

CHAPTER III

RESEARCH METHODOLOGY

The objective of this study was to study the perception and participation of employees of the national flag carrier airline and low cost airlines Bangkok, Thailand toward green programs in their respective airlines. This study applied the quantitative research method and used questionnaire surveys for collecting data. This chapter presents in detail about population and sample size, research instruments, reliability and validity, data collection and data analysis.

Population and sampling size

The population of this study comprised employees in both National airline and low cost airlines in Bangkok, aged less than 20 – 60 years old. The sample size of this study was 400 target respondents. Quota sampling was used to select the sample in groups of employees inform the National airline and low cost airlines Bangkok, Thailand. Close-ended questionnaires helped the respondents to make quick decisions and make a choice among the several alternatives that were provided. There was less potential of error due to differences in the way questions were asked and responded. Normally, a closed – response question takes less time than an equivalent open – ended question (Aakekr, Kumar and Day, 2009).

Determination of Sample Size

In this study, sample size was determined by estimating proportion. Three most important things should be noted in order to determine the sample size: a specified degree of confidence, specific precision, and knowledge of sampling distribution of the statistics. The most appropriate equation to identify the distribution of sample proportion is

$$N = \frac{Z^2(PQ)}{E}$$

Where:

n = Sample size

Z = Confidence interval in standard error units

P = Estimated proportion of success

Q = Estimate proportion of failure (1 – P)

E = Maximum allowance for error

For this specific study, the sample size can be calculated as follows:

1. The confidence level is 95% in which $z = 1.96$
2. The estimated proportion of success is 50% or 0.5 because it has the least bias in the survey research.

3. The allowance for sampling error is not greater than 5%

Then substitute the value into the formula below:

$$\begin{aligned}
 n &= \frac{(1.96)^2(0.5)(0.5)}{0.05^2} \\
 &= \frac{(3.8416)(0.025)}{0.0025} \\
 &= 384.16 \text{ or about } 385
 \end{aligned}$$

Therefore, the number of questionnaires to distribute is 385. For this study, the researcher decided to distribute the questionnaires for 400 sets to avoid occurrence of error value.

In this study, the sample comprised 400 employees from National airlines and low cost airlines in Bangkok are Thai Airways, One Two-Go Airline, Thai AirAsia and Nok Air. Quota sampling was used to select sample in 4 groups consisting of 100 respondents.

The questionnaires were distributed and collected from:

1. Thai Airways = 100 respondents
2. One Two-Go Airline = 100 respondents
3. Thai AirAsia = 100 respondents
4. Nok Air = 100 respondents

Research Instrument

In-depth Interview

The questions that the researcher asked during the interview with the director of strategy and development business department in National airline and low cost airlines focused on the current policies about their green programs that they want the employees to perceive. The information gathered was important for the evaluation of employees' perceptions towards green program in their airlines. The researcher focused on questions about the policies as they used to exhibit their works. This information would help evaluate the current policies about green program in their airlines.

Questionnaire

The researcher used questionnaire as an instrument for this research. It is a structured sequence of questions designed to draw out facts and opinions and which provides a vehicle for recording the data (Hague and Jackson, 1996). The questionnaire of this research is a structured questionnaire. It is a list of questions that have answer choices and likert scale. The main advantages of this kind of questionnaire are that it can be collected in a complete form within a short period of time and can be obtained from the target respondents' immediate completion. This approach is also easy to be interpreted by computer (Zikmund, 2000). Due to limited time distributing the questionnaires, this type of questionnaire is required.

Validity and Reliability

After the literature was reviewed, the researchers developed all possible questions which were needed for this study. After consulting with the advisor, the researchers carried out the test on content validity of the instrument. Before the real data collection, pretest was given to 30 target respondents after having randomly selected them for testing.

To avoid problems, a pre-test is often applied. The researcher looks for evidence of ambiguous questions and respondents' misunderstanding and whether the questions offer the same meaning to all respondents in terms of wording, meaning of the language. Modifications of questionnaire were corrected based on the pre-test.

Then, the final form of questionnaire and screen questions was distributed to target respondents (Zikmund, 2000).

To determine the internal consistency of the scale, the researcher employed Cronbach's alpha, because it can be indicated as a correlation coefficient. It ranges in value from 0 to 1 SPSS output. In this study, the independent variables under the concepts are perception and participation.

The researcher pre-tested data collection tool by distributing questionnaires to 30 airline's employees that not in our target group from Qatar airline, China airline and Emirates airline. The result of the pretest with 30 respondents is shown in the table below which reflects the internal consistency reliability of the instrument used in this study.

Table 3 The result of pretest

Perceptions of employees	Cronbach's alpha
Energy	.811
Water	.499
Waste	.763
Environmental caring	.809
Overall	.907
Support and participate	Cronbach's alpha
Energy	.770
Water	.735
Waste	.738
Environmental caring	.653
Overall	.861

Data Collection

The information and data in this research study are both primary and secondary data.

Secondary Data

Secondary data are data gathered and recorded by someone else prior to (and for purpose of other than) the current project. They usually are historical data and already assembled. They required no access to the respondents or subjects.

The primary advantage of secondary data comes from availability. Obtaining them is almost always faster and less expensive than acquiring primary data. The money and time saved by researchers is also another advantage. Many activities normally associated with primary data collection (for example, sampling and data processing) are eliminated.

An inherent disadvantage of secondary data is that they were not designed specifically to meet the researchers' needs. Thus, researchers must ask how pertinent they are to a particular project. The other disadvantages of secondary data are outdated information, variation in definition of terms, different units of measurement and lack of information to verify the data's accuracy (Hague and Jackson, 1996).

Secondary Data used in this research

1. Libraries

Traditionally libraries' vast storehouses of information have served as a bridge between users and producers of secondary data. The library staff deals directly with the creators of information, such as federal government, and intermediate distributors of information, such as abstracting and indexing services. The user needs only to locate the appropriate secondary data on the library shelves. Libraries provide collections of books, journals, newspaper, and so on for reading and reference. They also stock many bibliographies, abstracts, guides, directories, indexes, as well as offering access to basic databases. In this research, the researcher found information and theory from Naresuan University, ABAC library, Faculty library of Chulalongkorn University, and Tourism Authority of Thailand (TAT) Library.

2. Internet

The internet is, of course, a new source of distribution of much secondary data. Its creation has added an international dimension to the acquisition of secondary

data. The researcher also gets information through Internet. It is more convenient and available all the time.

3. Books and Periodicals

Books and Periodicals found in a library often are considered the quintessential secondary data source. The researcher finds many books and journals from libraries.

Primary Data

The researcher did a survey about perception and participation of employees of National airline and low cost airlines toward green program in their airlines. The researcher distributed questionnaire to the respondents and the results were processed through SPSS program.

Analysis of Data

Data were analyzed and summarized in a readable and easily interpretable form after the required data were collected. The Statistical Package for Social Sciences (SPSS) was utilized to summarize the data where needed. All statistical manipulations of the data followed commonly accepted research practices. The form of data presentation from these procedures would also be presented in an easily interpretable format. The computer was used to ensure accuracy and to minimize costs in performing all statistical procedures. In order to predict values for a criterion variable (dependent variable) from the values for several predictor variables (independent variables), the descriptive analysis and the simple correlation analysis were used for this research.

The measurements of perceptions were divided in to 5 levels in the questionnaires and were analyzed according to the following scores.

$$\begin{aligned}
 \text{The interval score of each level} &= \frac{\text{Maximum score} - \text{Minimum score}}{\text{The amount of level}} \\
 &= \frac{5 - 1}{5} \\
 &= 0.8
 \end{aligned}$$

Table 4 The mean scores interval level

Interval score level	Mean scores	Significant Level
1	1.00 –	Very low
2	1.80	Low
3	1.81 –	Neutral
4	2.60	High
5	2.61 –	Very high
	3.40	
	3.41 –	
	4.20	
	4.21 –	
	5.00	