CHAPTER 4

RESEARCH FINDING

This research was the exploratory mixed method research design that consisted of the qualitative research and quantitative research. The exploratory mixed method research design was designed to investigate and develop the SEP learning model in practice for farmers by investigating and developing learning model from qaulitative research and confirm the model by quantitative research. Then the result was the components and factors of SEP appropriate learning model for farmers to learn SEP in Phitsanulok, Thailand. The analysis results consisted of 4 topics as follows.

4.1 The Investigation of SEP Learning Model of Farmers in Phitsanulok, Thailand.

    4.1.1   The Components and Factors on SEP Learning of Farmers.

    4.1.2   The SEP Learning Model of Farmers in Phitsanulok, Thailand.

4.2 The Developing on SEP Learning Model of Farmers in Phitsanulok, Thailand.

4.3 The Construct Validity on Developed SEP Learning Model of Farmers in Phitsanulok, Thailand by Using the Confirmatory Factors Analysis Model with LISREL Model.

73

4.4.3   The Recommendation of Farmers on SEP Learning Process to SEP Learning of Farmers.

4.4.4   The Recommendation of Farmers on Component Supporting Learning in SEP Learning of Farmers.

4.4.5   The Recommendation of Farmers on the Output of SEP Learning of Farmers.

4.1 The Investigation of SEP Learning Model of Farmers in Phitsanulok, Thailand.

4.1.1 The Components and Factors on SEP Learning of Farmers.

The investigation of component and factors on the SEP learning model of farmers used the qaulitative research designed by theoretical approach and field study. The qualitative research used by focus group discussion with 28 persons from 14 stakeholders who responsible for SEP extension to farmer in Phitsanulok and the in-depth interview with 18 farmers that were sampled from 9 districts in Phitsanulok. It was found that the components and factors in learning SEP of farmers were as follows.

Phitsanulok was the province on the lower northern part of Thailand far from Bangkok 377 kilometres. The boundary was connected to the other 6 important provinces that were Uttaradit, Loei, Phichit, Phetchabun, Kamphaeng phet and Sukhothai. The five provinces around phitsanulok that was Uttaradit, Phichit, Phetchabun, Kamphaeng phet and Sukhothai were the group that was assigned from the National Economic and Social development board as an exclusive economic zone and special economic zone and Phitsanulok also was assigned as head city for devloping business. By the conclude of Council of Ministers on 29 July 1977, Phitsanulok and the five provinces was assigned to be developed as the Indo China Intersection and the conclusion of the Council of Ministers on 6 May 2003, Phitsanulok was assigned to be integration governed that provincial governor was the Chief Executive Officer (CEO). Phitsanulok was assigned the vision and strategy in developing the group of the province as the direction framework for development in

order for government and private sectors, Local administration organization and

people were driven and developed on the right direction as shown in table 4.1

Table 4.1 Shown Directional Framework of Developing Phitsanulok and Provincial

Group of Indochina Intersection. (Phitsanulok, 2010)

Provincial Group of Indochina Intersection (Tak Sukhothai Utharadit Peachaboon and Phitsanulok Province)	Phisanulok Province
Vision: Indochina Intersection central of service	**Vision**: Phitsanulok is the service city of Indochina
Strategy: developing to be Indochina Intersection central of service, economic and tourism source	**Strategy**: Developing to be variety of service city and safety
objectives: 1. To connect transportation route in provincial group, region and international to utilize location potential and readiness of basic service infrastructural in order to develop new economic base to conect economic among neighbor country. 2. To develop, connect and conserve eco-tourism source and contemporary history including the developing of tourism location databases in provincial groups in order to make income in both tourism and handicraft. 3. To be a personnel development center in order to increase potentiality of product and service 4. To promote in applying suitable technology to increase agricultural maketing value. 5. To be a supporter and cooperative connection of boarder trade 6. To be systematical management of natural resources and environment.	**objectives**: 1. To be the central of transportation in goods and passenger. 2. To be the central of information and communication technology on the lower northern part. 3. To be the central of international standard health service and the province of healthy people to conduce toward Healthy Thailand. 4. To be a quality and standard in service for both government and private sector. 5. Farmers and agricultural organization had an efficiency and quality in production management and quality according to the requirement of the market. 6. To be a central of conferences in lower northern part including tourism service of the province. 7. To be a clean city, beauty and safety in life and property. 8. To be a city that have strength community and economical and socially sustainable.

Table 4.1 Continued

Provincial Group of Indochina Intersection (Tak Sukhothai Utharadit Peachaboon and Phitsanulok Province)	Phisanulok Province
The agricultural strategy (the 4th m strategy) to develop production process, management and agricultural product markets.	The agricultural strategy (the 5th strategy) 1. The developing on the management of safety agricultural production 2. The developing on the management of marketing connection to agricultural products 3. The developing on the management of processing connection to agricultural products 4. To promote OTOP (One Tumbol One Product) and SMEs (Small and Medium size Enterprises) to be international production standard and marketing. 5. To build food safety 6. To promote SEP for agricultural 7. To conserve and develop species of plant, animal and fishery. 8. To develop the water resources and systematical water management.

According to the policy on developing phitsanulok, the agricultural extension in Phitsanulok has to apply SEP in order for both government and private sector relating to agricultural extension would have a guideline in SEP extension to farmers and the context and background of Phitsanulok could be explaining as follows.

The population of phitsanulok in 2009 was 845,561 people. The household in Phitsanulok was 290,074 families that consisted of 77,031 Agricultural families or around 26.24% of all Phitsanulok population. (Phitsanulok, 2010)

Phitsanulok has the distinct geographical feature that was the diversity of natural because the landscape on the north, east and some of the middle areas were high mountains, high lands and slope to the central. In the west and south of the province was plain and low land that could carry out every field of agricultural such as forestry, plant, fishery and livestock. In the low land near the river at amphoe Muang, Amphoe Phompiram, Amphoe bangkratum and Amphoe bangrakum were the important places for growing rice and produce a main income for Phitsanulok. Therefore, Phitsanulok consisted of variety of farmers that was interesting to do research. Moreover, in Amphoe Bangrakum near Yom river was the place for water containers in rainy season and natural fish production that produce income for local people.

The general weather in phitsanulok was warm and humid, the weather was very high in summer and the highest temperature was in May 2009 that the average temperature was 39.5°C. In rainy seasons, there was much rain in August to September that was the cultivated season for farmers. The average amount of rain in 2009 was 1,338.5 mm. (Phitsanulok Weather Station, 2009 cited by Phitsanulok, 2010). In winter, the weather is relatively cold between December and February, the average temperature that lowest in January was 10.4°C and in high mountain and high plain area in amphoe Nakhon Thai and amphoe Chat trakan could grow cold area plant, the average relative humidity in 2009 was 68.68 % and highest relative humidity was in June and the lowest relative humidity was in February. (Phitsanulok, 2010)

The area of Phitsanulok was 10,815,854 square kilometres or 6,759,908.75 rai and divided the administration into 9 districts, 93 sub-districts, 1,048 villages and 19 municipals. The agricultural economic office reported that the area in Phitsanulok consisted of the agricultural area about 2,404,936 rai, the forest area about 2,462,563 rai and the non- agricultural area about 1,892,410 rai. In agricultural area, there was 1,452,936 rai or 60.39% that was rice field, 627,009 rai or 26.07% that was farm plant and 167,361 rai or 6.95% that was fruit and tree. (Phitsanulok, 2010)

The Gross Domestic Product (GDP) of Phitsanulok in 2009 was 62,238.5 million baht that the GDP on Agricultural was 16,141.7 million baht and the important industrial crop was rice, cassava, sugarcane, maize, green bean and soy bean. In 2008, the gross agricultural production value was 11,482,725,175 baht and the statistics from 2006 to 2008 shown that rice was the most important agricultural product that took most of the area for growing and product value. The gross rice production in 2009 (in season and off season rice) was 340,090 tonnes and the production value was 655,683,673 baht. Next on down was maize with the production of 340,090 tonnes and the production value was 10,080,110,923 baht, sugarcane production was 827,175 tonnes with the production value of 412,122,183 baht, cassava production was 383,292 tonnes with the production value of 293,548,193 baht, respectively. The important livestock's production in Phitsanulok was beef cattle, buffalo, pig and poultry with the net production value of 662,125,243 baht. (Phitsanulok, 2010)

The private and government organization in Phitsanulok had established the project on promote SEP knowledge for farmer in Phitsanulok according to the

province strategy to promote the knowledge and understanding on SEP by the agricultural activity. This project was started on the ninth Nation economic and social development plan and this knowledge extensions were carries out continually until now (2548-2454) (Phitsanulok, 2010) by the established of SEP learning center as the learning source and study tour for farmers with the main responsibility of Department of Agricultural Extension.

SEP learning center was the place to practice skill on agricultures that appropriate to the need of community in each area for farmers to learn and practices on appropriate skill in their potential along with trying to understand the SEP by develop a demonstrating farm/ learning farm that was on the community to be the learning center and set the agricultural extension officer on each district as a manager in managing, analyzing and farm planning, accountings, the operation under the SEP concept and the new agricultural theory. This promotes learning were carries out under appropriate technology and management on production plans and correspond to the requirement of markets by using community stage and learning process as farmers school for transfer knowledge, cooperates learning among farmers and apply in their farm. Then, farmers could produce variety of food to consume in family and community, gather problem and find solution together including planning for community development according to SEP. (Department of agricultural extension, 2007)

From the study of data in Qualitative methods, it was found that the SEP learning of farmers in phitsanulok derived from link relationship and rationality in the components on both context and background of farmers. In the content of SEP, by

systematic learning process on the support from government and private sector, the SEP learning output would be developed in both practice and attitude that would build farmers to be required characteristics man that was good, intelligent and happy man in sustainable living.

The component on context and background of farmers in the attitude of farmers on agricultural under SEP that experience was the important thing for farmers to apply SEP in agriculture. Most farmers who apply SEP in agricultural because farmers face the problem in production and find out that using SEP could solve the sustainable problem. Farmers were awared that in apply SEP on agricultural, there should be patient, diligence, active in searching for information and carry on agricultural activity and also had positive attitude on production by aware of safety living for oneself and others, had morally and behave on religion strictly, free from all vices and drugs that would decrease healthily and the obstacle to learning.

The content of SEP that farmers apply into practice was the content in three characters and two conditions in production that consisted of moderation, resonableness and self immunity under the condition of knowledge along with moral. Farmers could apply this content as appropriate because SEP was the principle of living in the middle way, operate activity in moderation and appropriate, action with resonableness. Each farmer could apply agricultural method in various ways on SEP concept and appropriate to area and farmers' experience by emphasis on enough living, production enough to consume and the rest was distributed or sell as appropriated. Moreover, creating self immunity on living by doing diversity of agriculture for balance the nature and build up the sustainable. In understanding SEP in agriculture, farmers understand the content of moderation from self understanding

by using consciousness in determining the level of sufficiency and family accountings to determine the need thing for living and farmers could classify the way to manage the expense reasonably. In production, farmers chose to produce reasonably from the principle that farmers remind about the need in living especially in food and farmers would choose to produce everything for consuming to reduce expense.

"...Pay important to pot by think of what should be in the pot and produce that ....."

"... ให้ความสำคัญกับหม้อ โดยคิดว่าในหม้อควรมีอะไรบ้างก็ผลิตอันนั้นแหละ..."

Farmers choose to produce plant for food in family for mainly consuming, growing what to consume and the rest from consuming would be distributed and sell as appropriate that build the self immunity in living. Farmers produce without risk of external factors, market machanisms to direct the type of plant to produce that was fluctuateing and risk. Farmers would be happy in living and ready to learning and develop one-self regularly, using knowledge along with moral in production that are friendly with environment, help and distribute knowledge to social in order to create love and unity of their own community.

It was found that the learning processes that promote farmers in learning SEP were farmers learning SEP content in the meaning of self awareness and self reliance. This learning is emphasized on learning on experience by managing the learning for farmers who was adult that have many experiences to admit and change behaviour. Farmers were learned by practising to generate experience and new knowledge that correlate to the existing knowledge. This learning is on experience and self learning by farmers who was a learner had dynamics change. From that learning principle, the learning management for farmers by the supporting agencies was to select the model

farmers to transfer knowledge and experience as "the SEP learning center" and the supporting agency would support on production technology, agricultural knowledge and cooperate with small group farmers to learn by training, study tour, practice and exchange knowledge and experience in agricultural on SEP. It should be emphasized on farmers to exchange knowledge between farmers continuously by the learning support agency selected the model farmer for transfer knowledge and experience at SEP learning center in each district. Moreover, the learning support agencies collaborate with the basic education office to teach and train student in school in order to build SEP concept to student in the way of "SEP learning center in school". This learning center teaches the student by using the activity of saving money in school and accounting in household in order for students who was the children of farmers carry out saving account with their parent. The objectives of this activity were to build the awareness of students in reasonable expense with parents and expect that the student who were farmers' children would be an intermediates in dispersion SEP to farmers and develop the awareness of SEP to youth.

The component and supporting factor in learning SEP of farmers were the driven of SEP by government and private sector, the basic education office, local academic institute and mass communication. These institutes support in promoting SEP knowledge for farmer and deploy the policy under the national economic and social development plan that SEP was contained in from the ninth plan until the present plan. The continual of containing SEP in the national economic and social development plan was important in driven the SEP extension project for farmer because most of the agricultural extension institutes were the government sector, therefore any project needs to operate according to national development plans. To

support the operation of Agricultural extension officer and the budget, the SEP should be on the national development plan continuously.

> *"...conclude that only it existed in the plan, SEP still being continued because it was appropriate to the living of Thai farmers..."*
>
> *"...เอาเป็นว่าเพียงแค่มันไม่ล้มหายตายจากไปจากแผนฯ ปรัชญาเศรษฐกิจพอเพียงนี้ก็จะยัง ไปได้ เนื่องจากมันเหมาะสมกับการดำเนินชีวิตของเกษตรกรไทย..."*

The learning output on SEP of farmers in Phitsanulok was the SEP affect on farmers to show the learning behavior in both practice and attitude by learning from self reliance activity according to the first level of new agricultural theory. The required knowledge was the capable in land and water resource management for agricultural, the utilization of natural resource, the diversity of agricultural activity that was subsidiary, increase income, use family labor, production cost reduction, the combination of growing crops, livestock and fishery in ricef field to the fullest extent, the family account for farmer to discover family problem to reduce cost and manage expense reasonably. Moreover, the rice field should be managed by reducing the depending on external factors and depending more on oneself by using the available resources in area to use in agricultural such as using organic fertilizer instead of chemical, wood vinegar instead of pesticide and the living with sufficiency economy was the carry out the career on the available resource by using knowledge and ability in order to be sufficient in the manner of enough to live and consumable that would create happiness in family. The rest from the consuming in family could be sold for money and keep as the reserve fund and the farmers would be the one who had a required behavior that was good, intelligent and happy.

4.1.2   The SEP Learning Model of Farmers in Phitsanulok, Thailand.

This part continued from section 4.1.1 that derived from the investigating process with multiple research methods and it was found 5 components and factor of each component. Then, used the system model theory to classify the components and factors of SEP learning model in Phitsanulok, Thailand that was as follows.

Component 1: Context and Background

1. Sex

2. Age

3. Education

4. Income

5. Household members

6. Family labour

7. Land holding

8. Farm area

9. Water resources

10. Loan

11. Social status

12. Agricultural experience

13. Economic crisis and living problems

14. Stressful from outstanding debt.

15. Existing agricultural occupation

16. Knowledge and understanding in agricultural on SEP

17. Problems in farm production.

18. Good working attitude

19. Follow up SEP through media

20. Awareness of health

21. Awareness of drugs and vices effected

Component 2: Content of SEP

1. Moderation means appropriately which is not too much and not too less in the dimension of action such as the production and consumption in moderate level that brings the balanced and prompt against the change.

2. Reasonableness means the decision about the level of moderation that should be reasonable by carefully considering the cause factor and the relevant data along with the expected results which could occur from those actions.

3. Self – immunity means the prompt preparation for the consequence and change in any aspect which would be occurred by considering the possibility of any situation that could be occurred in the sooner or later future.

4. Knowledge conditions means overall technical knowledge to be applied in various opportunities thoroughly and carefully.

5. Ethic conditions means knowledge together with ethicity with the awareness of honesty, patience, intelligence, etc.

Component 3: Learning process including learning principle and learning guideline management of SEP by focus on experience learning process.

1. Learning principle on SEP.

1.1 Importance of concept, experience through various activities.

    1.2 Reflection of experiences from observation and practices.

    1.3 Concept conclusion.

    1.4 Experimental by practice.

    1.5 Farmers' knowledge derived from searching and research.

    1.6 Bringing knowledge into practices.

    1.7 Exchange of knowledge between extension agents and farmers and
        among all farmers.

    1.8 Development of continuing knowledge of farmers.

2.   Learning guideline management on SEP of farmers.

    2.1 Set up learning center on SEP.

    2.2 Organize training, field trip and introduce model farmers dealing with
        SEP.

    2.3 Reflect the experience of model farmers to be award of introduce SEP
        to be agricultural practice approach.

    2.4 Encourage the farmers to be self – sufficient through producing
        everything for consumption to reduce expenses.

    2.5 Stimulate farmers to know themselves by producing family and farm
        accounts.

    2.6 Arouse the farmers to make understanding on integrated farming in
        harmony with the environment by learning from learning centers to
        practice on their farms.

    2.7 Encourage youth farmers to produce farm accounts so as to know their
        own family problems.

2.8 Farmers and extension agents should consult one to another on various

activities regularly.

2.9 Exchange knowledge on farm problems among farmers themselves

under continuing basis.

Component 4: Component Supporting Learning.

1. SEP is the speech of the King.

2. SEP is the National Socio – Economic Plan of every organization.

3. Supporting agents is supporting learning participation with farmers.

4. Supporting agents creates "learning networking" on SEP with farmers.

5. Extension agents have knowledge and understanding on SEP.

6. Extension agents follow up the output of SEP continuously.

7. Supporting budget on SEP is being continual from government sector.

8. Presentation of SEP from mass communication is regular.

Component 5: The SEP Learning Output

1. The output of practices

    1.1 Having land and water management

    1.2 Having diversified farming

    1.3 Having full use of family labours

    1.4 Having family and farm accounts

    1.5 Having production cost reduction

    1.6 Having medicinal plants (Herbs)

    1.7 Having backyard garden

    1.8 Having green manure and bio – fertilizer

    1.9 Having bio – extracts from farm productions

1.10 Having recycled of waste material.

1.11 Having integrated farming.

1.12 Having fishery in garden plot or rice field or pond for protein food and extra income.

1.13 Having a hen farm for food in family by using farm production waste and scraps vegetable.

1.14 Awareness of natural resource and environment and sustainable use

1.15 Indigenous and modern technology use

1.16 Mutual help and healthy networking

1.17 Income increase, expenditure reduction and saving

2. The output on attitude: having an attitude on living in the middle path and self reliance.

2.1 Having good consciousness.

2.2 Having discipline and responsibility.

2.3 Following regulations of each religion and culture.

2.4 Being honest.

2.5 Having passion, mercy and sacrified.

2.6 Having democratic spirit.

2.7 Able to work with the others happily.

2.8 Able to classify reasonably and having concept.

2.9 Able to decide which is right or wrong.

2.10 Having initiatives and aspirations.

2.11 Able to connect and manage "holistic" body of knowledge.

2.12 Having leadership ability.

2.13   Being a modern person and able to catch up with technology.

2.14   Being healthy both body and mind.

2.15   Having good human relations.

2.16   Being independent without doing evil.

2.17   Able to take care of oneself.

2.18   Being enthusiastic.

2.19   Able to develop themselves.

From investigating the component and influence factors on SEP learning of farmers in Phitsanulok, the SEP learning model of farmers was described as follows.

Component 1: Context and Background of Farmers
1. Basic information about socio – economic condition of farmers
   1) Sex
   2) Age
   3) Education
   4) Income
   5) Household members
   6) Family labours
   7) Land holding
   8) Farm area
   9) Water resources
   10) Loan
   11) Social status
   12) Agricultural experience
   13) Economic crisis and living problem
   14) Stressful from outstanding dept
   15) Existing agricultural occupation
   16) Knowledge and understanding in agricultural on SEP
   17) Problem in farm production
   18) Good working attitude
   19) Follow up SEP through media
   20) Awareness of health
   21) Awareness of drugs and vices effected

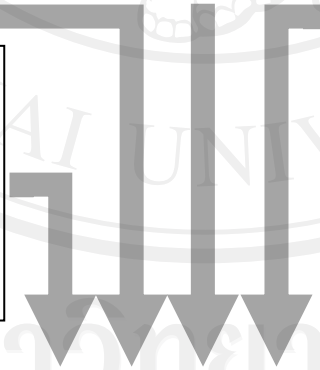**Component 2: Content of SEP**
1. Moderation means appropriately which is not too much and not too less in the dimension of action such as the production and consumption in moderate level that brings the balanced and prompt against the change
2. Reasonableness means the decision about the level of moderation that should be reasonable by carefully considering the cause factor and the relevant data along with the expected results which could occur from those actions.
3. Self – immunity means the prompt preparation for the consequence and change in any aspect which would be occurred by considering the possibility of any situation that could be occurred in the sooner or later future
4. Knowledge conditions means overall technical knowledge to be applied in various opportunities thoroughly and carefully
5. Ethic conditions means knowledge together with ethicity with the awareness of honesty, patience, intelligence, etc
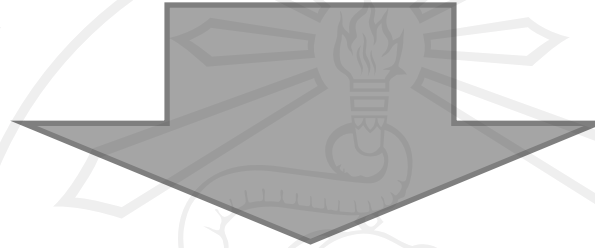
Component 3: SEP Learning Process
1. Learning principle on SEP
   1.1 Importance of concept, experience through various activities
   1.2 Reflection of experiences from observation and practices
   1.3 Concept conclusion
   1.4 Experimental by practice
   1.5 Farmers' knowledge derived from searching and research
   1.6 Bringing knowledge into practices
   1.7 Exchange of knowledge between extension agents and farmers and among all farmers
   1.8 Development of continuing knowledge of farmers
2. Learning guideline management on SEP of farmers
   2.1 Set up learning center on SEP
   2.2 Organize training, field trip and introduce model farmers dealing with SEP
   2.3 Reflect the experience of model farmers to be award of introduce SEP to be agricultural practice approach
   2.4 Encourage the farmers to be self – sufficient through producing everything for consumption to reduce expenses
   2.5 Stimulate farmers to know themselves by producing family and farm accounts
   2.6 Arouse the farmers to make understanding on integrated farming in harmony with the environment by learning from learning centers to practice on their farms
   2.7 Encourage youth farmers to produce farm accounts so as to know their own family problems
   2.8 Farmers and extension agents should consult one to another on various activities regularly
   2.9 Exchange knowledge on farm problems among farmers themselves under continuing basis

Component 4: Component Supporting Learning
1. SEP is the speech of the King
2. SEP is the National Socio – Economic Plan of every organization
3. Supporting agents is supporting learning participation with farmers
4. Supporting agents creates "learning networking" on SEP with farmers
5. Extension agents have knowledge and understanding on SEP
6. Extension agents follow up the output of SEP continuously
7. Supporting budget on SEP is being continual from government sector
8. Presentation of SEP from mass communication is regular

Component 5: The SEP Learning Output	2. Output on attitude
1. The output of practices	2.1 Having good consciousness
1.1. Having land and water management	2.2 Having discipline and responsibility
1.2. Having full use of family labours	2.3 Following regulations of each religion and culture
1.3. Having family and farm accounts	2.4 Being honest
1.4. Having diversified farming	2.5 Having passion, mercy and sacrificed
1.5. Having production cost reduction	2.6 Having democratic spirit
1.6. Having medicinal plants	2.7 Able to work with the others happily
1.7. Having backyard garden	2.8 Able to classify reasonably and having concept
1.8. Having green manure and bio – fertilizer	2.9 Able to decide which is right or wrong
1.9. Having bio – extracts from farm productions	2.10 Having initiatives and aspirations
1.10. Awareness of natural resource and environment and sustainable use	2.11 Able to connect and manage "horistic" body of knowledge
1.11. Indigenous and modern technology use	2.12 Having leadership ability
1.12. Mutual help and healthy networking	2.13 Being a modern person and able to catch up with technology
1.13. Income increase, expenditure reduction and saving	2.14 Being healthy both body and mind
1.14. Awareness of natural resource and environment and sustainable use	2.15 Having good human relations
1.15. Indigenous and modern technology use	2.16 Being independent without doing evil
1.16. Mutual help and healthy networking	2.17 Able to take care of oneself
1.17. Income increase, expenditure reduction and saving	2.18 Being enthusiastic
	2.19 Able to develop themselves

Figure 4.1 The Investigated Learning Model on Sufficiency Economy Philosophy of Farmers in Phitsanulok, Thailand.

4.2 The Developing on SEP Learning Model of Farmers in Phitsanulok, Thailand.

The SEP learning model of farmers was developed by examining the content validity of the component and factors of the SEP learning model of farmer from section 4.1 by five experts to evaluate the appropriateness of the SEP learning model of farmers. The evaluating results by the expert were shown in Table 4.2

Table 4.2 The Results of Evaluation of the Appropriateness of the SEP Learning Model of Farmers by the Expert**.**

The component of the SEP learning model of farmers	An appropriate of SEP learning model		
	Median	I.R $(Q_3 - Q_1)$	agreement on appropriateness
The learning model on SEP of farmers in Phitsanulok province, Thailand are 5 components including 1) Context and background of farmers 2) Content of SEP 3) Learning Process 4) Component supporting learning of SEP and 5) The output on SEP.	5	1	Agree
The appropriateness in detail of each component			
Component 1: The context and background of farmers.	4	1	Agree
1. Sex	4	2.5	Disagree
2. Age	5	2.5	Disagree
3. Education	5	1.5	Agree
4. Income	5	1	Agree
5. Household member	4	1.5	Agree

Table 4.2 Continued

The component of the SEP learning model of farmers	An appropriate of SEP learning model		
	Median	I.R $(Q_3 - Q_1)$	agreement on appropriateness
6. Family Labours	4	1	Agree
7. Land holding	4	1	Agree
8. Farm area	4	1	Agree
9. Water resources	5	0.5	Agree
10. Loan	5	1	Agree
11. Social status	5	0.5	Agree
12. Agricultural experience	5	1	Agree
13. Economic crisis and living problems	5	1.5	Agree
14. Stressful from outstanding debt.	4	2.5	Disagree
15. Existing agricultural occupation	4	1	Agree
16. Knowledge and understanding in agricultural on SEP.	5	0.5	Agree
17. Problems in farm production.	5	2.5	Disagree
18. Good working attitude	5	0.5	Agree
19. Follow up SEP through media	5	0.5	Agree
20. Awarenness of health	5	1.5	Agree
21. Awarenness of drug and vices effected	5	1.5	Agree
Component 2: Content of SEP	5	0	Agree
1. Moderation means appropriately which is not too much and not too less in the dimension of action such as the production and consumption in moderate level that brings the balanced and prompt against the change.	5	0.5	Agree

…

94

Table 4.2 Continued

The component of the SEP learning model of farmers	An appropriate of SEP learning model		
	Median	I.R $(Q_3 - Q_1)$	agreement on appropriateness
2. Reasonableness means the decision about the level of moderation that should be reasonable by carefully considering the cause factor and the relevant data along with the expected results which could occur from those actions.	5	0	Agree
3. Self – immunity means the prompt preparation for the consequence and change in any aspect which would be occurred by considering the possibility of any situation that could be occurred in the sooner or later future.	5	0	Agree
4. Knowledge conditions means overall technical knowledge to be applied in various opportunities thoroughly and carefully.	5	0.5	Agree
5. Ethic conditions means knowledge together with ethicity with the awareness of honesty, patience, intelligence, etc.	5	0	Agree
Component 3: SEP Learning process including learning principle and learning guideline management of SEP by focus on experience learning process.	4	1	Agree
1. Learning principle on SEP.	5	1	Agree
1.1 Importance of concept, experience through various activities.	5	0.5	Agree

Table 4.2 Continued

The component of the SEP learning model of farmers	An appropriate of SEP learning model		
	Median	I.R $(Q_3 - Q_1)$	agreement on appropriateness
1.2 Reflection of experiences from observation and practices.	5	1	Agree
1.3 Concept conclusion.	5	0.5	Agree
1.4 Experimental by practice.	5	0.5	Agree
1.5 Farmers' knowledge derived from searching and research.	5	1	Agree
1.6 Bringing knowledge into practices.	5	0.5	Agree
1.7 Exchange of knowledge between extension agents and farmers and among all farmers.	5	1	Agree
1.8 Development of continuing knowledge of farmers.	5	1	Agree
2. Learning guideline management on SEP of farmers.	4	1	Agree
2.1 Set up learning center on SEP.	5	1	Agree
2.2 Organize training, field trip and introduce model farmers dealing with SEP.	5	0.5	Agree
2.3 Reflect the experience of model farmers to be award of introduce SEP to be agricultural practice approach.	5	0.5	Agree
2.4 Encourage the farmers to be self – sufficient through producing everything for consumption to reduce expenses.	5	1	Agree
2.5 Stimulate farmers to know themselves by producing family and farm accounts.	4	1	Agree

Table 4.2 Continued

The component of the SEP learning model of farmers	An appropriate of SEP learning model		
	Median	I.R $(Q_3 - Q_1)$	agreement on appropriateness
2.6 Arouse the farmers to make understanding on integrated farming in harmony with the environment by learning from learning centers to practice on their farms.	5	1.5	Agree
2.7 Encourage youth farmers to produce farm accounts so as to know their own family problems.	4	2.5	Agree
2.8 Farmers and extension agents should consult one to another on various activities regularly.	5	1	Agree
2.9 Exchange knowledge on farm problems among farmers themselves under continuing basis.	5	0	Agree
Component 4: Component Supporting Learning.	5	0	Agree
1. SEP is the speech of the King.	5	0	Agree
2. SEP is the National Socio – Economic Plan of every organization.	5	1	Agree
3. Supporting agents is supporting learning participation with farmers.	5	0.5	Agree
4. Supporting agents creates "learning networking" on SEP with farmers.	5	0.5	Agree
5. Extension agents have knowledge and understanding on SEP.	5	0.5	Agree

Table 4.2 Continued

The component of the SEP learning model of farmers	An appropriate of SEP learning model		
	Median	I.R $(Q_3 - Q_1)$	agreement on appropriateness
6. Extension agents follow up the output of SEP continuously.	5	1	Agree
7. Supporting budget on SEP is being continual from government sector.	5	0	Agree
8. Presentation of SEP from mass communication is regular.	5	0.5	Agree
Component 5: The SEP Learning Output including the output of practices and the output on attitude.	5	0.5	Agree
1. The output of practices.	5	1	Agree
1.1 Having land and water management.	5	0.5	Agree
1.2 Having diversified farming	5	0.5	Agree
1.3 Having full use of family labours	5	0.5	Agree
1.4 Having family and farm accounts	5	0.5	Agree
1.5 Having production cost reduction	5	0.5	Agree
1.6 Having medicinal plants (Herbs)	4	1.5	Agree
1.7 Having backyard garden.	5	1.5	Agree
1.8 Having green manure and bio – fertilizer	5	1.5	Agree
1.9 Having biochemical – extracts from farm productions	5	1.5	Agree
1.10 Having recycled of waste material.	5	2	Disagree
1.11 Having integrated farming.	5	2	Disagree

Table 4.2 Continued

The component of the SEP learning model of farmers	An appropriate of SEP learning model		
	Median	I.R $(Q_3 - Q_1)$	agreement on appropriateness
1.12 Having fishery in garden plot or rice field or pond for protein food and extra income.	5	2	Disagree
1.13 Having a hen farm for food in family by using farm production waste and scraps vegetable.	5	2	Disagree
1.14 Awareness of natural resource and environment and sustainable use.	5	0.5	Agree
1.15 Indigenous and modern technology use.	5	0.5	Agree
1.16 Mutual help and healthy networking.	5	0	Agree
1.17 Income increase, expenditure reduction and saving.	5	0.5	Agree
2. The output on attitude.	5	1	Agree
2.1 Having good consciousness.	5	1	Agree
2.2 Having discipline and responsibility.	5	0.5	Agree
2.3 Following regulations of each religion and culture.	4	1	Agree
2.4 Being honest.	5	0.5	Agree
2.5 Having passion, mercy and sacrified.	5	0.5	Agree
2.6 Having democratic spirit.	5	1	Agree
2.7 Able to work with the others happily.	5	1	Agree
2.8 Able to classify reasonably and having concept.	5	0.5	Agree
2.9 Able to decide which is right or wrong.	5	0	Agree
2.10 Having initiatives and aspirations.	5	0.5	Agree

Table 4.2 Continued

The component of the SEP learning model of farmers	An appropriate of SEP learning model		
	Median	I.R $(Q_3 - Q_1)$	agreement on appropriateness
2.11 Able to connect and manage "holistic" body of knowledge.	5	0.5	Agree
2.12 Having leadership ability.	5	1.5	Agree
2.13 Being a modern person and able to catch up with technology.	5	0.5	Agree
2.14 Being healthy both body and mind.	5	1	Agree
2.15 Having good human relations.	5	1	Agree
2.16 Being independent without doing evil.	5	1	Agree
2.17 Able to take care of oneself.	5	1	Agree
2.18 Being enthusiastic.	5	1	Agree
2.19 Able to develop themselves.	5	0.5	Agree

Table 4.2 indicated that the expert agreed on the level of appropriateness of all 5 developed components with median value of 5 and I.R. value of 1. The 5 components have median value between 4 to 5 and I.R. value between 0 to 2.5 that could classified each component as follows.

The component of context and backgroungd of farmers on the topics of sex, age, stressful from outstanding debt and problems in farm production were disagree by the expert opinion due to the I.R value is more than 1.5 but the component of sex and age and stressful from outstanding debt were the important component in personal characteristics of farmers, so these component were still existing in the studied component and would be analysed for the construct validity.

100

The component of the output of SEP learning of farmers in practice in the topic of 1) Having recycle of wasted materials such as growing mushromm from rice straw 2) Having integrated farming 3) Having fishery in garden plot or rice field or pond for protein food and extra income and 4) Having a hen farm for food in family by using farm production waste and scraps vegetable were disagree by the expert opinion due to the I.R value was more than 1.5 but these components were the important components, so these component were still included in the study component by combining with the other topics that was the same meaning and would be analysed for the construct validity.

In the section on the analysis of additional recommendation on SEP learning model of farmers, it was found that the expert recommended to add a question in the component of the context and background of farmers in the topic of 1) the leadership of leader in community or farmer's leader 2) the attitude on SEP 3) the membership of group or organization in community 4) the strictness in application of religion. Then, the SEP learning model was edited according to the recommendation of the expert and delveloped as the SEP learning model of farmers in Phitsanulok, Thailand. The 5 classified components were refered from figure 4.1 on page 90 and could be classified in to sub sub component and code of factor in each component according to the SEP learning model as shown in figure 4.2

Component 1: Context and Background of Farmers – CONT

1. Basic information about socio – economic condition of farmers
   1) Sex – SEX
   2) Age – AGE
   3) Education – EDU
   4) Religion – RELIGION
   5) Social status – STATUS
   6) Household member – HOUSEHOLD
   7) Family labours – LABOUR
   8) Agricultural experience – AGIEXPER
   9) Land holding – LAND
   10) Farm area – LAND USE
   11) Income – INCOME
   12) Loan – LOAN
   13) Water resources – WATER
   14) Farmers attitude - ATTI
      14.1) Economic crisis and living problem – ATTI1
      14.2) Awareness of health – ATTI2
      14.3) Awareness of drugs and vices effected – ATTI3
      14.4) Existing agricultural occupation – ATTI4
      14.5) Knowledge and understanding in agricultural on SEP – ATTI5
      14.6) Good working attitude – ATTI6
      14.7) Follow up SEP through media – ATTI7
      14.8) Regular training and study tour – ATTI8
      14.9) Religion practices – ATTI9

Component 4: Component Supporting Learning - COMP

1. SEP is the speech of the King – COMP1
2. SEP is the National Socio – Economic Plan of every organization – COMP2
3. Supporting agents is supporting learning participation with farmers – COMP3
4. Supporting agents creates "learning networking" on SEP with farmers– COMP5
5. Extension agents have knowledge and understanding on SEP – COMP
6. Extension agents follow up the output of SEP continuously – COMP6
7. Supporting budget on SEP is being continual from government sector – COMP7
8. Presentation of SEP from mass communication is regular – COMP8

Component 2: Content of SEP - CSEP

1. Moderation means appropriately which is not too much and not too less in the dimension of action such as the production and consumption in moderate level that brings the balanced and prompt against the change – CSEP 1
2. Reasonableness means the decision about the level of moderation that should be reasonable by carefully considering the cause factor and the relevant data along with the expected results which could occur from those actions. – CSEP 2
3. Self – immunity means the prompt preparation for the consequence and change in any aspect which would be occurred by considering the possibility of any situation that could be occurred in the sooner or later future – CSEP 3
4. Knowledge conditions means overall technical knowledge to be applied in various opportunities thoroughly and carefully – CSEP 4
5. Ethic conditions means knowledge together with ethicity with the awareness of honesty, patience, intelligence, etc – CSEP 5

Component 3: SEP Learning Process – PROC

1. Learning principle on SEP – PROC1
   1.1. Importance of concept, experience through various activities – PROC1.1
   1.2. Reflection of experiences from observation and practices – PROC1.2
   1.3. Concept conclusion – PROC1.3
   1.4. Experimental by practice – PROC1.4
   1.5. Farmers' knowledge derived from searching and research – PROC1.5
   1.6. Bringing knowledge into practices – PROC1.6
   1.7. Exchange of knowledge between extension agents and farmers and among all farmers – PROC1.7
   1.8. Development of continuing knowledge of farmers - PROC1.8
2. Learning guideline management on SEP of farmers – PROC2
   2.1 Set up learning center on SEP– PROC2.1
   2.2 Organize training, field trip and introduce model farmers dealing with SEP – PROC2.2
   2.3 Reflect the experience of model farmers to be award of introduce SEP to be agricultural practice approach – PROC2.3
   2.4 Encourage the farmers to be self – sufficient through producing everything for consumption to reduce expenses – PROC2.4
   2.5 Stimulate farmers to know themselves by producing family and farm accounts – PROC2.5
   2.6 Arouse the farmers to make understanding on integrated farming in harmony with the environment by learning from learning centers to practice on their farms – PROC2.6
   2.7 Encourage youth farmers to produce farm accounts so as to know their own family problems – PROC2.7
   2.8 Farmers and extension agents should consult one to another on various activities regularly – PROC2.8
   2.9 Exchange knowledge on farm problems among farmers themselves under continuing basis – PROC2.9

Component 5: The SEP Learning Output - OUT	
1. The output of practices – OUT1	**2. Output on attitude – OUT2**
1.1 Having land and water management – OUT1.1	2.1 Having good consciousness – OUT2.1
1.2 Having full use of family labours – OUT1.2	2.2 Having discipline and responsibility – OUT2.2
1.3 Having family and farm accounts – OUT1.3	2.3 Following regulations of each religion and culture – OUT2.3
1.4 Having diversified farming – OUT1.4	2.4 Being honest – OUT2.4
1.5 Having production cost reduction – OUT1.5	2.5 Having passion, mercy and sacrified – OUT2.5
1.6 Having medicinal plants – OUT1.6	2.6 Having democratic spirit – OUT2.6
1.7 Having backyard garden – OUT1.7	2.7 Able to work with the others happily – OUT2.7
1.8 Having green manure and bio – fertilizer – OUT1.8	2.8 Able to classify reasonably and having concept – OUT2.8
1.9 Having bio – extracts from farm productions – OUT1.9	2.9 Able to decide which is right or wrong – OUT2.9
1.10 Awareness of natural resource and environment and sustainable use – OUT1.10	2.10 Having initiatives and aspirations – OUT2.10
1.11 Indigenous and modern technology use – OUT1.11	2.11 Able to connect and manage "horistic" body of knowledge – OUT2.11
1.12 Mutual help and healthy networking – OUT1.12	2.12 Having leadership ability – OUT2.12
1.13 Income increase, expenditure reduction and saving – OUT1.13	2.13 Being a modern person and able to catch up with technology – OUT2.13
1.14 Awareness of natural resource and environment and sustainable use – OUT1.14	2.14 Being healthy both body and mind – OUT2.14
1.15 Indigenous and modern technology use – OUT1.15	2.15 Having good human relations – OUT2.15
1.16 Mutual help and healthy networking – OUT1.16	2.16 Being independent without doing evil – OUT2.16
1.17 Income increase, expenditure reduction and saving – OUT1.17	2.17 Able to take care of oneself – OUT2.17
	2.18 Being enthusiastic – OUT2.18
	2.19 Able to develop themselves – OUT2.19

Figure 4.2 The Developed Learning Model on Sufficiency Economy Philosophy of Farmers in Phitsanulok, Thailand.

4.3 The Construct Validity on Developed SEP Learning Model of Farmers in Phitsanulok, Thailand by Using the Confirmatory Factors Analysis Model with LISREL Model.

The objectives of the quantitative research design was to construct validate the component of SEP learning model of farmers in Phitsanulok using multiple regression analysis by summing up the score from factors on each component. Then calculate the correlation and analysis the data to examine the fitness of the empirical data with the developed learning model using the confirmatory factor analysis model by interviewing 326 farmers with the questionnaire. The results were as follows.

4.3.1 The Basic Information about Socio – Economic Condition of the Sample Farmers.

The context and background of the sample farmers in investigating the SEP learning model of farmers in Phitsanulok, Thailand could be explained as follows.

1) Sex

The research found that the sample from this research was 53.7 % female and 46.3% male as shown in table 4.3

Table 4.3 The Percentage of Sample Classified by Sex.

Sex	No.	percentage
male	151	46.3
female	175	53.7
Total	**326**	**100**

2) Age

The research found that the oldest age of farmers was between 48-60 years old (43.6%), the second older age was between 34-47 years old, the average age was 51 years old ($\overline{X} = 50.82$ %) and the standard deviation of data was 10.04 (S.D. = 10.04). The youngest farmers were 22 years old and the oldest farmers were 74 years old as shown on table 4.4

Table 4.4 The Percentage of the Sample Classified by Age.

Age (years)	No.	Percentage
22 - 34	15	4.6
34 – 47	106	32.6
48 – 60	140	43.6
61 – 74	63	19.3
Total	**326**	**100**
$\overline{X}$ = 50.82%	Minimum = 22	
S.D. = 10.04	Maximum = 74	

3) The level of education

The research found that the levels of education of most farmers (81.3%) were primary school, 13.2 % of farmers were high school and 3.4 % of farmers were uneducated and 1.2 % of farmers were the diplomas as shown on table 4.5

Table 4.5 The Percentage of Sample Classified by Level of Education.

Level of Education	No.	Percentage
Uneducated	11	3.4
Primary school	265	81.3
High school	43	13.2
Bachelor degree	3	0.9
Other	4	1.2
Total	**326**	**100**

4) Religion

The research found that all samples are Buddhist.

5) Social status

The research found that more than half of farmers (50.3%) were members in the community such as saving groups, farmers group, 43.6 % of farmers were villager and 4.9 % of farmers were village heads. The only 0.3 % was the leader of the group that was the saving group. The data was shown in table 4.6

Table 4.6 The Percentage of the Sample Classified by Social Status.

Social status	No.	Percentage
Village head	16	4.9
Members of District Administration Organization	3	0.9
Leader of group	1	0.3
Members of group	164	50.3
Villager	142	43.6
Total	**326**	**100**

6) The number of household members

The research found that most farmers (57.4%) consisted of 4-6 members, 35.5 % of farmers consisted of 1-3 members. There were only 0.6 % of farmers consisted of more than 10 members. The average number of household members was 4 persons and the standard deviation was 1.62 ($\overline{X}$ = 4.09, S.D. = 1.62) and the data was shown in table 4.7

Table 4.7 The Percentage of Sample Classified by Number of Household Members.

Number of household members (person)	No.	Percentage
1 – 3	115	35.3
4 – 6	187	57.4
7 – 9	22	6.7
From10 up	2	0.6
Total	**326**	**100**
$\overline{X}$ = 4.09	Minimum = 1	
S.D. = 1.62	Maximum = 11	

7) Family labours

The research found that most of family labours (87.7%) consisted of 1-3 agricultural workers, 36 % of family labours consisted of 4-6 agricultural workers. There were only 1.2 % of family labours consisted of more than 7 agricultural workers. The average number of family labours was 2 persons and the standard deviation was 1.09 ($\overline{X}$ = 2.34, S.D. = 1.09) and the data was shown in table 4.8

Table 4.8 The Percentage of Sample Classified by the Number of Family Labours.

Family labours (person)	No.	Percentage
1 – 3	286	87.7
4 – 6	36	11.0
More than 7	4	1.2
Total	**326**	**100**
$\overline{X}$ = 2.34	Minimum = 1	
S.D. = 1.09	Maximum = 8	

8) Agricultural experience.

The research found that 35.9% of farmers had agricultural experience between 17-38 years, 32.2% of farmers had agricultureal experience between 15-26 years, 22.1% of farmers had agricultural experience between 39-50 years and 2.5 % of farmers had agricultural experience between 51-62 years. The average agricultural experience of farmers was 29.46 years and the standard deviation was 11.51 ($\overline{X}$ = 29.46, S.D. = 11.51). The minimum agricultural experience of

farmers was 3 years and the maximum agricultural experience of farmers was 62

years. The data was shown in table 4.9

Table 4.9 The Percentage of Sample Classified by the Agricultural Experience.

Agricultural experience (year)	No.	Percentage
3 – 14	24	7.4
15 - 26	105	32.2
27 - 38	117	35.9
39 - 50	72	22.1
51 – 62	8	2.5
Total	**326**	**100**
$\overline{X}$ = 29.46	Minimum = 3	
S.D. = 11.51	Maximum = 62	

9) Land holding

The research found that 68.1% of farmers had their own land,

24.5% of farmers rent some part of land, 6.7 % of farmers rent all land and only 0.6%

of farmers take possession of land. The data was shown in table 4.10

Table 4.10 The Percentage of Sample Classified by the Owner of Land.

Land holding	No.	Percentage
Own land for all	222	68.1
Rent some part of land	80	24.5
Rent for all	22	6.7
Take possessions of land	2	0.6
Total	**326**	**100**

10) The size of land holding

The research found that the largest size of land holding (43.3%) was less than 20 rai, 35.9 % of farmers owned between 20-40 rai. There were only 0.9 % of farmers owned between 80-100 rai. The average size of land holding was 27 rai and the standard deviation was 21.93 ($\overline{X}$ = 27.27, S.D. = 21.93). The minimum land holding by farmers was 1 rai and the maximum was 133 rai. The data was shown in table 4.11

Table 4.11 The Percentage of Sample Classified by the Number of Land Holding.

The size of land holding (Rai)	No.	Percentage
Not more than 20	141	42.3
More than 20 – 40	117	35.9
More than 40 – 60	45	13.8
More than 60 – 80	15	4.6
More than 80 – 100	3	0.9
From 100 up	5	1.5
Total	**326**	**100**
$\overline{X}$ = 27.47	Minimum = 1	
S.D. = 21.93	Maximum = 133	

11) The farm land

The research found that the largest number of farmers (48.5%) had their farm land less than 20 rai, 33.7 % of farmers had their farm land between 20-40 rai and 12.9 % of farmers had their farm land between 80-100 rai. There was only 0.9 % of the farmer had the agricultural area between 80-100 rai. The minimum farm land was 1 rai and the maximum was 131 rai. The average farm land was 26.15 rai.

By classifying the plant grown in each area, it was found that most farmers planted rice with the average area of 22.31 rai. The minimum area of rice field was 0.5 rai and the maximum was 109 rai. Secondly, the area was used to grow dry crops such as corn, sugar cane and cassava. The average area of growing dry crops was 18.91 rai. The minimum area of growing dry crops was 0.25 rai and the maximum of 30 rai. Thirdly, the area was used to grow fruit trees such as mango, Marian plum, santol, Longan, westerner, papaya and banana. The average area of growing fruit trees was 4.82 rai. The minimum area of growing dry crops was 0.25 rai and the maximum of 55 rai. Only 2 farmers were growing flowers. The average area of growing flower was 0.62 rai. The minimum area of growing dry crops was 0.25 rai and the maximum of 1 rai. The data was shown on table 4.12

Table 4.12 The Percentage of Sample Classified by Farm Land.

Farm land (Rai)	No.	Percentage
Not more than 20	158	48.5
More than 20 – 40	110	33.7
More than 40 – 60	42	12.9
More than 60 – 80	8	2.5
More than 80 – 100	3	0.9
More than 100	5	1.5
Total	**326**	**100**

$\overline{X} = 26.15$ Minimum = 1

S.D. = 21.42   Maximum = 131

Classifying the farm land	No. (farmers)	Size of farm land (Rai)	Statistic value	
Fruit Trees	66	318	$\overline{X} = 4.82$ S.D. = 9.77	Min = 0.25 Max = 55
Vegetable	60	139.75	$\overline{X} = 2.33$ S.D. = 3.87	Min = 0.25 Max = 30
Dry Crops	100	1,891	$\overline{X} = 18.91$ S.D. = 17.62	Min = 0.25 Max = 30
Flowers	2	1.25	$\overline{X} = 0.62$ S.D. = 0.53	Min = 0.25 Max = 1
Livestocks	35	25.25	$\overline{X} = 0.72$ S.D. = 0.43	Min = 0.25 Max = 2
Fishery	76	83.5	$\overline{X} = 1.09$ S.D. = 1.24	Min = 0.25 Max = 10
Rice	269	6,002.11	$\overline{X} = 22.31$ S.D. = 17.92	Min = 0.5 Max = 109

12) Total income

The research found that 42 % of farmer's annual income was less than 100,000 baht, 35.6 % of farmers' annual income was between 100,001-200,000 baht and 14.1 % of farmers' annual income was between 200,001-300,000 baht. There was only 1.2 % of farmers' annual income was from 500,001 baht up. The average farmer's annual income was 159,081 baht. The minimum farmer's annual income was 5,000 baht and the maximum was 1,260,000 baht. The data was shown in table 4.13

Table 4.13 The Percentage of Sample Classified by Income.

Income (Bath)	No.	Percentage
Not more than 100,000	137	42.0
100,001 – 200,000	116	35.6
200,001 – 300,000	46	14.1
300,001 – 400,000	16	4.9
400,001 – 500,000	7	2.1
From 500,001 up	4	1.2
Total	**326**	**100**
$\overline{X}$ = 159,081.29	Minimum = 5,000	
S.D. = 129,414.48	Maximum = 1,260,000	

13) Agricultural income

The research found that 48.5 % of the farmers' annual agricultural income was not more than 100,000 baht, 35.0 % of farmers' annual agricultural income was between 100,001-200,000 baht and 12.6 % of farmers' annual agricultural income was between 200,001-300,000 baht. There was only 0.6 % of farmer's annual agricultural income was from 500,001 up. The average farmers'

annual agricultural income was 138,238 baht. The minimum farmers' annual agricultural income was 2,000 baht and the maximum was 1,060,000 baht. The data was shown in table 4.14

Table 4.14 The Percentage of Sample Classified by Agricultural Income.

Agricultural income (Baht)	No.	Percentage
Not more than 100,000	158	48.5
100,001 – 200,000	114	35.0
200,001 – 300,000	41	12.6
300,001 – 400,000	7	2.1
400,001 – 500,000	2	0.6
From 500,001 up	4	1.2
Total	**326**	**100**
$\overline{X}$ = 138,237.89	Minimum = 2,000	
S.D. = 115,706.90	Maximum = 1,060,000	

14) Loan

The research found that most farmers (79.4%) used to loan money and the rest (20.6%) never loan money. For the farmers who used to loan money (259 persons), only 0.77% was free of debt and the rest of 99.33 % still in debt. There were 60.62% of farmers still had debt between 1-100,00 baht and 23.17 % of farmers still had debt between 100,001-200,000 baht. The average of farmers' debt was 106,774 baht. The maximum debt of farmers was 1,000,000 baht and the minimum was 50,000 baht. The data was shown in table 4.15

Table 4.15 The Percentage of Sample Classified by Loan.

Loan	No.	Percentage
Never	67	20.6
Used to loan	259	79.4
Total	**326**	**100**
Current debt (Baht)	**No.**	**Percentage**
Free of debt	2	0.77
1 - 100,000	157	60.62
100,001 – 200,000	60	23.17
200,001 – 300,000	13	5.02
300,001 – 400,000	10	3.86
400,001 – 500,000	12	4.63
From 500,001 up	5	1.93
Total	**259**	**100**
$\overline{X}$ = 106,774.54	Minimum = 50,000	
S.D. = 139,177.88	Maximum = 1,000,000	

15) Water resource

The research found that 57.1% of farmers used rain water as water resource for agriculture, 23.0% of farmers used irrigation water, 16.3% used ground water and only 4.9 % used water from river and canal. The data was shown in table 4.16

Table 4.16 The Percentage of Sample Classified by Water Resource for Agriculture.

Water resources	No.	Percentage
Irrigation water	75	23.0
Rain water	186	57.1
Ground water	53	16.3
The river and canal	16	4.9

The confirmatory factor analysis result of 5 components in SEP learning model was as follows.

4.3.2 The Multiple Regression Analysis of Component on the Context and Background of Farmers with the SEP Learning Output of Farmers.

The components on the context and background of farmers that effected the SEP learning output were as follows.

    1. Basic information about socio – economic condition of farmers

        1.1   Sex

        1.2   Age

        1.3   Education

        1.4   Religion

        1.5   Social status

        1.6   Household members

        1.7   Family labour

        1.8   Agricultural experiences

        1.9   Land holding

        1.10 Farm area

1.11 Income

1.12 Loan

1.13 Water resources

2. Farmers' attitude

The data analysis in this step was to examine that components were correlated to SEP learning output. Using the stepwise multiple regression analysis analyzed the effected of component on SEP learning output. The analysis result was in table 4.17

Table 4.17 The Results of Stepwise Multiple Regression Analysis of the Context and Background of Farmers that was Correlated to the SEP Learning Output.

Context and Background of Farmers	Beta	t	p-value
Farmers attitude	0.434	8.671	0.000
R =0.434	R^2 =0.188	R^2_{adj} =0.186	$F_{(1,324)}$=75.179

To examine of stepwise multiple regression analysis of the context and background of farmers correlated to the SEP learning output found that only one independent variable that was the attitude of farmers that correlated with dependent variable. This analysis indicated that the attitude of farmers was effected by the SEP learning output of farmers and the factor loading was 0.434 (t = 8.671, p= .000). The variation of learning output of farmers was 18.8 percent and then, the attitude of farmers was analyzed on the confirmatory factor analysis and construct validity of the component of the context and background of farmers in the farmers' attitude.

*4.3.3 The Confirmatory Factors Analysis on the Component of Farmers'
Attitude.*

The analysis of data in this step was the construct validity of the model in the
component of the context and background of farmers in the aspect of attitude that was
investigated and developed. By using the confirmatory factor analysis to construct
validate of model to examine the fitness of model and empirical data. The result of the
confirmatory factor analysis of SEP learning model of farmers in the component of
farmers' attitude was shown on table 4.18

Table 4.18 The Results of the Confirmatory Factor Analysis of Component in
Farmers' Attitude.

Farmers' attitude - ATTI	Factor loading (b)	R^2	t - value
1. Economic crisis and living problem – ATTI1	0.27**	0.07	4.14
2. Awareness of health – ATTI2	0.41**	0.17	6.22
3. Awareness of drugs and vices effected – ATTI3	0.39**	0.15	6.06
4. Existing agricultural occupation – ATTI4	0.34**	0.12	5.31
5. Knowledge and understanding in agricultural on SEP – ATTI5	0.47**	0.22	7.37
6. Good working attitude – ATTI6	0.51**	0.26	7.75
7. Follow up SEP through media – ATTI7	0.28**	0.08	3.91
8. Regular training and study tour – ATTI8	0.59**	0.35	8.94
9. Religion practices – ATTI9	0.65**	0.43	10.57
Chi-square = 28.23	GFI = 0.98		
df = 19	AGFI = 0.96		
p = 0.079	RMR = 0.02		

Note * means p<0.05, ** means p<0.01

The results of confirmatory factor analysis of the appropriateness in the component of farmers' attitude from table 4.18 found that the model was fitted to the empirical data with the chi square value of 28.23 and the probability of the event to occur if the null hypothesis was true equal to 0.079 (p=0.079) at the degree of freedom was 19 (df = 19). The goodness of fit indexes (GFI) was 0.98, the adjusted goodness of fit indexes (AGFI) was 0.96 and the root mean square residual (RMR) was 0.02.

When considering the factor loading of attitude component of farmers, it was found that the factor loading of the component was positive and the value was between 0.27 - 0.65, the level of statistical significance was 0.05 in every components that indicated that these components were the important factors of farmers' attitude. The variation of correlation with the farmers'attitude component was between 7% - 43%. The highest factor loading of the component were the religion practices with the value of 0.65, the next component was regular training and study tour and good working attitude with the value of 0.59 and 0.51 respectively as shown in figure 4.3
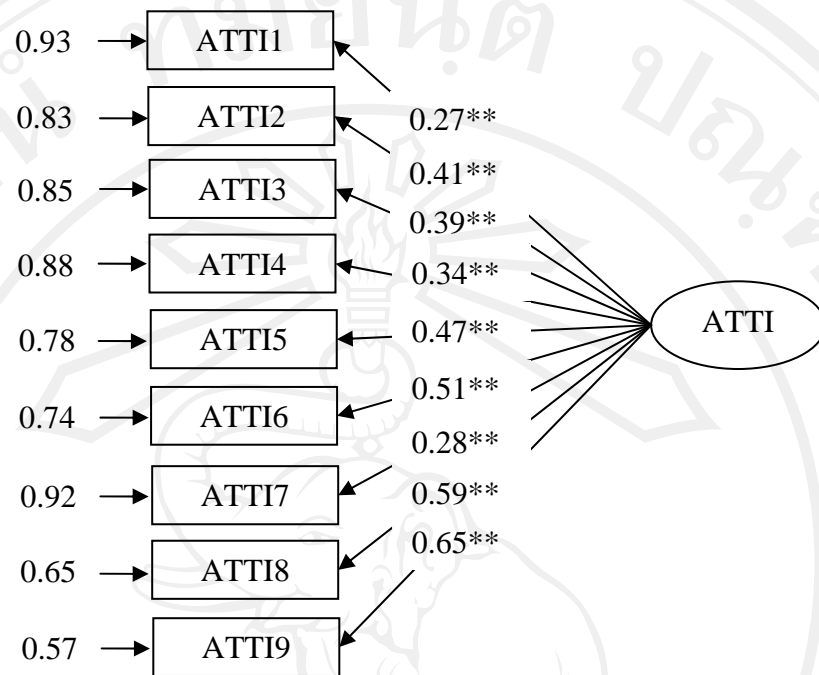
Chi – square = 28.23, df = 19, P = 0.079, RMSEM = 0.039

Figure 4.3 The Confirmatory Factor Analysis on the Component of Farmers' Attitude.

The data in figure 4.3 indicated that research model (the investigated and developed model on the component of farmers' attitude) was construct validity that fitted with the empirical data (the data from farmers)

4.3.4   The Confirmatory Factors Analysis on the Component of SEP Content.

The data analysis in this step was the construct validity of the investigated and developed model on the component of SEP content of farmers by examines the fitness with the empirical data.

The component of the SEP content consisted of sub-component as follows.

      1.   Moderation means appropriately which is not too much and not too less in the dimension of action such as the production and consumption in moderate level that brings the balanced and prompt against the change – CSEP 1

      2.   Reasonableness means the decision about the level of moderation that should be reasonable by carefully considering the cause factor and the relevant data along with the expected results which could occur from those actions. – CSEP 2

      3.   Self – immunity means the prompt preparation for the consequence and change in any aspect which would be occurred by considering the possibility of any situation that could be occurred in the sooner or later future – CSEP 3

      4.   Knowledge conditions means overall technical knowledge to be applied in various opportunities thoroughly and carefully – CSEP 4

      5.   Ethic conditions means knowledge together with ethicity with the awareness of honesty, patience, intelligence, etc – CSEP 5

From the research model on the component of SEP content, the confirmatory factor analysis was used to contruct validate of model to examine the fitness of model and empirical data. The result of the confirmatory factor analysis of SEP learning model of farmers in the component of SEP content was shown on table 4.19

**Table 4.19** The Results on Confirmatory Factor Analysis of the SEP Content.

Content of SEP - CSEP	Factor loading (b)	R^2	t - value
1. Moderation – CSEP1	0.58**	0.34	6.93
2. Reasonableness – CSEP2	0.78**	0.61	8.05
3. Self – immunity – CSEP3	0.17*	0.03	2.12
4. Knowledge conditions – CSEP4	0.62**	0.38	7.37
5. Ethic conditions – CSEP5	0.37**	0.13	5.47
Chi-square = 4.54	GFI = 0.99		
df = 2	AGFI = 0.96		
p = 0.1032	RMR = 0.17		

Note * means p<0.05, ** means p<0.01

The results of confirmatory factor analysis of the appropriateness in the component of SEP content from table 4.19 found that the model was fitted to the empirical data with the chi square value of 4.54 and the probability of the event occurred if the null hypothesis was true equal to 0.1032 (p = 0.1032) at the degree of freedom was 2 (df = 2). The goodness of fit indexes (GFI) was 0.99, the adjusted goodness of fit indexes (AGFI) was 0.96 and the root mean square residual (RMR) was 0.17.

When considering the factor loading on component of SEP content, it was found that the factor loading of the component was positive and the value was between 0.17-0.78, the level of statistical significance was 0.05 in every value that indicated that these components were the important factor of SEP content. The variation of correlation with the attitude SEP content component was 61%, 38%, 34%, 13% and 3% respectively. The highest factor loading of the component was the reasonableness with the value of 0.78, and the next component was the knowledge

condition, moderation, ethic condition and self immunity with the value of 0.62, 0.58,

0.37 and 0.17 respectively as shown in figure 4.4
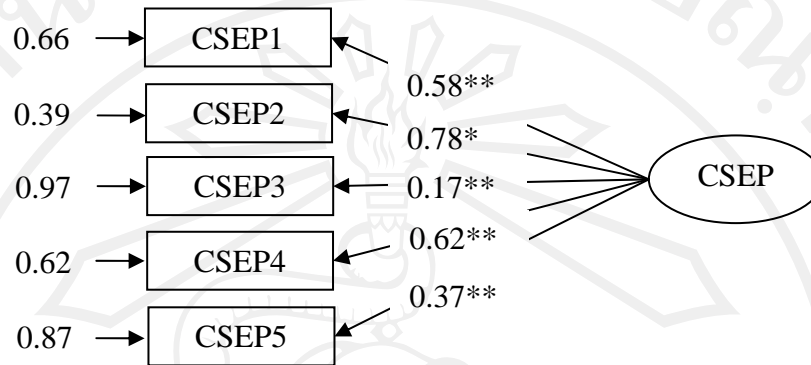
Chi – square = 4.54, df = 2, P = 0.103, RMSEM = 0.063

Figure 4.4 The Confirmatory Factor Analysis on the Component of SEP Content of
Farmers.

The data in figure 4.4 indicated that research model (the investigated and
developed model on the component of SEP content) was construct validity that fitted
with the empirical data.

*4.3.5 The Second Order Confirmatory Factors Analysis on SEP Learning
Process of Farmers.*

The data analysis in this step was the construct validity of the investigated and
developed model on the component of SEP learning process of farmers by examining
the fitness with the empirical data. The component of learning process consisted of 2
subcomponents as follows.

1. Learning principle on SEP.

2. Learning guideline management on SEP.

The second orders confirmatory factor analysis could be analyzed the confirmatory factor to examine the construct validate of model on subcomponents in SEP learning process of farmers to examine the fitness of model and empirical data. The result of the second confirmatory factor analysis on SEP learning process was shown on table 4.20

Table 4.20 The Results of Confirmatory Factor Analysis of Component on SEP Learning Process of Farmers.

SEP Learning Process - PROC	Factor loading (b)	R^2	T - value
1. Learning principle on SEP – PROC1	1.00	1.00	8.31
1.1 Importance of concept, experience through various activities – PROC1.1	0.46**	0.22	-
1.2 Reflection of experiences from observation and practices – PROC1.2	0.43**	0.18	6.55
1.3 Concept conclusion – PROC1.3	0.40**	0.16	5.68
1.4 Experimental by practice – PROC1.4	0.31**	0.09	4.66
1.5 Farmers' knowledge derived from searching and research – PROC1.5	0.71**	0.51	7.23
1.6 Bringing knowledge into practices – PROC1.6	0.32**	0.10	4.82
1.7 Exchange of knowledge between extension agents and farmers and among all farmers – PROC1.7	0.35**	0.12	5.11
1.8 Development of continuing knowledge of farmers - PROC1.8	0.21**	0.04	3.33
2. Learning guideline management on SEP of farmers – PROC2	1.00	1.00	9.81
2.1 Set up learning center on SEP– PROC2.1	0.57**	0.33	-

Table 4.20 Continued

SEP Learning Process - PROC	Factor loading (b)	R^2	T - value
2.2 Organize training, field trip and introduce model farmers dealing with SEP – PROC2.2	0.52**	0.27	7.92
2.3 Reflect the experience of model farmers to be introduce SEP to be agricultural practice approach – PROC2.3	0.58**	0.33	7.64
2.4 Encourage the farmers to be self – sufficient through producing everything for consumption to reduce expenses – PROC2.4	0.52**	0.27	6.93
2.5 Stimulate farmers to know themselves by producing family and farm accounts – PROC2.5	0.50**	0.25	6.58
2.6 Arouse the farmers to make understanding on integrated farming in harmony with the environment by learning from learning centers to practice on their farms – PROC2.6	0.63**	0.40	7.85
2.7 Encourage youth farmers to produce farm accounts so as to know their own family problems – PROC2.7	0.29**	0.08	4.54
2.8 Farmers and extension agents should consult one to another on various activities regularly – PROC2.8	0.35**	0.12	5.40
2.9 Exchange knowledge on farm problems among farmers themselves under continuing basis – PROC2.9	0.53**	0.28	7.34

|	
Chi-square = 98.97	GFI = 0.97
df = 81	AGFI = 0.93
p = 0.085	RMR = 0.02

Note * means $p<0.05$, ** means $p<0.01$

The results of confirmatory factor analysis of the appropriateness in the component of SEP learning process from table 4.20 found that the model was fitted to the empirical data with the chi - square value of 98.97 and the probability of the event to occur if the null hypothesis was true equal to 0.085 (p = 0.085) at the degree of freedom was 81 (df = 81). The goodness of fit indexes (GFI) was 0.97, the adjusted goodness of fit indexes (AGFI) was 0.93 and the root mean square residual (RMR) was 0.02.

When considering the factor loading on component of SEP learning process, it was found that the factor loading of the component was positive and the level of statistical significance was 0.01 in every value that indicated that these components were the important factor of SEP learning process. The variation of correlation with the component of learning process was 100%. Moreover the learning principle on SEP and learning guideline management on SEP of farmers had the factor loading value of 1.00 equally.

When considering the factor loading on sub-component of learning principle on SEP, it was found that the factor loading of the component was positive and the value was between 0.21-0.71 with the level of statistical significance was 0.01 in every value that indicated that these components were the important factor of sub-component of learning principle on SEP. The variation of correlation with the sub-component of learning principle on SEP was between 4% - 51%. The highest factor loading of the component was the farmers' knowledge derived from searching and research with the value of 0.71, and the next component was the importance of concept experience through various activities with the value of 0.46.

When considering the factor loading on sub-component of learning guideline management on SEP, it was found that the factor loading of the component was positive and the value was between 0.29-0.63, the level of statistical significance was 0.01 in every value which indicated that these components were the important factor of sub-component of learning guideline management on SEP. The variation of correlation in the sub-component of learning guideline management on SEP was between 8% and 40%. The highest factor loading of the component was aroused the farmers to make understand on integrated farming in harmony with the environment by learning from learning centers to practice on their farms with the value of 0.63. The next component was reflected the experiences of model farmers to be awards of introducing SEP to be agricultural practice approach with the value of 0.58 as shown in figure 4.5
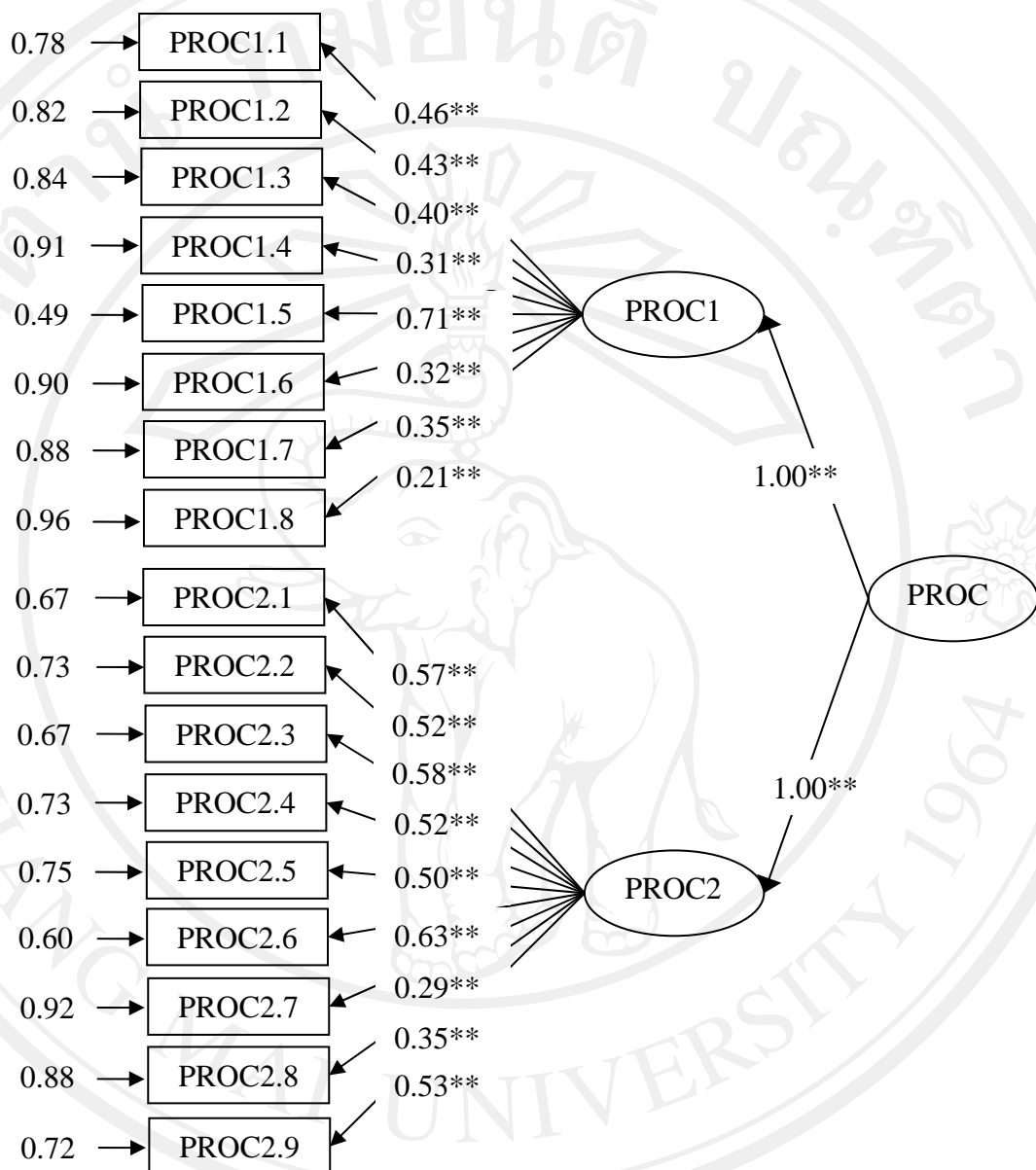
Chi – square = 98.97, df = 81, P = 0.085, RMSEM = 0.026

Figure 4.5 The Second Order Confirmatory Factor Analysis of the Component on
SEP Learning Process of Farmers.

The data in figure 4.5 indicated that research model (the investigated and
developed model on the sub-component of SEP learning process) was construct
validity that fitted with the empirical data

4.3.6 The Confirmatory Factors Analysis on Component Supporting Learning of Farmers.

The data analysis in this step was the construct validity of the investigated and developed model of the component supporting learning of farmers by examining the fitness with the empirical data. The CFA analysis result was in table 4.21

Table 4.21 The Results of Confirmatory Factor Analysis of the Component Supporting Learning of Farmers.

Component Supporting Learning - COMP	Factor loading (b)	R^2	t - value
1. SEP is the speech of the King – COMP1	0.32**	0.10	5.37
2. SEP is the National Socio – Economic Plan of every organization – COMP2	0.64**	0.41	11.23
3. Supporting agents is supporting learning participation with farmers – COMP3	0.73**	0.53	13.26
4. Supporting agents creates "learning networking" on SEP with farmers– COMP4	0.65**	0.42	12.44
5. Extension agents have knowledge and understanding on SEP – COMP5	0.73**	0.54	14.29
6. Extension agents follow up the output of SEP continuously – COMP6	0.78**	0.61	15.86
7. Supporting budget on SEP is being continual from government sector – COMP7	0.52**	0.28	9.69
8. Presentation of SEP from mass communication is regular – COMP8	0.68**	0.47	13.08
Chi-square = 14.96	GFI = 0.99		
df = 10	AGFI = 0.96		
p = 0.16	RMR = 0.12		

Note * means p<0.05, ** means p<0.01

The results of confirmatory factor analysis of the appropriateness in the component supporting learning of farmers from table 4.21 found that the model was fitted to the empirical data with the chi - square value of 14.96 and the probability of the event to occur if the null hypothesis was true equal to 0.16 (p = 0.13) at the degree of freedom was 10 (df = 10). The goodness of fit indexes (GFI) was 0.99, the adjusted goodness of fit indexes (AGFI) was 0.96 and the root mean square residual (RMR) was 0.12.

When considering the factor loading of the component supporting learning of farmers, it was found that the factor loading of the component was positive and the value was between 0.32-0.78, the level of statistical significance was 0.01 in every value that indicated that these components were the important factor of the component supporting learning of farmers. The variation of correlation of component on the component supporting learning of farmers was 61%, 54%, 53%, 47%, 42%, 41%, 28% and 10% respectively. The highest factor loading of the component was the extension agents follow up the output of SEP continuously with the value of 0.78. The next component was supporting agents is supporting learning participation with farmers, extension agents have knowledge and understanding on SEP, presentation of SEP from mass communication is regular, supporting agents creates "learning networking" on SEP with farmers, SEP is the National Socio – Economic Plan of every organization, supporting budget on SEP is being continual from government sector and the SEP are the speech of the King. The value of factor loading was 0.73, 0.68, 0.65, 0.64, 0.52 and 0.32 respectively as shown in figure 4.6
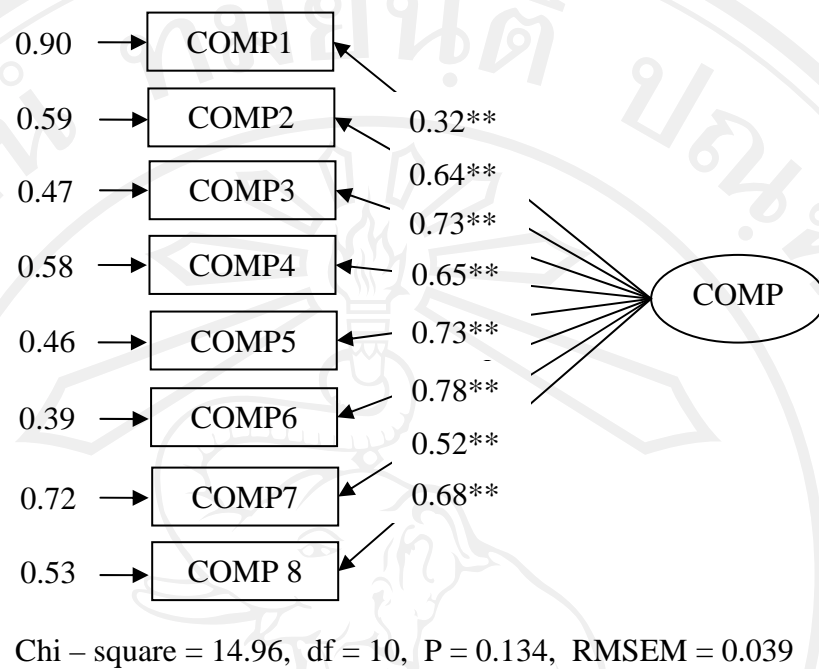
Chi – square = 14.96, df = 10, P = 0.134, RMSEM = 0.039

Figure 4.6 The Confirmatory Factor Analysis of Component on the Component Supporting Learning of Farmers**.**

The data in figure 4.6 indicated that research model (the investigated and developed model of the component on the component supporting SEP learning of farmers) was construct validity that fitted with the empirical data.

4.3.7   The Second Order Confirmatory Factors Analysis on SEP Learning Output of Farmers.

The data analysis in this step was the construct validity of the investigated and developed model of the component on the SEP learning output of farmers by examining the fitness with the empirical data. The components of the SEP learning output consist of 2 sub-component as follows

1) The output of practices

2) The output on attitude

The second order confirmatory factor analysis could be analyzed the confirmatory factors to examine the construct validity of the sub-component model on the SEP learning output of farmers by examining the fitness with the empirical data. The second order CFA analysis output was in table 4.22

Table 4.22 The Results of Confirmatory Factor Analysis of the Component on SEP Learning Output of Farmers.

SEP Learning Output - OUT	Factor loading (b)	R^2	t - value
1. The output of practices – OUT1	0.59**	0.34	5.14
1.1 Having land and water management – OUT1.1	0.56**	0.32	-
1.2 Having full use of family labours – OUT1.2	0.24**	0.06	4.24
1.3 Having family and farm accounts – OUT1.3	0.44**	0.19	7.33
1.4 Having diversified farming – OUT1.4	0.67**	0.46	10.86
1.5 Having production cost reduction – OUT1.5	0.68**	0.46	9.74
1.6 Having medicinal plants – OUT1.6	0.50**	0.25	8.67

Table 4.22 Continued

	SEP Learning Output - OUT	Factor loading (b)	R^2	t - value
1.7	Having backyard garden – OUT1.7	0.49**	0.24	8.44
1.8	Having green manure and bio – fertilizer – OUT1.8	0.73**	0.53	10.71
1.9	Having bio – extracts from farm productions – OUT1.9	0.72**	0.52	11.12
1.10	Awareness of natural resource and environment and sustainable use – OUT1.10	0.63**	0.40	10.11
1.11	Indigenous and modern technology use – OUT1.11	0.35**	0.13	6.39
1.12	Mutual help and healthy networking – OUT1.12	0.47**	0.22	8.07
1.13	Income increase, expenditure reduction and saving – OUT1.13	0.34**	0.12	6.06
2.	The output on attitude – OUT2	0.62**	0.38	5.01
2.1	Having good consciousness – OUT2.1	0.61**	0.37	-
2.2	Having discipline and responsibility – OUT2.2	0.52**	0.27	8.23
2.3	Following regulations of each religion and culture – OUT2.3	0.50**	0.25	7.31
2.4	Being honest – OUT2.4	0.54**	0.29	9.22
2.5	Having passion, mercy and scarified – OUT2.5	0.51**	0.26	8.59
2.6	Having democratic spirit – OUT2.6	0.33**	0.11	5.69
2.7	Able to work with the others happily – OUT2.7	0.62**	0.39	10.08
2.8	Able to classify reasonably and having concept – OUT2.8	0.37**	0.14	7.60
2.9	Able to decide which is right or wrong – OUT2.9	0.23**	0.05	4.40

Table 4.22 Continued

	SEP Learning Output - OUT	Factor loading (b)	R^2	t - value
2.10	Having initiatives and aspirations – OUT2.10	0.56**	0.31	9.04
2.11	Able to connect and manage "holistic" body of knowledge – OUT2.11	0.44**	0.19	7.65
2.12	Having leadership ability – OUT2.12	0.67**	0.45	9.23
2.13	Being a modern person and able to catch up with technology – OUT2.13	0.45**	0.20	7.21
2.14	Being healthy both body and mind – OUT2.14	0.26**	0.07	4.80
2.15	Having good human relations – OUT2.15	0.61**	0.37	10.24
2.16	Being independent without doing evil – OUT2.16	0.39**	0.15	6.72
2.17	Able to take care of oneself – OUT2.17	0.48**	0.23	8.05
2.18	Being enthusiastic – OUT2.18	0.55**	0.30	9.18
2.19	Able to develop themselves – OUT2.19	0.56**	0.31	8.55
Chi-square = 298.03	GFI = 0.95			
df = 261	AGFI = 0.89			
p = 0.057	RMR = 0.065			

Note * means p<0.05, ** means p<0.01

The results of second order confirmatory factor analysis of the appropriateness in the component on SEP learning output of farmers from table 4.22 found that the model was fitted to the empirical data with the chi - square value of 298.03 and the probability of the event to occur if the null hypothesiswas true equal to 0.057 (p = 0.057) at the degree of freedom was 261 (df = 261). The goodness of fit indexes (GFI)

was 0.95, the adjusted goodness of fit indexes (AGFI) was 0.89 and the root mean square residual (RMR) was 0.065.

When considering the factor loading of component on the SEP learning output of farmers in both components, it was found that the factor loading of the component was positive and the value was 0.59 and 0.62 with the level of statistical significance was 0.01 in every value that indicated that these components were the important factor of the SEP learning output. The variation of correlation with the component on SEP Learning Output of farmers was 34% and 38% respectively. The highest factor loading of the component was the SEP learning output of attitude with the value of 0.62. The next component was the SEP learning output of practice with the value of 0.59.

When considering the factor loading of the sub-component of SEP learning output of practice, it was found that the factor loading of the component was positive and the value was between 0.24-0.73 with the level of statistical significance was 0.01 in every value that indicated that these components were the important factor of the sub-component of SEP learning output of practice. The variation of correlation with the SEP learning output of practice components was 53% and 52% respectively. The highest factor loading of the component was having green manure and bio – fertilizer with the value of 0.73. The next component was having bio – extracts from farm productions with the value of 0.72.

When considering the factor loading of the sub-component of SEP learning output of attitude, it was found that the factor loading of the component was positive and the value was between 0.23-0.67 with the level of statistical significance was 0.01

in every value that indicated that these components were the important factor of the sub-component of SEP learning output of attitude. The variation of correlation with the sub-component of SEP learning output of attitude was between 5%-45%. The highest factor loading of the component was having leadership ability with the value of 0.67. The next component was able to work with the others happily with the value of 0.62 as shown in figure 4.7
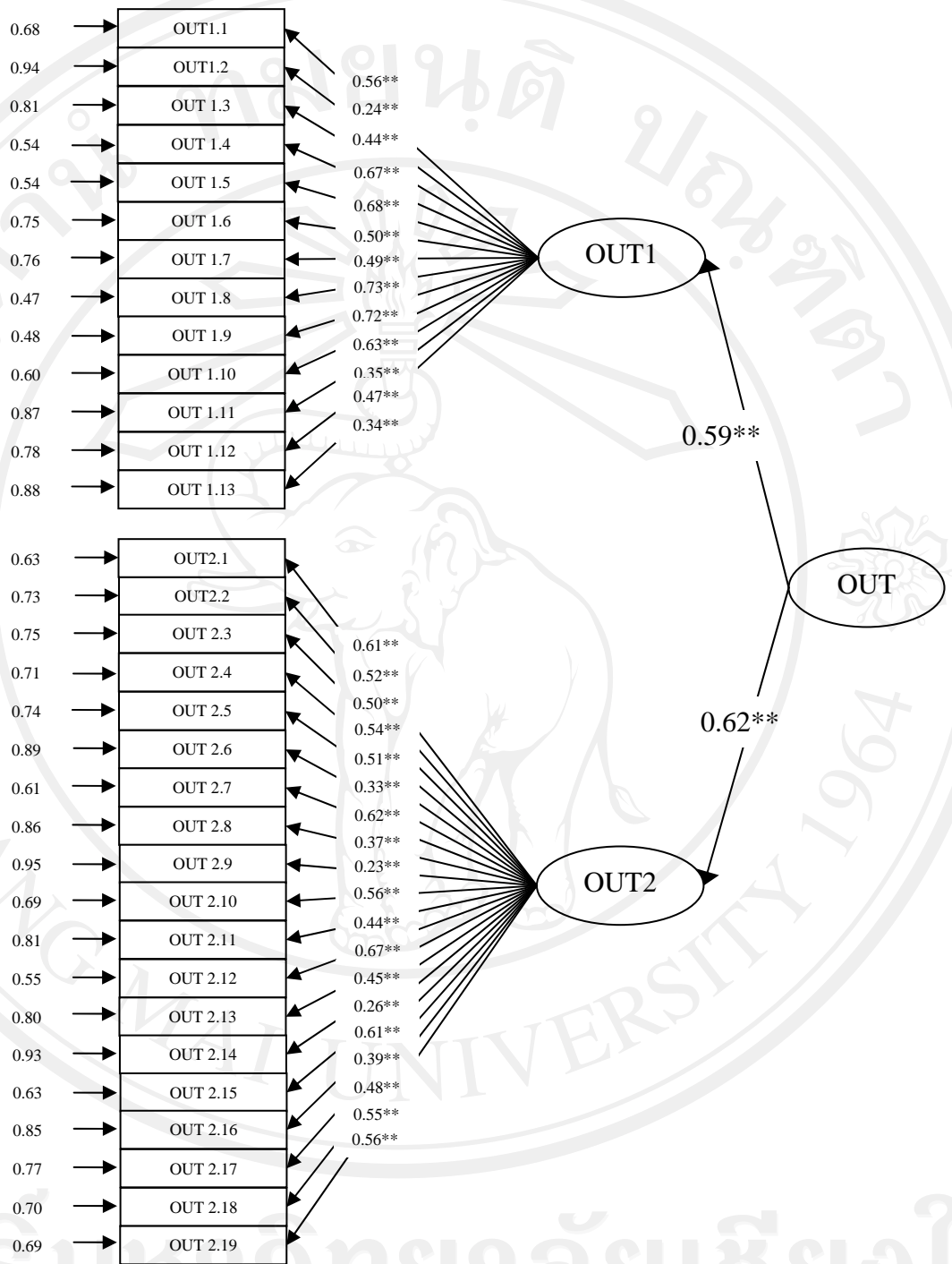
Chi – square = 298.03, df = 261, P = 0.057, RMSEM = 0.021

Figure 4.7 The Second Order Confirmatory Factor Analysis of the Appropriateness in

the Component on SEP Learning Output of Farmers

The data in figure 4.7 indicated that research model (the investigated and developed model of SEP learning output of farmers) was construct validity that fitted with the empirical data

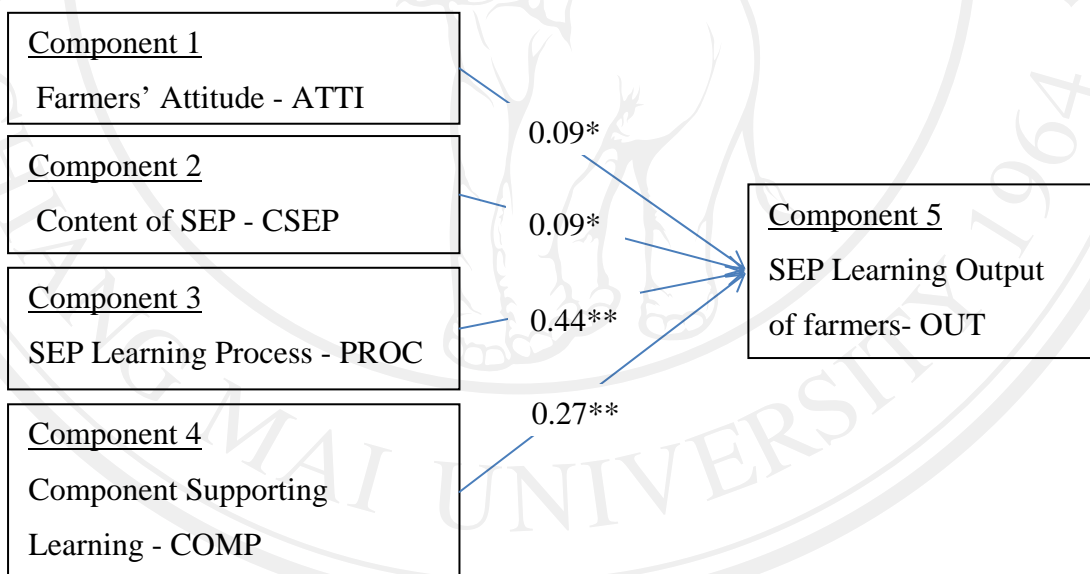   *4.3.8 The Contruct Validity on SEP Learning Model of Farmers in Phitsanulok, Thailand.*

The objective of this research was to construct validate of the SEP learning model of farmers in Phitsanulok, Thailand. The score from each component was sum up and calculated the correlation and analysis to examine the fitness of the learning model with the empirical data by using the confirmatory factor analysis. The result of the SEP learning model of farmers in Phitsanulok, Thailand was shown in table 4.23

Table 4.23 The Results of the Construct Validity on SEP Learning Model of Farmers in Phitsanulok, Thailand.

The component of SEP learning model of farmers	The result of developed model
1. Farmers' Attitude – ATTI	0.09*
2. Content of SEP – CSEP	0.09*
3. SEP Learning Process – PROC	0.44**
4. Component Supporting Learning - COMP	0.27**
Chi–square = 0 GFI = 1	
df = 6 AGFI = 1	
P = 1.00 RMR = 0	

Note * means $p < 0.05$, ** means $p < 0.01$

The data in table 4.23 indicated that the developed SEP learning model was fit with the empirical data ($\chi^2 = 0$, df=6, p=1.00). The developed SEP learning model of farmers was the construct validate with the collected data from the farmer. All 4 components were influenced the SEP learning outputs of farmers with the statistical significant at 0.01. The learning process and the component supporting learning of farmers had the factor loading of 0.44 and 0.27 respectively. The component that influence the outputs of SEP learning with the statistical significant at 0.05 were the farmers' attitude and the SEP content with both component factor loading were equally to 0.09 that was shown in figure 4.8

Chi – square = 0.00, df = 6, P = 1.00, RMSEM = 0.000

Figure 4.8 The Construct Validity on SEP Learning Model of Farmers in Phitsanulok, Thailand.

The data in figure 4.8 indicated the construct validity of research model (the investigated and developed SEP learning model of farmers) that fitted with the empirical data (the collected data from farmers)

4.4 The Recommendation of Farmers on SEP Learning Model of Farmers in Phitsanulok, Thailand.

4.4.1 The Recommendation of Farmers on the Context and Background of Farmers to the SEP Learning of Farmers.

The recommendation was shown in table 4.24

Table 4.24 The Recommendation of Farmer in the Context and Background of Farmer to the SEP Learning of Farmers.

Recommendations	No.* (farmer)
1. Past experience and value of farmers influenced the SEP application in production such as religion, awareness, consideration of oneself and other	9
2. The positive attitude in learning of farmers were patience, diligence, dedicated for working, seeking knowledge and use intelligence carefully thinking	3

Note *from the sample size of 326 farmers

140

4.4.2   The Recommendation of Farmers on the SEP Content to Farmers'

Learning.

The recommendation was shown in table 4.25

Table 4.25 The Recommendation of Farmer on SEP Content to Farmers' Learning.

Recommendations	No.* (farmer)
1. The content of SEP that disseminated to farmers should correlate to the value and experience and the need of farmers.	2
2. the content of SEP was difficult to understand but if the learning media was used in the form of activity, the content of SEP would be more easy to understand	1

Note *from the sample size of 326 farmers

4.4.3 The Recommendation of Farmers on SEP Learning Process of Farmers.

The recommendation was shown in table 4.26

Table 4.26 The Recommendation of Farmers on SEP Learning Process of Farmers.

Recommendations	No.* (farmer)
1. The extension process of SEP of farmers should put emphasis mainly on self reliance because it was an important basis of SEP by using the existing resources to the best beneficial, trial and searching for self-suitable activity	3
2. The SEP training should put emphasis on the understanding of agriculture activity for farmers by putting emphasis on activity to help farmers in understanding SEP such as bio – fertilizer and wood vinegar	2
3. The SEP learning center should locate in every sub-districts to be the center of activity in exchanging experience between farmers. The successful case farmers in each location should set up a learning center and act as a presenter to disseminate to other farmers.	6
4. There should be a model school to develop the learning process to farmers' children in order to be a part of the dissemination process according to SEP. The model farmer was a teacher to transfer experience directly to children.	2

Note *from the sample size of 326 farmers

4.4.4 The Recommendation of Farmers on Component Supporting Learning in SEP Learning of Farmers.

The recommendation was shown in table 4.27

Table 4.27 The Recommendation of Farmers in Component Supporting Learning in SEP of Farmers.

Recommendation	No.* (farmer)
1. The SEP should include in the nation economic and social development plan to be as a policy for every sector in driving SEP to farmers continuously.	4
2. The institute must clearly understand in SEP content because it was essential to develop the correct SEP learning process to farmers.	3

Note *from the sample size of 326 farmers

4.4.5 The Recommendation of Farmers on the SEP Learning Output of

Farmers.

The recommendation was shown in table 4.28

Table 4.28 The Recommendation of Farmers on the SEP Learning Output of Farmers.

Recommendation	No.* (farmer)
1. Farmers who apply SEP should produce anything they need for living in order to reduce expense. The over production would give to neighbor and sell for extra income. The agriculture would be diversifying in area. Using the benefit of local material. Learning about resources conservation and environment. The production capacities on their performance by analyze of one capability and known oneself.	5
2. Farmers who implemented SEP should have positive attitude in living to be a good man and happy by gradually change the method of production, with strong mind, smiling, generosity and helpfulness.	5

Note *from the sample size of 326 farmers