

CHAPTER III

RESEARCH METHODOLOGY

This chapter will discuss about research methodology. It provides a step by step procedure in order to understand how this study can be conducted. First of all, research question definition will be defined. Thesis design, explaining the techniques and methods used for data collection including the population that will be describes about the target respondent. It will classify the study frames, population size and questioned procedure. Moreover, it still explains how to gather data for analysis. In the research instrument, the researcher will describe a structure of instrument or questionnaires which comprise of evaluation of measurement scale, tool or technique used in analysis. Finally, the data collection part, process and method of data collection will be mentioned.

3.1 Problem definition

An understanding the survey industry, air freight forwarder industry must be clearly defined to understand the research questions. After carefully studies on various literatures as well as an interview, thesis questions are specified. The main research problem is the lacks of effective tangible tools in evaluate service quality. Some are too difficult and take too much time. This problem reflects a mistaken between customer needs and carriers service offered or keen on. This thesis aims to clarify the actual needs of air freight forwarder, search areas for improvement, and look for the most appropriate suggestions for air carrier to develop the services to meet the requirements definitely.

3.2 Thesis design

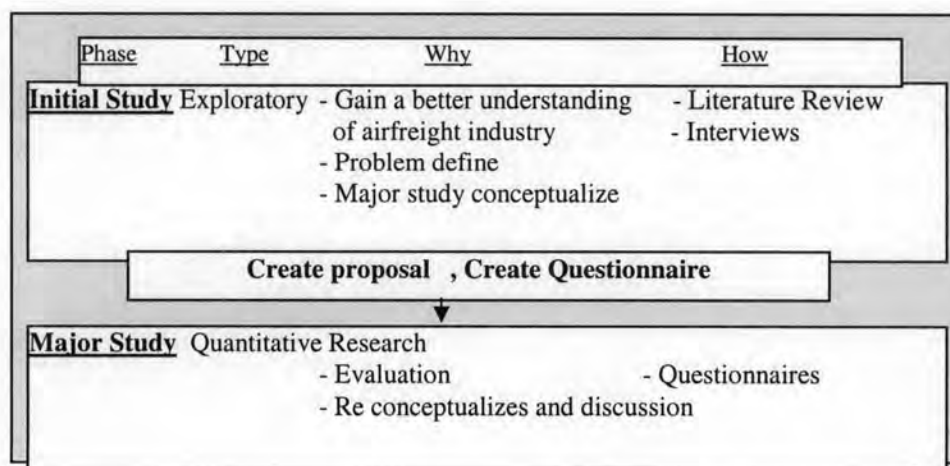


Chart 3-1 : Research Methodology

In the initial phase, an exploratory research has been conducted. It gathers the data to explore airfreight markets to defined problems. The qualitative research by interviewing some main airfreight service provider; Martin Air, Air France, KLM, LCAG helps to gain an overview of airfreight, type of services, general feature, market, and characteristics of airfreight industry. Secondary research has been conducted and all relevant information and various sources used to acquire insightful data.

Further, major study, quantitative research will be applied. This information will be useful to answers the research questions. This phase is more focused and structured. The statistics and descriptive methods will be used to analyze data. The outcome from this phase will be structured and then developed as decision support frameworks for air carrier in service quality improvement, the area of improving for airfreight provider will be the major expected outcome. Analysis on customer needs and characteristics will also be delivered. Quantitative research in major, generating the proposed models by using statistics tools from SPSS program will be conducted.

3.3 Period of Study

Exploratory Research

- 1) Main Airfreight Service provider (5 firms): 4 weeks (1Aug'05-30Aug'05)
- 2) Literature Review

Questionnaires Survey

Authorized agent : 5 months (3Mar'06-3Jul'06)

3.4 Area of Study

Respondents of this study are airfreight agents familiar with services offered from LCAG (authorized agents) and experience with others carrier. Some analysis about their characteristics and services will be delivered as well. In order to examine this research, the target population must be well defined in to three groups; large size agent, medium size agent and small size divided by a volume contribution to LCAG.

3.5 Population size and Procedure

Due to authorized agents of LCAG are 48 firms, so 100% population will be considered. However, a revenue contribution of each agent incomparably varies. There are therefore 48 agents will be divided into three groups as mentioned above.

1. Large agent

Total contributed revenue from these agents is around 80% of total tonnage that LCAG carried thru the year 2005. Tonnage that they obtain to LCAG is more than 150 tons. There are 18 agents within this group

- containing of 5 local agents and 13 international agents.
2. Medium agent
Agent in this group is agents contributing cargo to LCAG between 100-150 tons in 2005. Total number is 18 and 5 are local agents and 13 are international agents.
 3. Small agent
These agent contribute cargo to LCAG less than 100 tons per year and consist of 12 agents. 2 are local agent and 10 are international agents.

The questionnaires participants are people in charge of sales and reservation department. This people are familiar with service offer from many air carriers and also from LCAG. Furthermore, they have direct experience with service quality in airfreight industry.

3.6 Thesis Process

Thesis finding are conducted steps by steps as follows;

The Exploratory research; Literature review, air carrier interview, airfreight forwarder interview : conceptualizing & defining research problems, creating survey questions from research problem.

Questionnaires (Appendix 6) are designed after getting all relevant data from exploratory survey according to research problems. The processes of creating questionnaire are 1) interview involved people in LCAG to expand detail of each service quality factor 2) designing questionnaire in accordance with research questions 3) Pre-testing: pilot questionnaire to some respondents, 4) revising questionnaire.

Data collections are processed by 1) distributing questionnaire which based on target population, and 2) gathering questionnaire.

Data processing will be taken by: 1) coding variable & input into SPSS program and data analysis by statistical techniques 2) testing reliability on questions.

Analysis and recommendation will be conducted by: 1) place a position of result in Performance Evaluation Matrix and Strategic Opportunities for Competitive Advantage and, 2) making recommendation and conclusion.

Thesis report & presentation is the final outcome expected to be delivered in this research. Then, it includes the suggestion to service improvement for air carrier.

3.7 Evaluation of measurement scale, tool or technique

Both data from exploratory and major study have been collected and measured by several tool or techniques. The technique assigned to individual variable, selected under conditions of each statistical tool (table 3-1).

Secondary data in exploratory research:

Literature Review of former study derived from several sources such as various universities, research from CU database and other search engine tools, published documents prepared by various institutes. Those are inter-transport Newspaper, Logistics books, Air cargo Magazine, IATA TACT rules and published leaflet of MP, LCAG, AF/KLM, CX, KE and SA.

Questionnaires will be closed questions and open ended. An expectation from closed questions will be weighted and found out their perception and expectation of service quality and their satisfaction to service offered by LCAG. Open questions will give us some clues for improvement including their expectation of quality development from three groups of customer. The result of surveying will be analyzed with appropriate statistical method and to find an area of improvement performing by a Performance Evaluation Matrix.

3.7.1 Primary data

Interview and literature review are gathered from 1) LCAG staffs working at the concerning area of service evaluations' aspects. They are customer service, transport management, pricing policy, product development, claim and complaint management and proactive information 2) other main competitors in Bangkok airfreight industry and 3) air freight forwarder. This method is the most preferable in order to gather more in-depth information during the interview and to observe non-verbal languages of interviewees.

The researcher targets to interviewees, in charge of sales and reservation department. The interviewees in the initial-study are experts, some of customer in charges and top management level. Mostly, interviewees are under the management level, but the interviewees know all process in details definitely.

Stage	Research Question	Tools	Statistics
Exploratory	Thesis problem definition	Interview and internet surfing	Qualitative
Major study	Demographic data of respondent.	SPSS	Descriptive /Crosstab (Frequency)
	Service satisfaction Evaluation	SPSS	Means
	Significant Selection Criteria for Service Quality Improvement	SPSS	Crosstab (frequency) , Means
	Position of LCAG and selection criteria for service improvement	Performance Evaluation Matrix and Competitive Advantage Matrix	Means
	Reliability Test	SPSS	Conbach's Coefficient Alpha

Table 3-1: Measurement Technique

The questionnaires are used to grasp the basic information, basic practice of firms and evaluate service quality of LCAG in customer's perception including their expectation and opinion. The questionnaire has been completed mostly by operational level who have hands-on experience and understand overall logistic activities of the firms. The gathered information has been used in data processing analysis. It uses the Statistical Package for Social Science (SPSS) application to apply the selected statistical techniques to questionnaire data.

3.7.2 Criteria Consideration

Referring to a discussion in Chapter II, to meet a customer's need, the satisfaction and the further things, Bitner suggested that three parts; people, process and physical evidence, must be involved. That's the reason why we design questionnaire, shown in Appendix 6. To get a lot of attention in quality plan, the claim and complaint will be taken into the case. There are therefore there will be six aspects belonging to and airfreight service quality as follows:

1. Customer Service
2. Product Portfolio
3. Transport Management
4. Claim and Complaint Management
5. Proactive Information
6. Price Performance

Selected six criteria are divided into 23 sub-criteria. A further interview has been provided with concerned employee or departments to get further information in each aspect.

1. An interview to customer service supervisor has been set. She completely clarifies a concerned area to be a good customer service considerably.
2. To have a good mixture in product portfolio, a true interview of a sales steering department was presented.
3. A true interview with handling project manager was conducted. It indicates what we consider to have a good transport management.
4. To be able to provide a better service in claim and complaint management area, the head and regional office is considered and clarify the result of it.
5. Proactive information detail will be strictly conducted from a quality and timely that LCAG will carry the information to customer.
6. The price performance is considered as the country sales manager's discussion. The conclusion of issue price is a satisfaction of paid money and service by return.

In each service quality, the aspects will divide into some small areas understandably and they will be brought up to the point and applied to questionnaires.

1. Customer service

1.1 Effective transport alternations/solutions for customer

- 1.1.1 Sufficient advisory, for example, general information regarding to air transport issues
- 1.1.2 Optimum of transportation solution

1.2 Manner of service provider to customer

- 1.2.1 Friendliness of staff
- 1.2.2 Appropriate manner response to situation
- 1.2.3 Quick response to customer's request

1.3 A reliability of information conveyed to clients and reliability of service

- 1.3.1 Accurate of reservation
- 1.3.2 Reliability of conveyed information such as flight schedule, advisory, country regulations, rate and so on.

1.4 Quick and effective decision-making in critical incidents within a sphere of their responsibility.

2. Product portfolio

2.1 A variety of product

2.1.1 Flexibility of services

2.2 Reliable and quality assurance

2.2.1 Professionalism (well trained staff worldwide)

2.2.2 High frequencies & capacity availability

2.2.3 Clearly defined time frame (Time definite service)

2.3 Value added services

2.3.1 Performance guaranty by freight refund in case of service failure to provide a committed service to customer

2.3.2 A coverage of insurance

2.4 Tracking

2.4.1 A convenient accessibility to tracking system on transportation process can be retrieved round the clock

2.4.2 Quality/reliability of information provide in tracking service

3. Transport Management

3.1 Minimum lead time/transit time

3.1.1 Speed of delivery

3.1.2 Short transit time

3.2 Punctuality/reliability of flight performance

3.2.1 Flown as booked

3.2.2 On-time delivery

3.3 Least paper work

3.3.1 Degree of bureaucratic (unnecessary document elimination)

3.3.2 Accuracy of document



3.4 Quality manpower to avoid irregularities

- 3.4.1 Professional staff
- 3.4.2 Quality of shipment status report
- 3.4.3 Less irregularities

3.5 Global standard

- 3.5.1 Service flexibility
- 3.5.2 Reliability of transport

3.6 Global network

- 3.6.1 Aircraft type (which will reflex to a load ability)
- 3.6.2 Worldwide networking
- 3.6.3 Time/space availability
- 3.6.4 Flight frequency

3.7 Less damage rate

4. Complaint and feed back management

- 4.1 Quick response time after received cases from claimant
- 4.2 Clear contact address and person for complaint and feedback issues

4.3 Manner from staff

- 4.3.1 Appropriate manner from service provider with good willed
- 4.3.2 Not bureaucratic aptitude

4.4 Professional of staff

- 4.4.1 Expert talk and professional reply
- 4.4.2 Reliability of information
- 4.4.3 Clear correspondence

- 4.5 Commitment / engagement of the staff
Keep updated especially unusual cases

5. Proactive Information

- 5.1 Responsive time is an information transfers to customer in time as soon as unexpected incident occur either mishap occurrences, updated information regarding to services, flight schedule, new rate offer.

5.2 Quality of Proactive Information

- 5.2.1 Accuracy of information
- 5.2.2 Sufficient data provided
- 5.2.3 Contingency plan

5.3 Aptitude of service provider during convey a proactive information

- 5.3.1 Appropriate manner example emotional control
- 5.3.2 Commitment of staff until problem solved

6. **Price Performance** which will be an indicator of customer's satisfaction, served service.

3.7.3 Questionnaires' scoring

These selection criteria will measure how significant of each criteria to agent selection. Five point scales is used to indicate the degree respondent assign to each criteria:

Unsatisfied	1
Moderately Unsatisfied	2
Moderately Satisfied	3
Satisfied	4
Very Satisfied	5

After collecting data, the survey has been analyzed and summarized in a readable and easily interpretable format. The Statistical Package for Social Science (SPSS) was used to summarize the data. All statistical manipulations of the data will be followed by commonly accepted research practices. The form of data presented by this tool has also been presented in an understandable format. All the statistical procedures have been performed by computer software package to ensure accuracy, timeliness and minimize cost. After collecting data from returned questionnaires, the researcher has coded and enters the collected data into SPSS software.

To make sure the questions in questionnaire has been created in suitable way and adequately understandable for participants and evaluation. Ten pilot questionnaires were sent out to a group of agent.

3.7.4 Statistical Tools and Technique

After testing and adjusting the questionnaire to be most suitable instruments, data collection has been processed. Then the data has been coded and proceeded by SPSS for windows (Statistical Package for the Social Sciences). The appropriate statistical tools used in this research questions are as follow.

1. Cronbach's Coefficient Alpha is used to measure the reliability of the major part of questionnaires.

$$\text{Cronbach's Alpha} = \frac{\overline{k \text{ covariance} / \text{variance}}}{1 + (k - 1) \overline{\text{covariance} / \text{variance}}}$$

k = number of questions

$\overline{\text{covariance}}$ = Average standard variance between questions

$\overline{\text{variance}}$ = Average standard variance of questions

2. The descriptive statistics of frequency is used to describe the percentage and mean (μ) of demographic factors.

3. To find out areas for improvement and direction to move, a Competitive position matrix and Performance Evaluation Matrix will be methods for this stage.

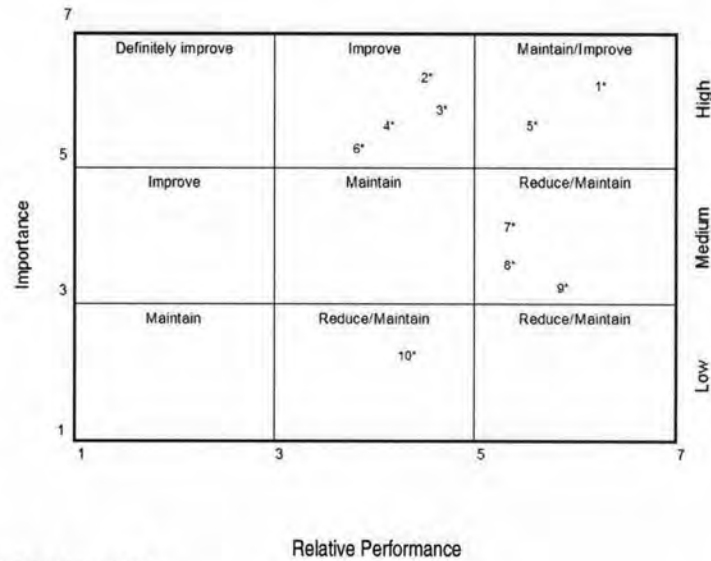
A competitive benchmarking is presented from data collected from questionnaires. The analysis involves a comparison of the performance of service performance and expectation of customer in six aspects.

Generate a table with importance evaluations for each of variables as well as the performance evaluations of the firm is needed to conduct a strategic opportunities for competitive advantage. Attributes were sorted by mean importance rating to the customers and industry indicators were selected.

A Strategic Opportunities for Competitive Advantage will be developed to be used in conjunction with the competitive position matrix. The performance evaluation matrix is obtained by creating a three-by-three matrix with the importance of each attribute and evaluation of the performance of the company as two dimensions. The matrix is divided into nine cells as follows:

- Maintain/improve service (high importance, high performance)
- Improve service (high importance, medium performance)
- Definitely improve service (high importance, low performance)
- Improve service (medium importance, low performance)
- Maintain service (medium importance, medium performance)
- Maintain service (low importance, low performance)
- Reduce/maintain service (medium importance, high performance)

- Reduce/maintain service (low importance, medium performance)
- Reduce/maintain service (low importance, high performance)



Note : * Denotes attribute number

Chart 3-2 : Example of Performance Evaluation Matrix¹

For example, figure 3-2 suggests that performance improvement should be made on attribute 1, 2, 3, 4, 5 and 6.

A Competitive Position matrix that has two dimensions: importance and relative performance. The performance is determined by calculating the difference in the evaluation of the LCAG's authorized agencies. The nine cells in the matrix can be grouped into three broad categories:

1. Competitive advantage

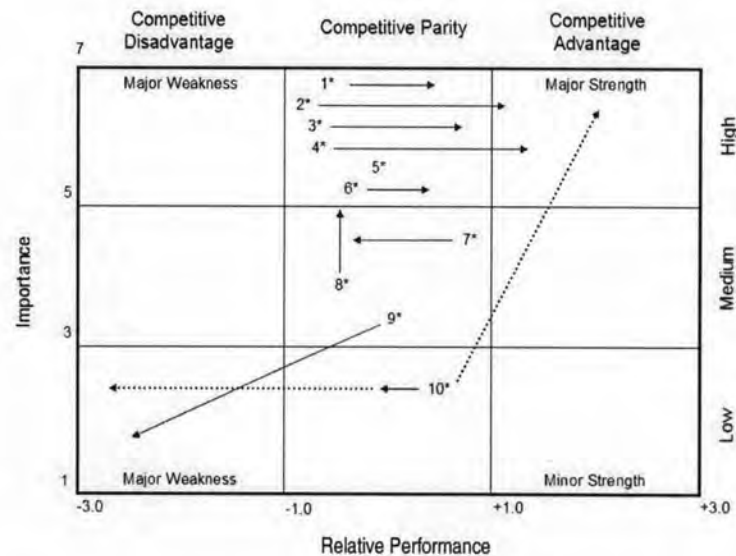
- Major strength (high importance, high relative performance)
- Minor strength (low importance, high relative performance)

2. Competitive Parity

3. Competitive disadvantage

- Major weakness (high importance, low relative performance)
- Minor weakness (low importance, low relative performance)

¹ James, R.S. and Douglas, M.L. Strategic logistics management, Ed.4th (New York: McGraw-Hill, 2001), pp.119-124.



* Denotes attribute number

← Indicates desired shift in relative performance

◄... Indicates potential opportunities that may be revealed within specific customer segments

Chart 3-3 : Example of Competitive position Matrix for Strategic Opportunities for a Competitive Advantage*

For example, figure 3-3 shows that attributes 1, 2, 3, 4 or 6 can become relative competitive strengths. For that attribute 10 should be moved to the major strength category for large profitable customers.

3.8 Ethical Consideration

Ethical issue was concerned in each step of thesis process. Researcher realizes that the whole research process will be useless if missing in ethical consideration. In exploratory stage, interview was conducted from respondents who should be relevant. The information of individual respondents will not be published with the name of interviewee or even company name; their information will be conducted in terms of overall understanding. The ethical issue was discussed before the interview was conducted to make sure the information given by them was not bias. Secondary data was carefully explored and reported in the initial study. In the major study, 96 of questionnaire were mailed to respondents and be followed up for returns. Firstly, the returned questionnaire had not yet been sufficient for analysis according to thesis design, but the questionnaires were followed up and some questionnaire were sent to additional respondents, so finally the returned documents are enough for analysis. In further step, the inputting of data into

* Ibid.

SPSS was carefully checked and input to get the most correct solutions. Finally the research finding was report according to the actual results.

Conclusion

The presented has been generated step by step. First of all, studying overall in airfreight market defines research problems and its root cause. These processes of study were generated by using interview methods as well as literature review and exploratory research. Knowledge of these stages has been used for defining the questions which has been more focused. Major study has been conducted by quantitative research. Major target for this stage is three groups of airfreight agencies. Thesis procedurre has been designed in term of population and population procedure, data collection has been then generated. Coding and analysis of related variable will be also significant sections to find out the problems and initially set as well as conducting the final conceptual framework. The next chapter will report in term of results of data analysis generated from collected data.