CHAPTER 3

RESEARCH METHODOLOGY

Communication Process and Adoption of Sufficiency Economy Philosophy by Farmers in Chiang Mai Province in this study will examine the communication processes necessary and possibly lacking among farming communities that would lead to increased quality of life. This study is a correlational research design. Interview schedule and observation will be used as tool for data collection from target group. Obtained data will be used for further analysis. This chapter presents a description of:

3.1 Objectives of the study

3.2 Research Design

3.3 Population

3.4 Instrumentation for data collecting

3.5 Measurement of variables

3.6 Content validity and reliability of research instrument

3.7 Data collection

3.8 Data Analysis

3.1 Objective of the Study

This study was aimed to investigate the following:

1. Investigate learning condition on the philosophy of sufficiency economy through the communication process of farmers in Chiang Mai province ;

2. Find out levels of knowledge, attitude, and the adoption of sufficiency economy philosophy of the farmers ;

3. Analyze factors effecting the adoption of the philosophy of sufficiency economy of the farmers ; and

4. Synthesize guidelines for the preparation of an appropriate communication process effecting the adoption of sufficiency economy of the farmers.

3.2 Research Design

The research on "Communication Process and Adoption of Sufficiency Economy Philosophy by Farmers in Chiang Mai Province" is a correlational research which Creswell (2008: 356) states that correlational research design is to predict and explain relation between variables. This type of research provides the analyzed statistical relation in order to explain and measure levels of relation and connectivity between 2 or more variables.

Trimonkolkul and Chatraporn (2000: 77-78) explains that correlation research is another method of research among descriptive research which focuses on observing and describing the behavior of a subject without influencing it in any way. The correlation research does not find the answer in causal relationship but emphasizes on finding descriptive conclusion or predicts trend, rather than jumping to conclude what make an affect. The correlation research is widely accepted and applied in social sciences. In light of education, this method of research is used to explain or predict relation between expected behaviors of learners related to component variables in arranging a successful education. This method of research is beneficial to make a better comprehension of behaviors, or help predict trend of such behaviors.

3.3 Population

3.3.1 The target populations

The populations in this study were household farmers in Chiang Mai Province which consists of 24 districts including 195,598 household farmers (Information technology service center, 2006).

3.3.2 Sample group

The sample size is 375 farmer calculated by using the formula of Taro Yamane (1967) (as cited by Prasitratthasin, 2001). Multi – stage sampling technique will be used as follows:

Stage 1 Classification of districts in Chiang Mai province in terms of geographic conditions.

Table 1 District in Chiang Mai province divided by the geographic conditions

Direction	District in Chiang Mai province
Center	Muang Chiang Mai
North	Mea-ai, Meataeng, Chaiprakarn, Fang, Chiangdao, Mearim
South	Om koi, Chomtong, Hod, Sanpatong, Hangdong, Doitao, Doilo
East	Doisaket, Sansai, Sankamphaeng, Saraphi, Phrao, Meaon
West	Maejam, Meawang, Samoeng, Wianghaeng
	Total 24 districts

Stage 2 Selection of districts of each direction. Forty percent of the districts will be obtained by random sampling.

Stage 3 Forty percent of sub – districts of the districts in step 2 will be selected by random sampling.

Stage 4 Forty percent of the villages of sub – district in step 3 will be selected by random sampling.

Stage 5 Forty percent of the households of the villages in step 4 will be selected by random sampling (6,112 households).

Thus, 6,112 households will be used for sampling frame in this study. Then, the size of sample group will be determined by using the formula of Taro Yamane for finding a number of samples.

$$n \quad = \quad \text{size of sampling group}$$
$$N \quad = \quad \text{size of the entire population}$$
$$e \quad = \quad \text{acceptable deviation error in the sampling}$$
$$\text{(in this research, the researcher allows}$$
$$\text{deviation in the sampling process at 5\%)}$$

$$n \quad = \quad \frac{N}{1 + Ne^2} \quad = \quad \frac{6{,}112}{1 + 6{,}112\,(.05)^2} \quad = \quad 375$$

The number of samples is 6 percent of population in the sampling frame.

$$6{,}112 \text{ households} \quad = \quad 100\%$$

$$375 \quad = \quad \frac{375 \times 100}{6{,}112} \quad = \quad 6.135 \quad = \quad 6\%$$

   Stage 6 The 375 household samples (6 percent) are obtained by simple random from sampling frame, as shown in figure 5

In conclusion, the sample group obtains by using multi – stage sampling is shown in figure 5.
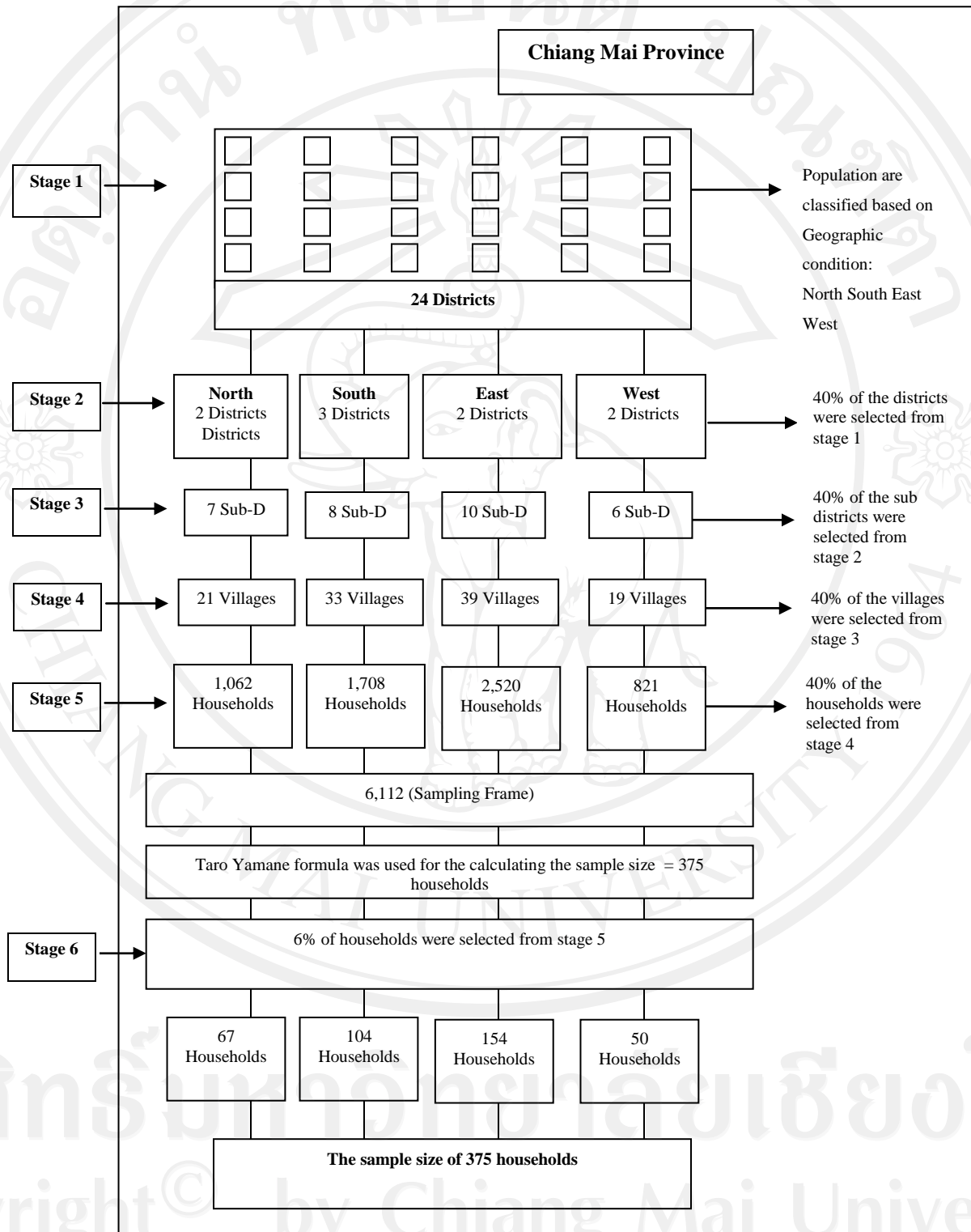
Chiang Mai Province

Stage 1 →

24 Districts

Population are classified based on Geographic condition: North South East West

Stage 2 →

| **North** 2 Districts Districts | **South** 3 Districts | **East** 2 Districts | **West** 2 Districts |

40% of the districts were selected from stage 1

Stage 3 →

| 7 Sub-D | 8 Sub-D | 10 Sub-D | 6 Sub-D |

40% of the sub districts were selected from stage 2

Stage 4 →

| 21 Villages | 33 Villages | 39 Villages | 19 Villages |

40% of the villages were selected from stage 3

Stage 5 →

| 1,062 Households | 1,708 Households | 2,520 Households | 821 Households |

40% of the households were selected from stage 4

6,112 (Sampling Frame)

Taro Yamane formula was used for the calculating the sample size = 375 households

Stage 6 → 6% of households were selected from stage 5

| 67 Households | 104 Households | 154 Households | 50 Households |

The sample size of 375 households

Figure 5 Multi-stage Random Sampling

3.4 Instrumentation for data collecting

In this study, data would be collected through the used of questionnaires. The questionnaire comprises close-ended questions and open-ended questions. The questionnaire consists of 5 parts as follows:

Part 1   Data about general socio-economic background of farmer and families

Part 2   Questions about the behaviors on information receptivity of the Sufficiency economy philosophy

Part 3   Questions about the levels of knowledge, attitude, and the adoption of sufficiency economy philosophy of the farmers

     3.1) Knowledge

     3.2) Attitude

     3.3) The adoption

Qualitative Part

The second part of this study was an analysis of qualitative data. This was done by using an in-depth interview (focus group discussions) administered with 7 groups of responses (40 people). The following were question issues:

1. What media have an effect on the adoption of the philosophy of sufficiency economy? Why?

2. Based on the concept of the philosophy sufficiency, how can we adopt it to our daily live activities?

3. How can we practice the principle of self-reliance? What aspect (s) can you practice?

4. Are basic factors in agricultural livelihood (expenses) reduction, an increase of incomes, opportunity expansion) related to the concept of the philosophy of sufficiency economy? How?

5. The adoption of the concept of the sufficiency economy philosophy must have sufficiency in various aspects, e.g. economic, social, and spiritual aspects). What is your opinion about it? What things have you been practicing?

3.4.1 Research instrument development

Research instrument development:

1) Review literatures related to the research title to study method, theories and research summaries, in order to be used in conceptual framework.

2) Determine scope and research questions in concordant with the conceptual framework and objective of the research.

3) Present the instrument, that is conducted, to the thesis advisor for examination and comment, and improves the instrument as suggested by the thesis advisor.

3.4.2 Details of research instrument

Instrument used in this research is mainly a questionnaire which consists of 3 parts as follows:

Part 1 – General socio-economic background of farmer and families consists of 13 variables such as age, education of farmer, number of family members, agricultural workforce, number of children, income of farmer, income of agricultural families, immigration, group membership, and level of sufficiency economy acknowledgment from various sources which is the close-ended questions with multiple choices and open-ended questions with fill-in blank.

Part 2 – Questions regarding the behaviors on information receptivity of the Sufficiency economy philosophy comprise of 5 aspects such as sender (5 items), massage (7 items), channel (18 items)and receiver(5 items).

Those questions apply a multiple choice of level behaviors on information receptivity of the Sufficiency economy philosophy, which are 5 levels (adopted from Likert's scale), how much farmer take a receptivity of the Sufficiency economy philosophy as follows:

1	=	Lowest
2	=	Low
3	=	Moderate

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| 4 | = | High |
| 5 | = | Very high |

Part 3 – Questions regarding - Knowledge Attitude and Adoption of the Sufficiency economy philosophy

- Knowledge of the respondents on the concept of the Sufficiency economy philosophy
- Level of the attitude of the Sufficiency economy philosophy
- Level of the adoption of the Sufficiency economy philosophy

1. Knowledge of the respondents on the concept of the Sufficiency economy philosophy

Those questions apply a multiple choice whether farmer operates Knowledge of the respondents on the concept of the Sufficiency economy philosophy the questions concern about 7 aspects as follows: The meaning and importance (5 items), Middle Path (5 items), Moderation (4 items), Reasonableness (4 items) , Self – immunity (6 items), Application of Knowledge (5 items) and Application of moral principles (5 items) Those questions apply agree-and-disagree choice.

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2. Level of the attitude of the Sufficiency economy philosophy

Questions regarding the attitude of the Sufficiency economy philosophy consist of 3 aspects such as Consciousness (6 items),. Realization (6 items), Needs (5 items)

Those questions apply a multiple choice of level of the attitude of the Sufficiency economy philosophy, which are 5 levels (adopted from Likert's scale), how much farmer take of the attitude of the Sufficiency economy philosophy as follows:

| 1 | = | Strongly disagree |
| 2 | = | Disagree |

3	=	No comment
4	=	Agree
5	=	Strongly agree

3. Level of the adoption of the Sufficiency economy philosophy

Questions regarding the adoption of the Sufficiency economy philosophy consist of 6 aspects such as Self – practice (7 items), Self – reliance (5 items), Earning a living in accordance (10 items), Basic factors in earning a living (4 items), Agricultural livelihood (3 items), Implementation (3 items).

Those questions apply a multiple choice of level of the attitude of the Sufficiency economy philosophy, which are 5 levels (adopted from Likert's scale), how much farmer take of the the adoption of the Sufficiency economy philosophy as follows:

1	=	Awareness
2	=	Interest
3	=	Evaluation
4	=	Trial
5	=	Adoption

3.5 Measurement of variables

Data analysis consists of 17 variables. Measurement and calculation for each of following variables as follows:

1) Gender of farmer (Male/Female) leader of house
2) Ages of farmer is collected due date of making a questionnaire range (the unit "years" is applied) from 21 – 89 years.
3) Education level of farmer (the unit "level" is applied) ranges between uneducated levels to a bachelor degree.
4) Number of family members of farmer housewives (the unit "people" is applied) ranges from 1 to 8 people.

5) Number of agricultural labor workforces of each family (the unit "people" is applied) ranges from 1 to 5 people.

6) Income (Occupation)of farmer (the unit "Baht" is applied) ranges from 1,000 to 80,000 Baht.

7) Income (A secondary profession)of farmer (the unit "Baht" is applied) ranges from 0 to 50,000 Baht.

8) Experience of farmer about the Sufficiency economy philosophy (the unit "years" is applied) from 0 – 50 years.

9) Training of farmer about the Sufficiency economy philosophy (the unit "Time" is applied) from 0 – 50 Time.

10) Field trip of farmer about the Sufficiency economy philosophy (the unit "Time" is applied) from 0 – 40 Time.

11) The level behaviors on information receptivity of the Sufficiency economy philosophy is measured by using weighted mean from sub-questions in Part 2 of the questionnaire. Each respondent shall rate their opinion towards levels of acknowledgement from 1 – 5 according to Likert's scale as follows:

1	=	Lowest
2	=	Low
3	=	Moderate
4	=	High
5	=	Very high

Weighted mean of this variable is from 1 to 5.

12) Knowledge of the respondents on the concept of the Sufficiency economy philosophy is measured by total score to find out Knowledge of the respondents on the concept of the Sufficiency economy philosophy of farmer . In part 3.1 of the questionnaire, the questions concern about 7 aspects as follows: The meaning and importance (5 items), Middle Path (5 items), Moderation (4 items), Reasonableness (4 items) , Self –

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immunity (6 items), Application of Knowledge (5 items) and Application of moral principles (5 items) All of them are agree-and-disagree questions. The respondent who answers "Agree" to the question is equivalent to 1 point. On the other hand, the respondent who answers "Disagree" to the question is equivalent to 0 point.

13) Level of the attitude of the Sufficiency economy philosophy is measured by using weighted mean from the questions in Part 3.2of the questionnaire consisting of of 3 aspects such as Consciousness (6 items), Awareness (6 items), Needs (5 items) . Each respondent shall rate their opinion towards levels of attitude from 1 – 5 according to Likert's scale as follows:

1 = Strongly disagree
2 = Disagree
3 = No comment
4 = Agree
5 = Strongly agree

Weighted mean of this variable is from 1 to 5.

14) Level of the adoption of the Sufficiency economy philosophy is measured by using weighted mean from the questions in Part 3.3of the questionnaire consisting of 3 aspects such as Self – practice (7 items), Self – reliance (5 items), Earning a living in accordance (10 items), Basic factors in earning a living (4 items), Agricultural livelihood (3 items), Implementation (3 items). Each respondent shall rate their opinion towards levels of the adoption from 1 – 5 according to Likert's scale as follows:

1 = Awareness
2 = Interest
3 = Evaluation
4 = Trial
5 = Adoption

Weighted mean of this variable is from 1 to 5.

3.6 Content validity and reliability of research instrument

For the quality of research instrument, the researcher checked the instrument consist of content validity and reliability such as:

3.7.1 Content validity

In order to check whether the questionnaire that is conducted is able to measure as expected and cover the scope, the researcher submit it to thesis advisory committees for their consideration to check for the content validity. Then the improvement can be made as the advisory committees has instructed before testing it in an actual field.

3.7.2 Reliability

The questionnaire that is already approved by the thesis advisory committees shall test with farmer who share similar characteristic, but not the target population 20 people, and find out reliability of the questionnaire by using Alpha Coefficient in pursuant of the method of Cronbach (1951) referred by Edward G. C. and Richard A. Z. (1979: 44) by using SPSS for Windows. It appears that Part 2, the behaviors on information receptivity of the Sufficiency economy philosophy (Massage = 7 Item),(Receiver = 5 Item),(Channel = 18 Item),Part 3.2, Item 17 the attitude of the Sufficiency economy philosophy and Part 3.3, Item (12+20=32) the attitude of the Sufficiency economy philosophy have Cronbach's Alpha Coefficient as follows:

Part 2 (1)	has Cronbach's Alpha Coefficient equivalent to	.824
Part 2 (2)	has Cronbach's Alpha Coefficient equivalent to	.763
Part 2 (3)	has Cronbach's Alpha Coefficient equivalent to	.785
Part 3.2	has Cronbach's Alpha Coefficient equivalent to	.911
Part 3.3 (1)	has Cronbach's Alpha Coefficient equivalent to	.960
Part 3.3 (2)	has Cronbach's Alpha Coefficient equivalent to	.758

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3.7 Data collection

3.7.1 Data sources

In this research, the researcher has collected the data from 2 major sources as follows:

1) Primary data is acquired by asking 375 farmers in Chiang Mai Province by questionnaire.

2) Primary data is acquired by focus group 40 farmers in Chiang Mai Province by questionnaire.

3) Secondary data is acquired from academic papers including as well as websites of related organizations to use as supporting data and compare the research result.

3.7.2 Data collecting method

This research stipulates farmer as a unit of analysis, totaling 375 people. Personal interview of farmer was primarily conducted by the researcher while some parts were carried out by the assistant. However, the researcher has deliberately brought all questions in the questionnaire into the assistant's focus before actually collecting the data. The data collection was conducted from November 2010 to May 2011.

3.8 Data Analysis

This research is a correlational research design to answer the objectives of this study (research questions) as follows:

1 Investigate learning condition on the philosophy of sufficiency economy through the communication process of farmers in Chiang Mai province.

2 Find out levels of knowledge, attitude, and the adoption of sufficiency economy philosophy of the farmers ;

3 Analyze factors effecting the adoption of the philosophy of sufficiency economy of the farmers ; and

4   Synthesize guidelines for the preparation of an appropriate communication process effecting the adoption of sufficiency economy of the farmers.

For the analysis of the data gained in order to answer the 4 objectives of this study, the researcher used SPSS for Windows as follows:

The Statistical Package for the Social Sciences program will be used for data analysis. This consists of the following:

1. Descriptive statistics – used for an analysis of socio – economic characteristics of the samples. Frequency, mean, percentage, and standard deviation were employed.(Part 1)

2. Rating scale of Likert Scale as cited by Srisaard (200 : p.100), weight mean score in used for classification of levels and meaning of the answers.
(Part 2,3),1st research question and 2nd research question

3. Multiple regression analysis to find out related variable or conjointly explain or predict variability of dependent variable for   3rd research question as Prasitratthasin (2001) explained that *"regression analysis is the popular technique because of its special properties that is able to study influence of many and single independent variables related to dependent variables. The major objective of multiple regression analysis is to prove the assumption concerning relation between dependent variable and independent variables by controlling all other variables to see how much each independent variable relates to dependent variable."*

4. Path analysis – used for an analysis of relationship path among multi – variables for 4th research question

1st research question.

Investigate learning condition on the philosophy of sufficiency economy through the communication process of farmers in Chiang Mai province by using weight mean

score is used to measure levels of behaviors on information receptivity of the Sufficiency economy philosophy by comparing with the following criteria.

	Mean	1.00 – 1.49	points	means	Lowest
	Mean	1.50 – 2.49	points	means	Low
	Mean	2.50 – 3.49	points	means	Moderate
	Mean	3.50 – 4.49	points	means	High
	Mean	4.50 – 5.00	points	means	Very high

2nd research question.

Knowledge - Find out levels of knowledge of sufficiency economy philosophy of the farmers by using Descriptive statistics (Frequency, mean, percentage) used for an analysis Knowledge of the respondents on the concept of the Sufficiency economy philosophy by The respondent who answers "Agree" to the question is equivalent to 1 point. On the other hand, the respondent who answers "Disagree" to the question is equivalent to 0 point.

Attitude - Find out levels attitude of sufficiency economy philosophy of the farmers by using weight mean score is used to measure levels of the attitude of the Sufficiency economy philosophy by comparing with the following criteria.

	Mean	1.00 – 1.49	points	means	Strongly disagree
	Mean	1.50 – 2.49	points	means	Disagree
	Mean	2.50 – 3.49	points	means	No comment
	Mean	3.50 – 4.49	points	means	Agree
	Mean	4.50 – 5.00	points	means	Strongly agree

Adoption - Find out levels the adoption of sufficiency economy philosophy of the farmers by using weight mean score is used to measure levels of the adoption of the Sufficiency economy philosophy by comparing with the following criteria.

| | Mean | 1.00 – 1.49 | points | means | Awareness |

Mean	1.50 – 2.49	points	means	Interest
Mean	2.50 – 3.49	points	means	Evaluation
Mean	3.50 – 4.49	points	means	Trial
Mean	4.50 – 5.00	points	means	Adoption

3rd research question.

    Analyze factors effecting the adoption of the philosophy of sufficiency economy of the farmers, the researcher applied multiple regression analysis.

4th research question

    Synthesize guidelines for the preparation of an appropriate communication process effecting the adoption of sufficiency economy of the farmers, the researcher applied Path analysis – used for an analysis of relationship path among multi – variables