

CHAPTER III

RESEARCH METHODOLOGY

In this research, the researcher had set the research design, populations and samples selection, observation and measurement, data collection and data analysis as following;

1. Research design

This is a cross-sectional descriptive and analytical study at a point in time.

2. Populations and samples selection

- The target populations are households in Krabi province.
- The study populations are households in Nuea Khlong District, Krabi province.
- The samples are villages and households selected in this research.
- The sampling frame is the list of sub-districts and villages in Nuea Khlong District, Krabi province.
- The sample size can be obtained by using the following formula to estimate the proportion. (Kusolvisitakul Wilai, 1985 cited in Worapongsatom Tawatchai, 2000)

$$n = \frac{Z^2_{\alpha/2} N \pi (1-\pi)}{Z^2_{\alpha/2} \pi (1-\pi) + Nd^2}$$

Where

n = Sample size

N = Population refers to the total number of households in Nuea
Khlung district = 12,950 households (as of June 2002)

Z = Normal distribution in normal bell curve

Set the statistical significance $\alpha = 0.05$

Thus $\alpha/2 = 0.025$ $Z = 1.960$

π = Proportion value, define the consumers' need on home visit =
50%

(Source: home visit/household survey, Krabi Province, 2002)

d = Variance allowed in the proportion estimation = 5%

Then calculate the sample size:

$$\begin{aligned} n &= \frac{(1.96)^2 (12,950) (0.50) (1 - 0.50)}{(1.96)^2 (0.50) (1 - 0.50) + (12,950) (0.05)^2} \\ &= 12,438 / 33.34 \\ &= 373.12 \\ &= 374 \end{aligned}$$

We need to have 25-30 households per village for the study population; the sample size of village is $374 / 30 = 12.47 = 13$ villages

In this research, the systematic sampling techniques were used as following

a. The sampling of villages

Rearrange the list of sub-districts and villages by using the chronological order of village. However, the lists of villages and sub-districts are taken from an announcement of the Department of Provincial Administration, Ministry of Interior.

It was sampled by

$$1) \text{ Set the sampling interval: } I = N/n = 56/13 = 4.3 \sim 5$$

Where N = number of all villages

n = number of villages required

2) Random Start: R by using Simple Random Sampling

3) Find the samples until completing the number of villages required (13 villages) by summing up “ I ” until completing $R, R+I, R+2I, R+3I, \dots, R+(n-1)I$

b. Sampling the households in the sample villages

1. Set the sampling interval: $I = N/n$

Where

N = number of households in the sample villages according to item “a”.

n = number of households required (30 households)

2. Random start: R is selected from the households of the leader of the sampling villages. The purpose is to inform the objectives and request for the assistance in data collection.

3. Sampling the next households by counting the households after the leader’s according to the sampling interval (I) until completing the number of

households required (approximately 25-30 households). However, the samples were randomly assigned covering the whole village.

3. Observations and Measurement

3.1 Variables in the research

Independent Variables include sex, age, religion, marital status, household's monthly income, occupation, household's attribute, health conditions of household members, the type of health insurance, and villages.

Dependent Variables refer to consumers' need on home visit by health workers.

3.2 Research Instrument

The instrument used in this research is the questionnaire, which the researcher has designed. The subjects needed to answer the questions by themselves. For the group of literate samples, the researcher will be waiting nearby to offer help that may be needed. For example, in case of the subjects do not understand the questions well enough or unsure which alternative best described. For the illiterate group of subjects or the group that prefers the questions read to them, the researcher will read the questionnaire out loud for them. By doing so, it is necessary to avoid any things that may unintentionally lead them to the answer. The researcher will merely read the questions to the subjects and the subjects will answer or express their opinion. The interviewer will record such answers and opinions accordingly.

The questionnaire consists of 2 parts which consisting of

Part 1: General data of the subjects and their households: the general data of respondent include the relationship with the head of household, sex, age, and marital status. General data about their household consists of religion, household's monthly income, occupation, household's attribute, health conditions of household members, and type of health insurance.

Part 2: The data of level of consumer's need on home visit by health workers which classified by the marketing mix are as following

- Home healthcare service aspect comprises
 - Health promotion and disease control and prevention
 - Nursing care and health rehabilitation
 - Miscellaneous
- Place aspect
- Price aspect
- Promotion aspect

The pattern of the answers is in a form of rating scale which consisting of 5 levels. The scoring criteria are as shown below:

The level of need on home visit	Score
Highest	5
High	4
Moderate	3
Low	2
Least or not required	1

The samples are requested to evaluate how much each alternative best described for them.

3.3 Interpretation of result and score in overall view in each aspect

In each aspect, it will consist of several items/activities. The total score can be obtained by summing up the raw scores from each item in each aspect and dividing it can do it by the number of those items.

The interpretation of total score in each aspect can be categorized into 5 levels of need as following;

The average score	4.50-5.00	means	Highest
The average score	3.50-4.49	means	High
The average score	2.50-3.49	means	Moderate
The average score	1.50-2.49	means	Low
The average score	1.00-1.49	means	lowest or not required

3.4 Instrument Validation

3.4.1 Content Validity: the content of questionnaire will be validated by three experts which comprised 1) Krabi Provincial Chief Public Health Officer, 2) Specialist in health promotion and development at Krabi Provincial Public Health Office and 3) Thesis Advisor. After that, the researchers adjusted and corrected the instrument according to the comment and advice given.

3.4.2 Reliability: the validated questionnaire would be tested with similar samples. (30 households in Khoa Phanom District, Krabi). Then the researcher calculated the reliability by using a Cronbach's alpha coefficient formula and

analyzed the data by using SPSS v.10 program. The result of reliability calculation was at 0.89.

4. Data collection

In this research, the researcher through the interview according to the questionnaire had gathered the data. The data collecting procedure can be summarized as following;

1. Submitting the requisition letter for approval to Krabi Provincial Chief Public Health Officer to collect data in the certain period of time. The research also submit the letter to the sheriff of Nuea Khlong district and district public health officer to inform them the objectives and ask for their permission to collect data in the area.

2. Collecting data in villages. The researcher met a headman or the person in charge such as the public health volunteer to inform the objectives of the research, the detail in collecting data and to ask for their cooperation in data collection in their responsible area. Moreover, the additional purpose is to ask for the assistance in guiding the way in each village.

3. Interviewing. The researcher introduced herself as public health personnel from Krabi Province Public Health Office and informs the objectives of the data collection and its process. Further, the research asked for their cooperation in collecting data including explained about the protection of subjects' privacy right. Before interview, the research needed to ask for their consent. When the subjects are willing to give an interview, the researcher will then interview them according to the designed questionnaire. The subjects are required to answer the questions by

themselves. For the literate group of subjects, the researcher will be nearby available to offer assistance in case the subjects do not understand the questions well enough, or unsure which alternative best describes what they would like to tell. For the illiterate group of subjects or the group that prefers the questions read to them, the researcher will read the questionnaire aloud. By doing so, the researcher need to avoid unintentionally leading them to the answer. The researcher will read the questions to the subjects and the subjects will answer or express an opinion. The interviewer will record such answers and opinions accordingly. It was found that 90% of the subjects needed the researcher to read the questions to them. The approximate time for each interview is 30 minutes per respondent. After the interview was finished, the researcher checked the completeness of the data and thanked the respondents and the guide for their cooperation.

4. The researcher rechecked the data gathered from the interview and then use the statistic tool to analyze the result.

5. Data analysis

The data is analyzed by using the SPSS v.10 program. The details can be summarized as following.

1. General data of the samples and household was analyzed by using the frequency, percentage, mean and standard deviation. In case of problem, obstacle and suggestion was presented in the descriptive form.

2. The level of consumer's need on home visit by health workers in each aspect and each item was calculated by using the frequency, percentage, mean and standard deviation.

3. Compare the level of consumer's need on home visit by health workers in each category by sex, age, marital status, educational background, religion, occupation, household's attribute, household's monthly income, the type of health insurance, the health conditions of the household members (illness), and village. Each data is independent. If the data/population has a normal distribution, the independent sample test will be used in case of comparing 2 sets of data and one-way ANOVA will be used in case of comparing more than 2 sets of data. If the population has an abnormal distribution, non-parameter statistic that is two-independent-Sample Test: Mann-Whitney will be used instead. In case of comparing 2 sets of data and use statistic more than 2 independent samples: Kruskal-Wallis. In this research, after testing, the abnormal distribution of population was found. Therefore, the non-parameter was applied as shown in table 3.1

Table 3.1 shows types of statistics, analyzed topic types of variables and the statistical methods.

Type of statistics	Analyzed topics	Type of Variables	Statistical methods
1.Descriptive Statistics	-General data (e.g. age, income, sex, educational background, etc.)	Quantitative data	Mean, Standard Deviation, Percentage
	- Problems, obstacles and suggestions	Qualitative data	Frequency, Percentage
		Qualitative data	Descriptive presentation
	The level of consumer's need on home visit by health workers in Nuea Klong district, Krabi Province, in aspect of product service, place, price and promotion.	Quantitative data	Mean, Standard Deviation
2. Inference Statistics	Compare the level of consumer's need on home visit by health workers in Nuea Klong district, Krabi province in aspect of product/service, place, price and promotion by sex, age, marital status, religion, occupation, household's attribute, household's income, health insurance, health conditions of household members, and villages.	Quantitative data Compare between - 2 groups - More than 2 groups	Independent Samples test or two-independent-Sample Test: Mann-Whitney One-way ANOVA or More than 2 independent samples: Kruskal-Wallis