

CHAPTER THREE

METHODOLOGY

This chapter describes: (1) the subjects, (2) the materials, (3) the procedures used in the collection and analysis of the data, and (4) the data analysis.

3.1 SUBJECT

3.1.1 Population

The population of the study was the household heads using community biodiesel (B100) at Mae Klong Samakki Karnkaset Group, Samut Songkram Province (the group including users living Mae Klong, Ampawa and Bang Khonthi Districts) The total number was 400 household heads.

3.1.2 Sample Size

The sample size of this study was calculated from 400 household heads by using the Sampling Theory of Taro Yamane with variance ± 0.05 . The total number of population was 400, so the sample size was 200:

$$n = \frac{N}{1 + (N \times e \times e)}$$

n = Sample size for N population

N = Population

e = Variance of sample (± 0.05)

Therefore, the sample size could be calculated as follows:

$$\begin{aligned} n &= \frac{400}{1 + (400 \times 0.05 \times 0.05)} \\ &= \frac{400}{1 + 1} \\ &= 200 \end{aligned}$$

3.2 MATERIALS

The research instrument for this study was a self-administered questionnaire as shown in Appendix A and B given to household heads who use community biodiesel (B100) Mae Klong Samakki Karnkaset Group, Samut Songkram Province. The questionnaire consists of 3 parts as follows:

Part 1: Demographic Information

The first part is demographic information of the respondents consisting of six closed-ended questions in order to obtain the users' personal information, which include Gender, Age, Occupation, Educational Level, Household Income per Month, and Type of vehicles used.

Part 2: Users' Knowledge and Understanding about Community Biodiesel (B100)

The second part is users' knowledge and understanding about community biodiesel (B100) consisting of 10 statements as stated in the second part of the questionnaire.

Part 3: Degree of Users' Satisfaction with Community Biodiesel (B100)

The third part is dimension of users' satisfaction with community biodiesel (B100) divided into 3 aspects:

- 1) Opportunity to generate higher household income
- 2) Managing efficiency of the core team at Mae Klong Samakki Karnkaset Group, Samut Songkram Province
- 3) Marketing Mix (4 Ps):
 - Price
 - Product
 - Place
 - Promotion

In this part, a Five-point Likert's rating scale was applied to score each statement. The responses were rated at five levels and scored as follows:

- 5 = Very satisfied
- 4 = Satisfied
- 3 = Neutral
- 2 = Dissatisfied
- 1 = Very dissatisfied

At the end of the questionnaire, suggestion which is open-ended question was provided in order access B100 Users' opinion and recommendations.

3.3 PROCEDURE

The self-administered questionnaires were used to gather primary data from the target group of approximately 245 household heads using community biodiesel (B100) at Mae Klong Samakki Karnkaset Group, Samut Songkram Province, which was developed based on the objective of this study. The questionnaire consists of the following.

3.3.1 Research Design

This research used a cross-sectional design. The samples were 245 household heads using community biodiesel (B100) at Mae Klong Samakki Karnkaset Group, Samut Songkram Province.

3.3.2 Data Collection

The self-administered questionnaires were used to gather primary data from the target group of approximately 245 household heads using community biodiesel (B100) at Mae Klong Samakki Karnkaset Group, Samut Songkram Province in the second week of December 2008 and January 2009. The respondents were asked to answer the questionnaire by themselves. The questionnaires were distributed by the researcher to approximately 245 household heads using community biodiesel (B100) at Mae Klong Samakki Karnkaset Group, Samut Songkram Province, in the monthly meeting of the group on the 15th December 2008 and January 2009 at the community's office. The researcher collected the partial questionnaires on site. The remaining questionnaires were collected on 15th January 2009. The respondents filling out the questionnaire, were informed about the objective of the study and confidentiality of the answers given.

3.4 DATA ANALYSIS

The instrument used in data analysis was the Statistical Package for the Social Science (SPSS) with the satisfactory scale: very satisfied, satisfied, neutral, dissatisfied, and very dissatisfied. The results were analyzed using descriptive statistics: frequency, percentage, mean and standard deviation as follows:

Frequency Distribution and Percentage was used to describe the demographic information of the respondents in the first part of the questionnaire.

Arithmetic Mean and Standard Deviation was used to calculate the background knowledge and understanding about community biodiesel (B100)

A **Five-Point Likert Scale** was used to grade indicators of dimension of users' satisfaction with community biodiesel (B100) in three aspects: Opportunity to generate higher-household income , Managing efficiency of the core team at Mae Klong Samakki Karnkaset Group, Samut Songkram Province, and Marketing Mix (4 Ps) : Price, Product, Place, Promotion in the third part of the questionnaire. They were described by “mean” and “standard deviation”

$$\begin{aligned}\text{Width of interval scale} &= \frac{(\text{Maximum Value} - \text{Minimum Value})}{\text{Number of Level}} \\ &= \frac{(5-1)}{5} \\ &= 0.80\end{aligned}$$

From the above criteria, the results can be transformed into the levels of decision making as follows:

Mean	Result
4.21-5.00	Very Satisfied
3.41-4.20	Satisfied
2.61-3.40	Neutral
1.81-2.60	Dissatisfied
1.00-1.80	Very dissatisfied

In summary, this chapter has shown the subject of the study, sample size, materials, procedures, and data analysis methodology. In the next chapter, the results of data will be presented to answer the research problems.