population. SPSS version 8 is used to analyze responded data.

Statistic software, SPSS version 8 is used to analyze data received. Internal consistency of measures is performed using Cronbach's alpha reliability test. Factor analysis is applied to confirm measures of each variable being studied. Each of the hypotheses on relationship between export performance and factors affecting it is tested, using Pearson's product moment correlation for data with normal distribution, otherwise Kendall's tau b correlation coefficient is applied. Multiple regression analysis is utilized to test the export performance framework.

Measurement

The proposed framework of export performance is consisted of 5 constructs and 2 external environment factors. The 5 constructs of export performance are factor conditions, demand conditions, firm's structure and strategy, domestic competitors, and related and supporting industries. The 2 external environment factors are chance events and government policies. Final revisions of measures for each construct are following explained.

Export Performance

Measures of export performance are export profit and export sales growth. Financial crisis in 1997 caused a large fluctuation in profits and sales value. To overcome financial crisis effect on export performance, a five year average of export profit, and a five year average of export sales growth are used as export performance measures. Respondents are asked to provide profit and growth either in percentage or in value for export operation from 1993 to

1998. Profit from export and export sales growth are objective measures of export performance.

Factor Conditions

Factor conditions are classified into 2 categories, a basic factor condition and an advanced factor condition. Basic factor condition is measured using 6 items, raw material attributes, and labor attributes. Advanced factor condition is measured using 7 items, human resource attributes, and production and technology attributes. Each of these items is scored on 2 semantic six-point rating scales. One scale is for rating the importance of items towards export success, ranking from "not important" to "most important". Another scale is for rating the actual current condition, ranking from "none/not agree" to "most agreed". Basic factors are factors external to the firm. Advanced factors are factors internal to the firm.

Demand Condition

Domestic demand condition is measured using 3 items, size of the market, market growth, and sophisticated demand. Each of these items is scored on 2 semantic six-point rating scales. One scale is for rating the importance of items towards export success, ranking from "not important" to "most important". Another scale is for rating the actual current condition, ranking from "none/not agree" to "most agreed". Demand conditions are factors external to the firm.

Firm's Structure and Strategy

Firm's structure is measured using 2 items, export department, and export commitment. Firm's strategy is measured using 9 items, sales plan, customers plan, delivery, quality and quantity control, customer relationship, cost strategy, differentiated strategy, brand name, and made in Thailand identification. Each of these items is scored on 2 semantic six-point rating scales. One scale is for rating the importance of items towards export success,

ranking from "not important" to "most important". Another scale is for rating the actual current condition, ranking from "none/not agree" to "most agreed". Firm's structure and strategy are factors internal to firm.

Firm's Domestic Competitors

Level of domestic competition and its importance toward export success are measured. The item is scored on 2 semantic six-point rating scales. One scale is for rating the importance of items towards export success, ranking from "not important" to "most important". Another scale is for rating the actual current condition, ranking from "none/not agree" to "most agreed". Competitors factor is factor external to firm.

Related and Supporting Industries

Related and supporting industries are measured using 10 items. These items are domestic transportation system, international transportation system, telecommunication system, utility system, finance and banking system, insurance system, packaging industry, machinery industry, food additive industry, and bio-technology industry. Each of these items is scored on a semantic six-point rating scale for its important level. Rating of the importance of items towards export success, ranking from "not important" to "most important". Actual current condition is measured on three-point scale. The actual current condition is defined with "improvement required", "not concerned", and "satisfactory". Related and supporting industries factor is factor external to firm.

Chance Events

Chance events have effects on export performance but they are neither controllable nor predictable. Respondents are asked to identify effect of selected chance events towards export success. Chance events are grouped into chances occurred in Thailand, chances occurred in importing countries, and chances occurred in competing countries.

Government Policies

Interview and pre-test show that even though respondents aware that government policies influence export performance, they do not regard government policies as having critical effects on export performance. Companies modify or adjust their business plans according to government policies. There are items of government administrations with visible effects on export operation. These items are customs department administration, tax exemption and tax return system, and export promotion. Each of these items is scored on a semantic six-point rating scale for its important level. Rating of the importance of items towards export success, ranking from "not important" to "most important". Actual current condition is measured on three-point scale. The actual current condition is defined with "improvement required", "not concerned", and "satisfactory". An open-end question is provided for respondent to suggest government policies required to improve export performance.