Senior Research

Topic: Education Attainment of Rubber Plantation and Future Prospects for the Rubber Cultivation : A case study of Rubber Farmers in Nakornsrithammarat,Thailand.

Name: Thanyarat Koomkanab

ID: 554 58642 29

Advisor: Prof. Jessica Vechbanyongratana, Ph.D

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(Assoc.Prof.Sothitorn Mallikamas, Ph.D.)

Chairman

Date of Approval: _____

Abstract

The purpose of the research is to examine what is the main motivation that keep the rubber farmer still planting the rubber tree; even though, the price has been dropped significantly for the past 5 years and the government doesn't guarantee that the price going to increase anytime soon. As well as does the Education Attainment of the farmers play a big role in decision-making toward the rubber cultivation or not.

The quantitative method is used in the study. This study is paper-and-pencil based survey research with random sample size of 270 with one condition, the respondents need to owned the crop of a rubber farm not just an employee of the rubber tree owner. Data are collected using questionnaire. The descriptive approach and statistics used in the data analysis comprised of frequency, percentage, mean, standard deviation and p-value to to test the statistical relationship.

As results, the Education Attainment of the farmers does play a big-role toward a decision-making of future prospects in rubber farming business. The farmers with Lower Education tend to rely on and stick with the rubber cultivation both in short-run and long-run. Unlike the farmers with Higher Education that are more flexible, they more likely to stay in the business just for a short period of time which lead to when their rubber tree won't reproduce anymore, they willingly to crop something else instead. And the number one reason that make the rubber farmers choose to planting the rubber tree still is because it's a family business that they pass through generation to generation.

Acknowledgement

The author would like to express sincere thanks and appreciation to Professor Jessica Vechbanyongratana, Ph.D. for her constant assistance and guidance throughout this research paper. This paper would not have been accomplished without her helpful suggestion, insightful comment, kindness, times, and support. Any remaining shortcomings and errors remain the author's sole responsibility.

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1.Introduction

1.1 Overview of Thai Natural Rubber Industry and Cultivation.

Rubber was introduced in Thailand at the early twentieth century and has spread subsequently especially in the South part of Thailand which they found that the environment and the fertility is a best suit for the plant. Since 1991, Thailand has been the top natural rubber producer and exporter, supplying about one-third of the total world production (IRSG,2015). According to trading report of Ministry of Commerce, the rubber is one of the top ten exporting products of Thailand in 2015 as well as one of the most important agricultural commodities for the South of Thailand. Around 1990's, the government has launched many projects geared toward increasing the number of the rubber plantations. Which the ultimate goal was to solve the problem of poverty in Thailand especially in the Northeast where the poverty rate highest. However, a price trend of the natural rubber has been dropped significantly in the past five years.

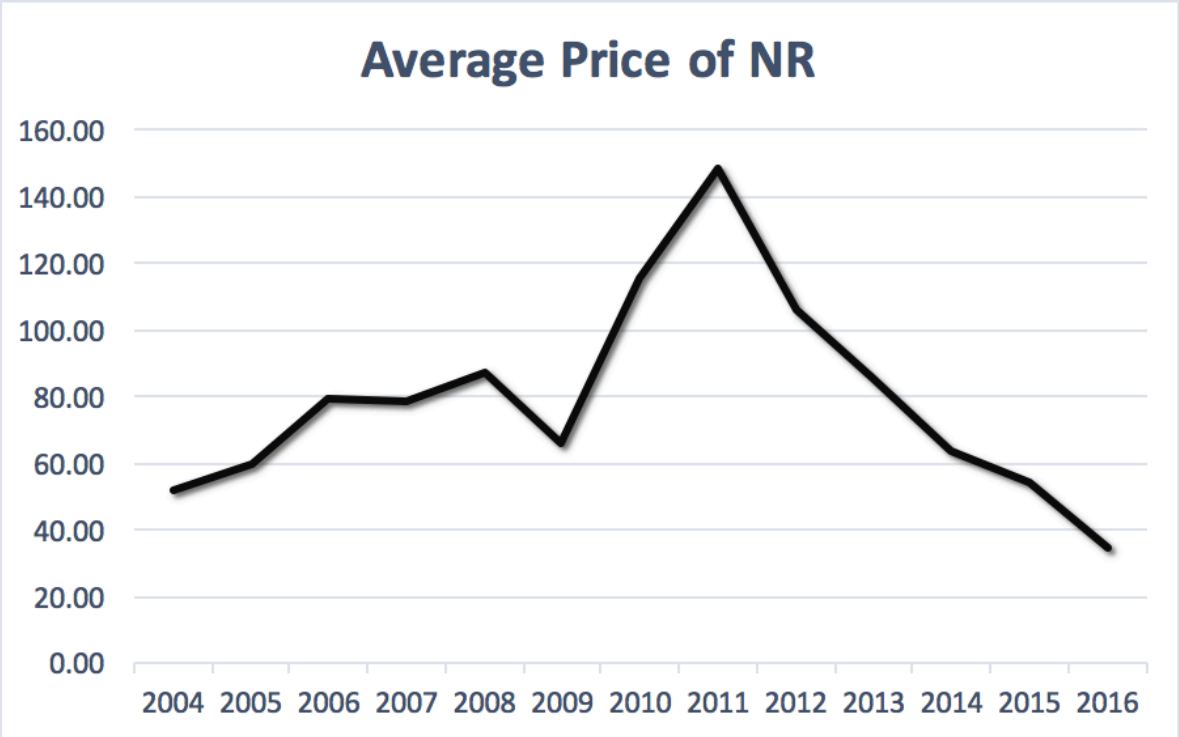

Figure1: the average price of the natural rubber (in Thai Baht),(the Thai Rubber Association ,2016)

The trend of the price used to increase over the time. The price peaked at 150 Baht in average in 2011 then the price has decrease significantly in the next five consecutive years. The reasons behind the dramatic price dropped in the past half-decade is that first, the world and Chinese economics has been slow down. Since the country that consume the natural rubber the most are China, USA, Japan, and Europe in subsequently. Secondly, the natural rubber stock in Thailand as well as China is still in the high level. Note that China is the number one importer of natural rubber who is the based of tire-production industry. This lead to an oversupply of the rubber where the world demand of it increase not as much as the supply do (BOT,2015). Although the price dropped create a lost for the rubber farmers, the majority of the farmers tend to still continuously do a rubber cultivation especially in the South judging by the statistics number of the natural rubber production and tapping area(Rai) from the Thai Rubber Association (2016).

1.2 Objective of the Study

The purpose of the research is to examine what is the main reason that keep the owner of rubber cultivation choose to continue do a rubber farming. As well as the level of education attainment, does it play a big role to the farmers to have a different decision-making toward whether in the future do they going to keep planting a rubber tree or not and what is the main reason behind it. Hence, in the past five years, the price of natural rubber in the world market has been dropped dramatically as mentioned earlier on the figure 1.

1.3 Hypothesis

The Education Attainment does play an important role for the farmers, the one with the lower education will likely to be in the rubber cultivation still hence the rubber tapping will be the only channel of their income source. Unlike the one with higher education which will be more flexible with their decision since they have more opportunity than the lower education one. As well as in overall, the reasons that make the trend of the natural rubber supplier remaining the same (Office of Agricultural Economics, 2015) is because they have seen their parent doing this since they were young or probably since they were born; therefore, they will be more likely to repeating what they have been grow up with and in this case it will be a “Rubber Plantation”.

1.4 Scope

The scope of this study is to targeted the owner of para rubber crop by using 100% paper-and-pencil survey, the survey distributed from February 19 to 23 in 2016 which in total of 5 days. The survey will be walk door to door to the farmers’ house and at the rubber factory where the farmers sell the rubber at. The survey will take place at 6 different villages in Nakornsrithammarat province, Thailand which is the south of Thailand.

Literature Review

In the natural rubber market, according to Weerathamrongsak et al. (2013) analyze the SWOTs or Strengths, Weaknesses, Opportunities, and Threats of the rubber industry in Thailand. Thailand claim to still have a comparative advantage in rubber producing hence, we have more than 50 years of experience in rubber farming. It has therefore accumulated a much deeper knowledge base on compared to newcomers like Vietnam. However, Poramacom (2002) found that Thailand has less comparative advantage than the country like Indonesia in natural rubber export to the U.S. market by using the comparison in standard growth effect, market effect and comparative effect of the export to the country like Thailand and Indonesia. Therefore, it implies that even though Thailand is the number one natural rubber exporter of the world, Thailand faced a high competitive market especially in a country in the Southeast Asia that planting rubber trees as well. In term of the current and future trend of the rubber price, Weerathamrongsak et al. (2013) claim that the trend of demand still going to increase because of China's automobile industry who is a main driver for increasing world rubber consumption tend to grow significantly over time. Both Weerathamrongsak et al. (2013) and Suwanakul et al. (1987) found the positive relationship between a world crude oil price and a world natural rubber price. Means that by rising oil prices will persuade industries to switch from using synthetic rubber to natural rubber.

Since there are many competitors in the natural rubber supply market, Thailand industry tend to continues to suffer from a number of weaknesses and threats. Especially in a labor cost wise, compare with other global rubber export competitor countries such as Vietnam and India; Thailand's labor cost is much higher which lead to the higher in cost of producing in rubber process. As well as the industry appears to suffer from chronic shortages of both skilled and unskilled labor (Weerathamrongsak et al. 2013). Another weakness that Weerathamrongsak et al. (2013) point out is that the country has less developed rubber products industry and the rate of technology adoption still low especially for small holder rubber-base farmers. Somboonsuke et al. (2001) suggest that the rubber farmers should adjust their attitudes toward their traditional ways of farming and doing business and try to adopt a new and more efficient technology to do their farming. According to Somboonsuke (2001), the farmers should not only do an only rubber-monoculture farming system, they should be considered changing to more profitable rubber-intercropping and rubber-fruit systems where they can enjoy more profit if do so. However, this new technology adaptation and the new

way of cropping strategy are required some education. In accordance to Lockheed et al.(1980), found the correlation between the effects of education and the modernizing agricultural. However, Nguyen (1997) consider that the education does not play a big role in the productivity gain or technology adaptation whatsoever in the country like China. In China, the education become less important because the farmers think that the technology used in farming will eventually have some practical demonstration in someway such as by word of mouth. Therefore, in China they do not need education for the farmers to help progress in new innovation or technology adaptation. As for Thailand itself; According to Weerathamrongsak et al. (2013) even there are many weaknesses and uncertainty in the rubber market for Thailand listed above, what is certain is that rubber will remain an important commodity in the world. Since Thailand is an important world supplier of this commodity, so with a positive attitude and willingness to work to adapt, the rubber industry can remain an economic strength especially in the southern Thailand.

Thai government has launched many projects geared toward increasing the number of rubber plantation (Kroeksakul et al. 2011) and (Kanda et al. 2016) which the project was target especially in Northeast Thailand (Fox & Castella 2013). Since the farmers who growing para rubber in particular tend to have more income than other agricultural product such as rice cultivation hence, in the past thirty years, the price of rice remained relatively low (Kanda et al. 2016). According to Kroeksakul (2011). and Manivong (2008). found that para rubber is of high value to farmers because its high world demand- many products can made from rubber such as in the automobile industry, every car needed the tire which made from the rubber. Furthermore, para rubber has a positive affected on the livelihoods of farmers, people called owner of para rubber cultivation a “rich man” in Northeast of Thailand since they earn more money than other farming which lead to improving their quality of life. In other word, natural rubber can be considered as a commodity that can help farmers get out of the poverty or have a higher income in comparison to other plantation.

3. Method and Procedures

3.1 Data collection

This study was conducted in 2016. To answer the research question, this study conducts survey data by the questionnaire. The questionnaires were distributed to the 270 representative small holding rubber-based farms with one condition that they have to be the owner of a rubber farm not just an employee of that farm. The representatives were selected by purposive sampling from 6 communities in Nakornsrithammarat province, Southern Thailand which is Nawan, Khlong-Hga, Jan-Dee, Hna-Hmen, Khui-Hnuer, Nava, and Tai-Hmueng; this is because more than 50 percent of the population in those villages plant a para rubber tree. The paper-and-pencil questionnaire have been distributed door-by-door as well as at the private factories where normally the rubber farmers will come and sell the latex. Within the process, a bag of fruits has been given for each household of the farmers whom finished the questionnaire as a return. As well as during the survey, there were some in-depth interviews with 3 random farmers about the policy that the government launched for the para-rubber farmers and how they feel about it. The surveys took about 5 days since February 19 to 23,2016. The questions consist of frequency analysis to identify the demographic characteristics of respondents, farmers' behavior toward the rubber plantation as well as their future prospect categorize by the level of education attainment and what is the main factor that keep them still in the rubber plantation business.

3.2 Analyzing Data

After compiling the data from the questionnaire, the result will be categorized into two main groups of respondents. First one will be the one with "Lower Education" Attainment which occurred the farmers with 1) below Junior High School 2) Junior High School 3) High School and 4) High Vocational Certificate Level and for the next category will be the farmers with "Higher Education" attainment which included undergraduate and higher than undergraduate degree farmers. This is because we want to see whether the Education Attainment does play a big role for the farmers decision-making or not as well as their prospects toward the rubber cultivation. Start up with the very first segment of the questionnaire, it will be about the Demographic Characteristics of the Respondents in each

group and then will be about the dependent level toward the cultivation as well as the para tree characteristics. And for those questionnaire that mentioned above, it will be presented in term of frequency and the percentage to make it understandable when compare the differences. As well as in form of graphical analysis like charts, pie charts and tables will be described the result to make it easier to understand. Last but not least, for the last part of the questionnaire segment, which is about the long-term prospects of the farmers toward the rubber plantation and the factors that make the rubber farmers still keep planting the rubber tree though the price has been dropped about 5 times for the past 5 years. The respondents need to give their opinion and idea throughout the 5 level of agreement as seen from table1, Likert Scale.

Agreement Level	**Score**
Strongly Agree	5
Agree	4
Moderate	3
Less Agree	2
Least Agree	1

Table 1: Likert Scale

And each level has a different score as seen from the table above (Table 1), whereas the one with the highest score is the "Strongly Agee" which weight 5 score and "Least Agree" is the one with the score of 1 which is the least value that we can get. Therefore, the weight scale for this segment will be a range from 1(minimum) up to 5(maximum). After we got the result, the statistics used in the data analysis comprised of mean, standard deviation, t-value and p-value to check the significant value in order to test the preference and statistical relationship between two data set namely the Lower Education Attainment and the Higher Education Attainment Respondents.

4. Result

In Accordance to the survey result, one of the question about the farmers' education attainment has been purposely separate into two big of a group among the 270 respondents.

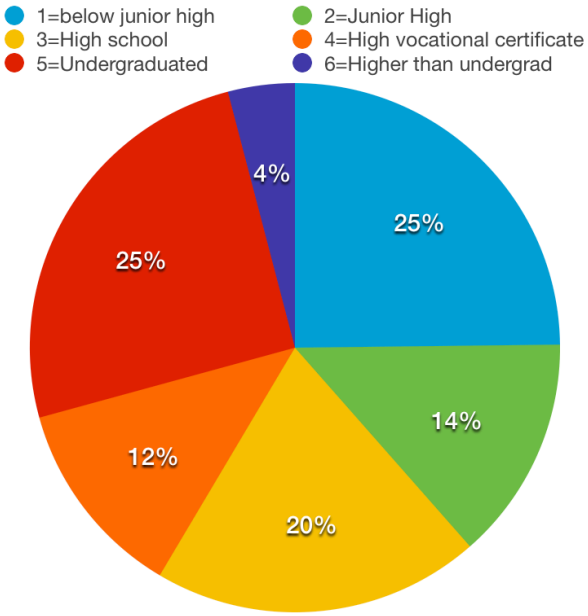

Figure 2: the education attainment of the rubber farmers.

As seen from the pie chart above (*figure 2: the education attainment of the rubber farmers),* the farmers with below junior high school level (blue color) or lower than 7th grade and the one with undergraduate degree (red color) have the same number of share which is 25 percent each or around 67 out of 270 representatives. Therefore, the result will be categorized into two main group of respondents. First one will be the one with "Lower Education" attainment which occurred the farmers with 1) below junior high school 2) Junior High School 3) High School and 4) High vocational certificate level and for the next category will be the farmers with "Higher Education" attainment which included undergrad and higher than undergraduate degrees.

Education Attainment	# of population		Total
Lower Education	Male	107	191
	Female	84	
Higher Education	Male	37	79
	Female	42	

table 2: the number of population with Lower and Higher Education Attainment

After grouping the farmers into 2 groups which is the Lower and Higher Education Attainment, the number of representatives in each group are 1) the Lower Education Attainment (equal or lower than the High vocational certificate level) are in total of 191 farmers which 107 out of 191 are men and the rest or 84 people are women 2) the Higher Education Attainment which equal or higher than the undergraduate degree, the 37 out of 79 people are men and 42 out of 79 are women (*table 2: the number of population with Lower and Higher Education Attainment)*.

Demographic characteristics of these two groups are classified into three characteristics, which are age, status, and number of sibling they have by stating frequency and percentage of the respondents on each group in each characteristic.

	Education Attainment	Characteristic	Frequency	Percentage
Age	Lower Education	Below 20 years old	8	4%
		20-30 years old	25	25%
		31-40 years old	43	43%
		41-50 years old	50	50%
		more than 50 years old	65	65%
	Higher Education	Below 20 years old	1	1%
		20-30 years old	18	23%
		31-40 years old	22	28%
		41-50 years old	17	21%
		more than 50 years old	21	27%

Status	Lower Education	Single	25	13%
		Married	144	75%
		Separate	22	12%
	Higher Education	Single	15	15%
		Married	50	50%
		Separate	14	18%
# of sibling	Lower Education	0	8	4%
		1-2 people	47	47%
		3-4 people	62	62%
		more than 5	74	74%
	Higher Education	0	1	1%
		1-2 people	30	38%
		3-4 people	32	32%
		more than 5	16	16%

table3: A Demographic Characteristics of Respondents in each group of Education Attainment.

According to table3, the results of 270 respondents can be conclude as

The Age of the 2 different groups of Education Attainment were quite different, most of the Lower Education farmers are age in the higher tier range or more than 50 years old (around 65 people or 34 percent of the Lower Education Attainment) than the one with Higher Education which their age are more spread into each category of age.

For the status and the number of siblings they are quite similar. Start with the Status of the respondents, they both are mostly married by the Lower Education, 75 percent of them are married as well as for the Higher Education one, 50 percent of them are married. Lastly, the number of siblings they have are more than 1 sibling; hence, only 4 percent of the Lower Education are the only child and for the Higher Education, only 1 percent of population are the only child in their family.

As for their parent's education, most of them (both groups of education attainment) their parent (specifically their father and mother) education attainment are below Junior High School or less than the standard education attainment in Thailand as seen on table3.

Education Attainment	Parent	Education Level	Frequency	Percentage
Lower Education	Father's	Below Junior High	147	77%
		Junior High	28	14%
		High School	9	5%
		High Vocational Certificate	7	4%
		Undergrade	0	0%
		Higher than Undergrade	0	0%
	Mother's	Below Junior High	151	79%
		Junior High	27	14%
		High School	10	5%
		High Vocational Certificate	2	1%
		Undergrade	1	1%
		Higher than Undergrade	0	0%
Higher Education	Father's	Below Junior High	49	62%
		Junior High	7	9%
		High School	14	18%
		High Vocational Certificate	3	4%
		Undergrade	6	7%
		Higher than Undergrade	0	0%
	Mother's	Below Junior High	58	74%
		Junior High	9	11%
		High School	9	11%
		High Vocational Certificate	0	0%
		Undergrade	3	4%
		Higher than Undergrade	0	0%

table4: Parents' Education Attainment

Next is the result of a Household Characteristics. For this particular one, we will examine the respondents' family occupation to see whether it has an impact on the respondent occupation or not. Start with the Lower Education's farmers.

Lower Education Attainment

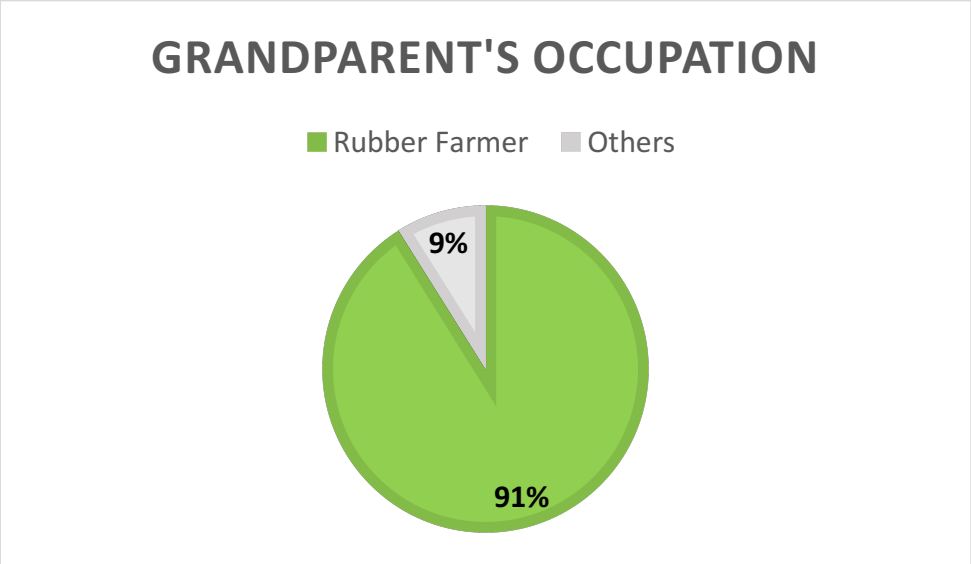

Figure 3: Grandparent's Occupation of the Lower Education Respondents

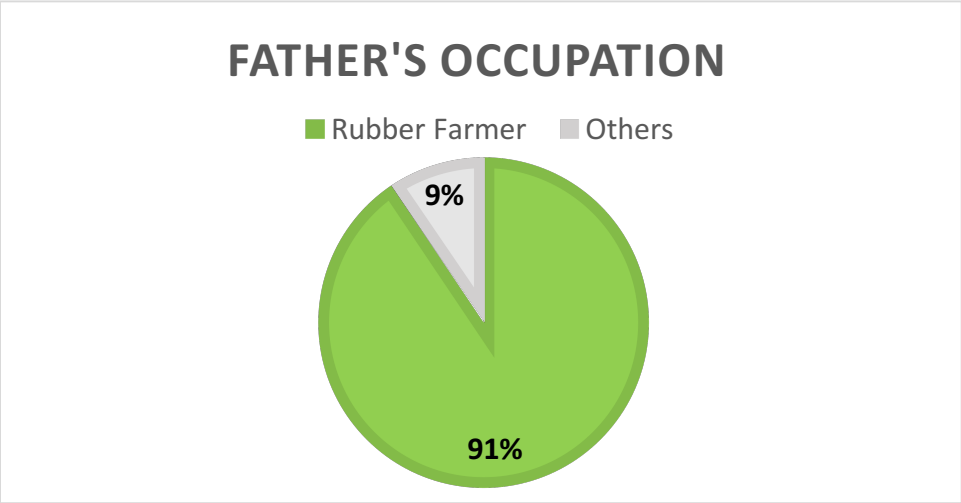

Figure 4: Father's occupation of the Lower Education Respondents

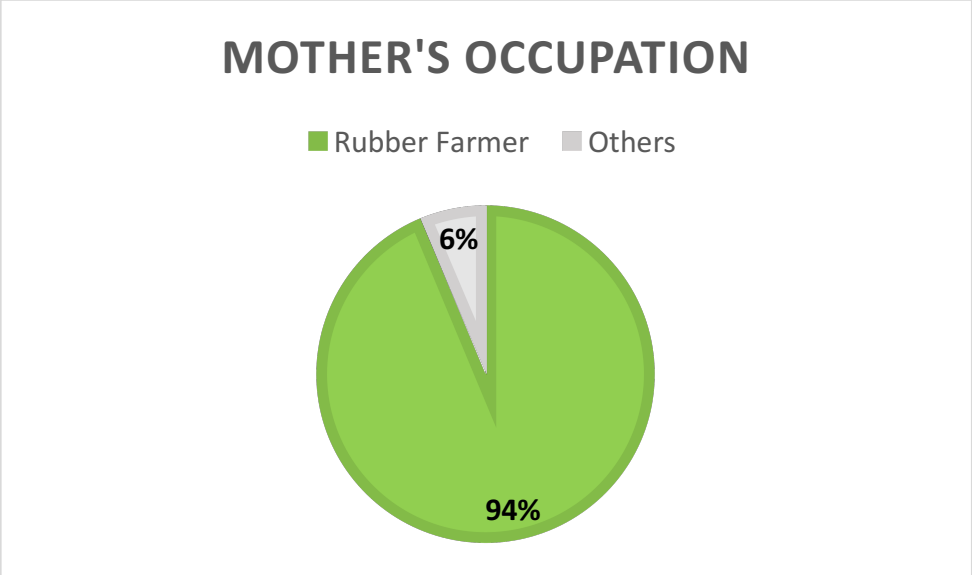

Figure 5: Mother's Occupation of the Lower Education Respondents

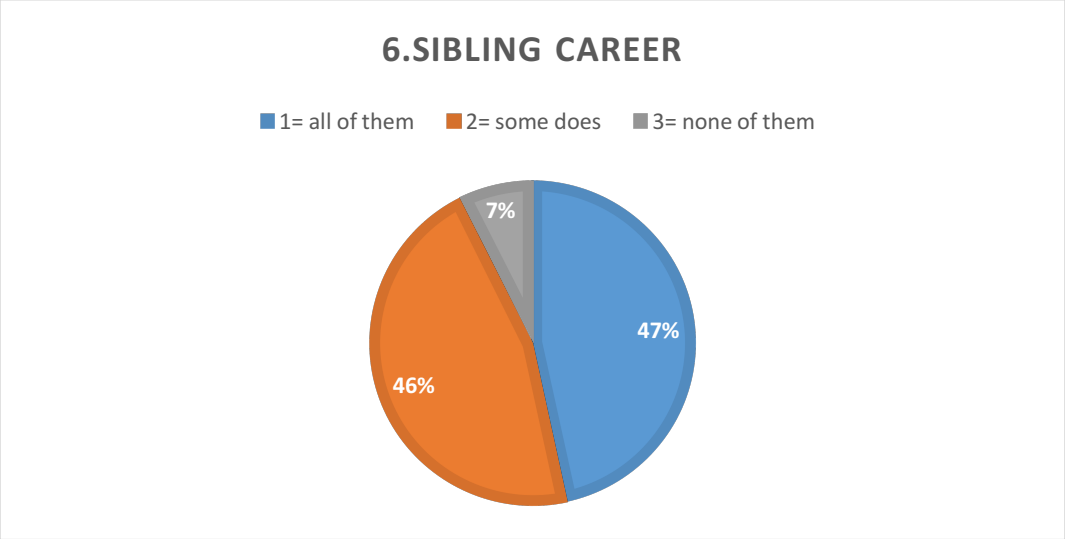

Figure 6: the number of siblings that do a rubber plantation

According to the figure 3, 4, 5 and 6, they were all represent the Lower Education Respondents' Family career. As far as figure 3 (*Figure 3: Grandparent's Occupation of the Lower Education Respondents), 4(Figure 4: Father's occupation of the Lower Education Respondents) and 5(Figure 5: Mother's Occupation of the Lower Education Respondents)* show that since their grandparent down to their parent generation, more than 90 percent of those are a rubber farmer. As far as the result concluded, not only the respondent is a rubber farmer, their siblings which almost a half of them are all a rubber farmer and leave 46 percent of them being some of their sibling does a rubber farming and some does not. This can be say that for the Lower Education Attainment Respondents, more than or equal to 2 generations of their family are doing a rubber farming as well.

Next is the Household Characteristics of the "Higher Education Attainment" Respondents.

Higher Education Attainment

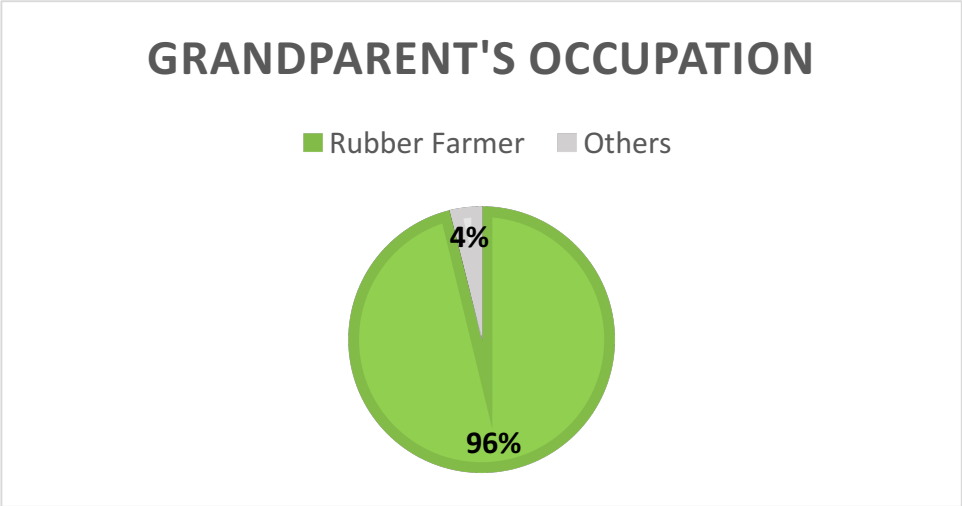

Figure 7: Grandparent's Occupation of the Higher Education Respondents

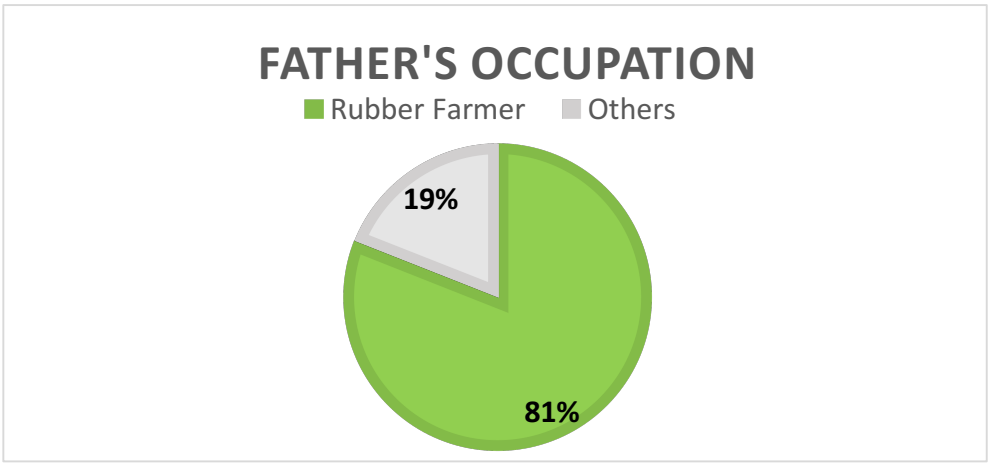

Figure 8: Father Occupation of the Higher Education Respondents

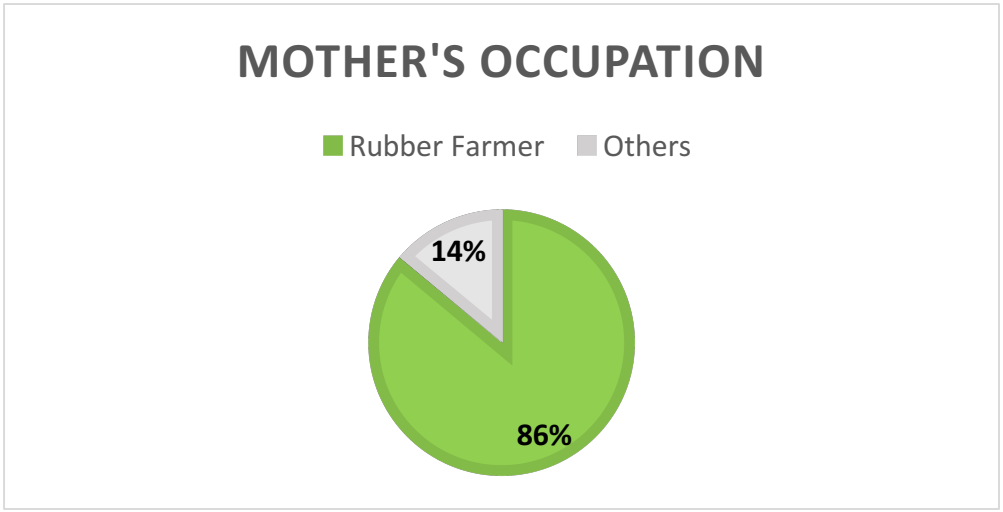

Figure 9: Mother's Occupation of the Higher Education Respondents

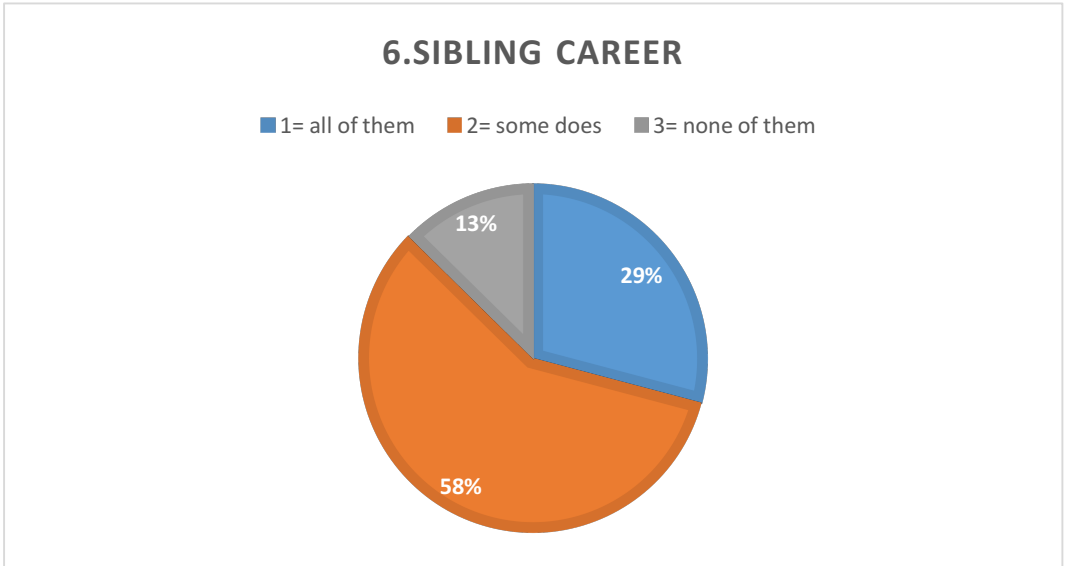

Figure 10: the number of siblings that do a rubber plantation

For the Higher Education Farmers, the result is similar to the Lower Education one which more than 80 percent of the Higher Education Attainment's grandparent and parent are a rubber farmer (Figure7, 8 and 9). Same thing as their sibling, more than a half of them are also in a rubber farmer business as well (Figure 10). Therefore, the Higher Education Attainment farmers are indifference with the Lower one in term of Family's Occupation, since they both of their family doing a rubber cultivation.

Next is about the income prospects, the result will conclude whether the rubber plantation is the only thing they do for their living or not, the consideration about rubber farming as their primary income and main source of their income for their household or not.

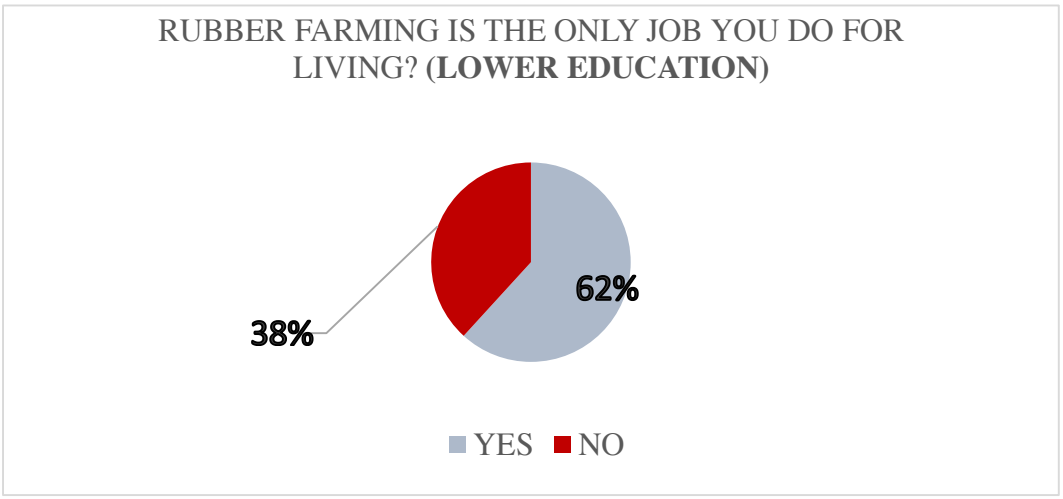

Figure 11: Does the rubber farming is the only job they do for living, the Lower Education Attainment Respondents

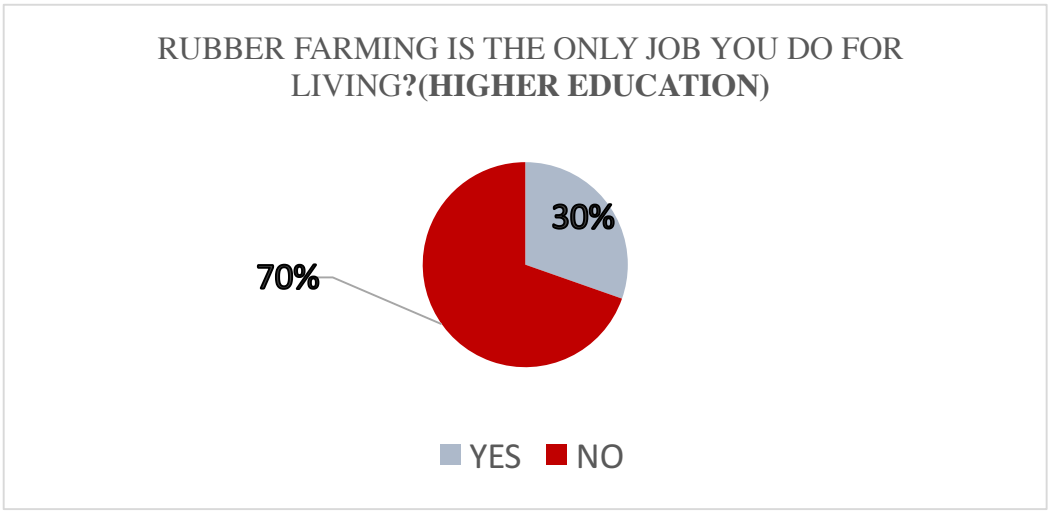

Figure 12: Does the rubber farming is the only job they do for living, the Higher Education Attainment Respondents

According to Figure11 and 12 which represent that whether the respondents are only doing a rubber farming for their living or not, the result of it has been completely opposite for each group. For the Lower Education Attainment (Figure 11), more than a half or 62 percent of them are doing only a rubber farming; in other word, their main income will depend on the rubber plantation which will discuss later on Figure 13. As for the Higher Education Attainment Respondent, only 30 percent of them rely on the rubber productivity only, the result said that 70 percent of them are doing something else as well (Figure 12), this may explain based on they are more opportunity of work offering for those who earn more knowledge.

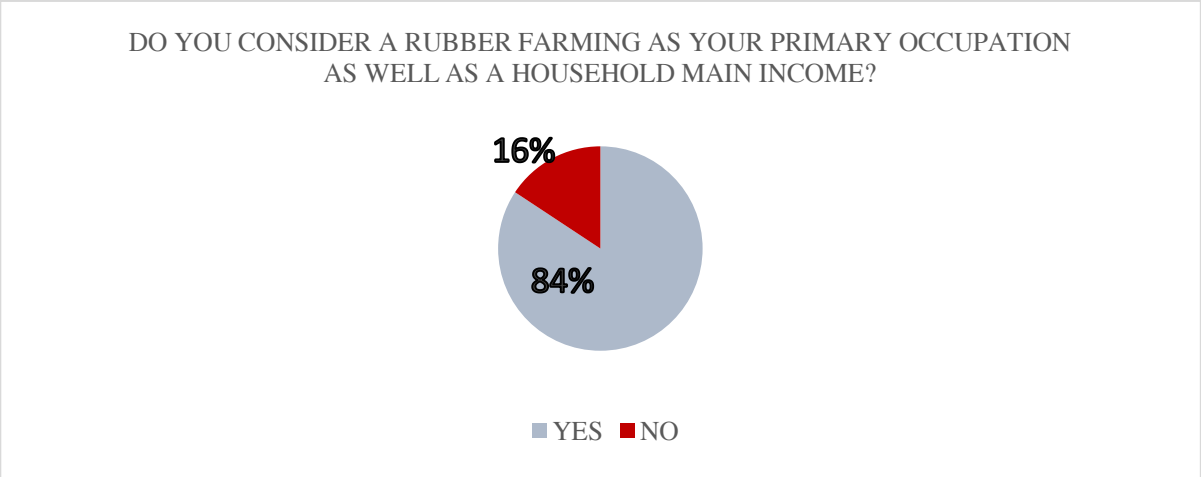

Figure 13: A consideration of whether rubber farming is their primary job and main income for their Household or not, the Lower Education Attainment Respondents

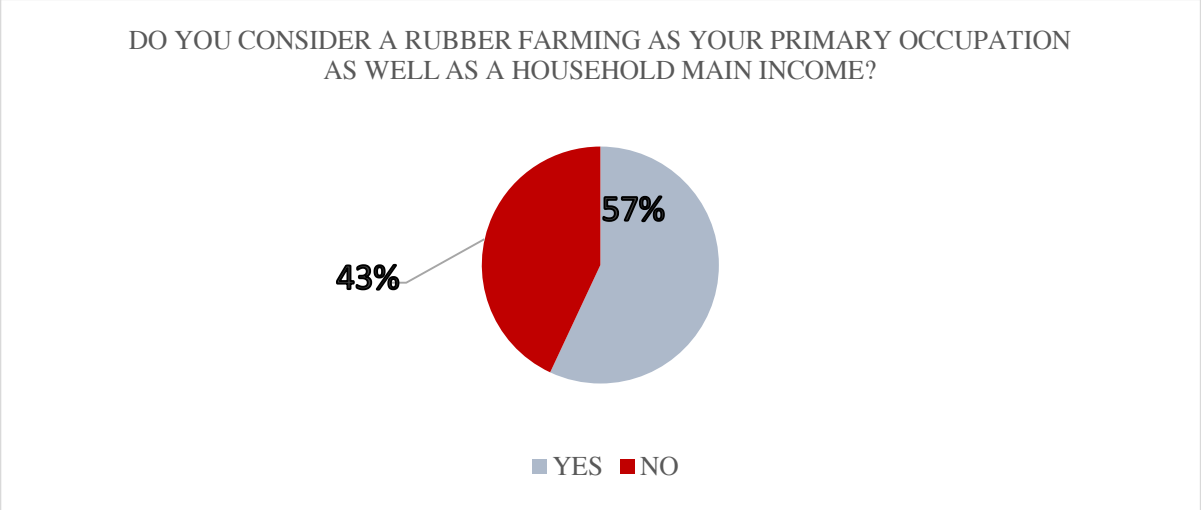

Figure 14: A consideration of whether rubber farming is their primary job and main income for their Household or not, the Lower Education Attainment Respondents

After the previous result of whether the rubber cultivation is the only occupation the respondents do or not (Figure 11 &12), it's not surprise for the farmers with the Lower Education tend to consider a rubber farming as their primary occupation as well as their household main income, with 84 percent of them do think so according to the Figure 13. For the Higher Education, it's been about a half-and-half for the answer, the 57 percent of them say yes, they consider the rubber farming as their main job and channel of income for their family and another 43 percent of them say that no, they have other job that they consider as their primary job and main support for their family (Figure 14).

Next one is the result about the Age of the tree and for the next 5 years, do they still see themselves keep planting a rubber tree or not.

	< 7 yrs	**7-12 yrs**	**13-18 yrs**	**19-24 yrs**	**25-30 yrs**	**> 30 yrs**
Lower Education	7%	37%	26%	12%	15%	3%
Higher Education	19%	43%	23%	4%	9%	2%

Table5: How old is the Rubber Tree Age (mostly)

According to the table5, the question of the age of the rubber tree can be imply to the willingness to change for the respondent as well. Since normally the rubber tree when you plant it you have to wait at least 7 years straight before the rubber tree will start producing the latex for the farmers. Therefore, the rubber tree can be considered as a long-term investment as well. However, the rubber tree also has their own lifetime which they will stop reproducing the latex when they age around 30 years; therefore, the farmers only have about 23 years to tapping the rubber tree.

For the result, both of the Lower and Higher Education Attainment Respondents have the similar average age of tree. Sixty-tree percent of the Lower Education and Sixty-six percent of the Higher Education Respondents, their tree aged around 7 to 18 years which consider as the tree middle age life of the tree.

Then the Respondents answered about the future short-term prospects of whether in the next 5 years, do they still see themselves as a rubber farmers or not? The respondents give pretty similar response which show in the chart below.

Lower Education

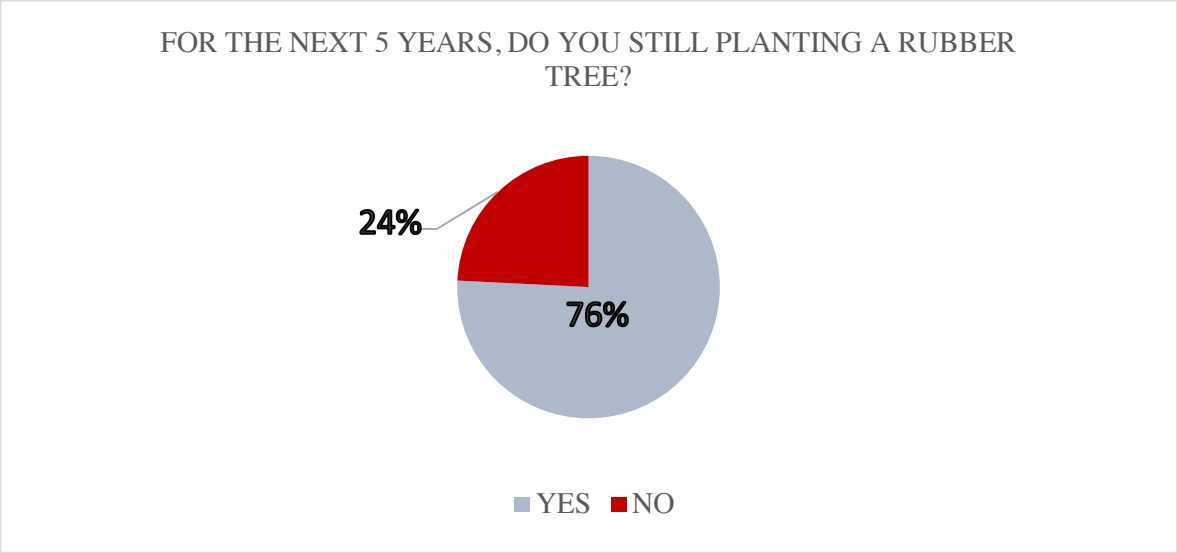

Figure 15: Whether the Respondents see themselves a rubber farmer still in the next 5 years or not, the Lower Education Farmers

Higher Education

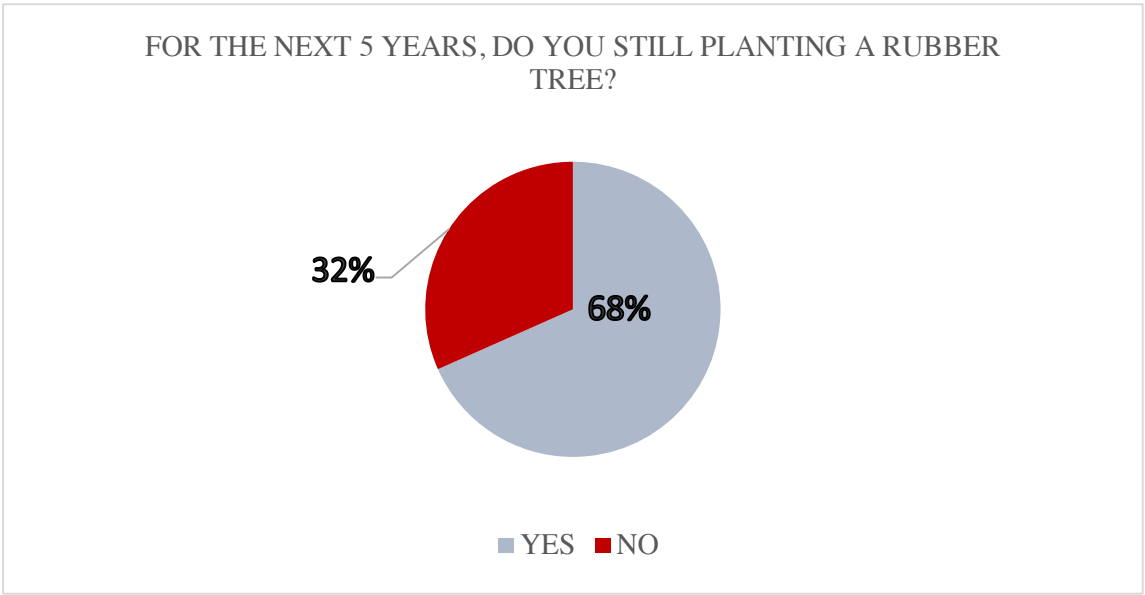

Figure 16: Whether the Respondents see themselves a rubber farmer still in the next 5 years or not, the Higher Education Farmers

As seen from the Figure 15 and 16, both of the groups does see themselves planting the tree still for the next 5 years with only around 10 percent different in the answer. For the Lower Education one, around 76 percent of them say yes, they still see themselves being a rubber farmer in the next half-decade and 68 percent of the Higher Education Respondent said yes, they will keep planting the rubber tree in the next 5 years as well. Which can be imply that for the near future their will still be quite a big number of rubber plantation still.

After seeing that the number of farmers who still keep planting for the next 5 years are quite indifferent for both group of respondents in figure 15&16. The next question will be more likely to see the willingness to keep planting in "Long term" instead of just a "short-term" like the previous one of 5 years. The question is "For the Rai that the tree is already cannot reproducing the latex anymore, what do you going to do with it?" which more like a long-term commitment rather than just 5 years which is a short term commitment. Then the respondents got a 4 choices to choose for which is 1) Cut down the tree then "planting the rubber tree again" 2) Cut down the tree then "changing to plant/farm something else" 3) Cut down the tree then "just leave the space alone" and 4) Cut down the tree then "sell that Rai".

For the respondents of each group, they will get to tick on the checkbox in the table(of Likert Scale) for each choices the questionnaire given which have been already describe in the methodology as well as can see the example of it in an Appendix as well. However, roughly, the scale of answer the respondent can answer is that 5 being the extremely agree about (most valued) , 4 being just agree, 3 being moderately, 2 being less agree, and 1 being low or not likely to agree with it (least valued); therefore, the scale would be 1(minimum) up to 5 which is maximum value. And here is the result for this particular question of "For the Rai that the tree is already cannot reproducing the latex anymore, what do you going to do with it?".

1)Cut down the tree then "planting the rubber tree again"

T-test for Equality of Means

Education Level	Mean	SD	t	df	p
Lower Education	3.65	1.43	2.10	148	0.037**[1]
Higher Education	3.25	1.40			

Table6: T-test for Equality of Means in the choice of cut down the tree the planting the rubber tree again.

[1] **p < 0.05

According to the p-value (Table6), there is a significantly different between the Lower Education and Higher Education Attainment for the choice of cut down the tree then "planting the rubber tree again" at 0.05 significance level. The one that weight this choice more is the one with the Lower Education by the average or the mean of 3.65 out of 5 and for the Higher Education, they weight this one less than the Lower one does with 3.25 in average. Even though, it seems like not much of a difference but in statistically its make a significantly different at 5 percent significant level.

2) Cut down the tree then "changing to plant/farm something else"

T-test for Equality of Means

Education Level	Mean	SD	t	df	p
Lower Education	2.71	1.30	-2.41	138	0.017**[2]
Higher Education	3.15	1.39			

Table7: T-test for Equality of Means in the choice of "Cut down the tree then "changing to plant/farm something else"

According to the p-value in table7, there are a significantly different in the Lower and Higher Education for the choice of Cut down the tree then "changing to plant/farm something else" at 5 percent significance level. However, unlike the previous table, this table told us that the one that valued this answer more is the one with the Higher Education with the mean of 3.15 out of 5. And the one that weight less is the one with the Lower Education, their mean is only 2.17 which almost a one unit different to the Higher Education one. This can be imply that the one with the Higher Education, when the tree cannot reproduce anymore, they are more likely to switch to plant something else unlike the one with the Lower Education which they seems to stick with the rubber farming still (Table 6).

[2] **p < 0.05

3.) Cut down the tree then “just leave the space alone”

T-test for Equality of Means

Education Level	Mean	SD	t	df	p
Lower Education	1.63	0.95	-0.84	130	0.401
Higher Education	1.75	1.09			

Table7: T-test for Equality of Means in the choice of “Cut down the tree then “just leave the space alone”

4) Cut down the tree then “sell that Rai”.

T-test for Equality of Means

Education Level	Mean	SD	t	df	p
Lower Education	**1.52**	**0.999**	**-0.63**	**147**	**0.529**
Higher Education	**1.61**	**0.992**			

Table8: T-test for Equality of Means in the choice of “Cut down the tree then “sell the Rai”

For the table7 and 8, they both are insignificantly different between those 2 groups, they both have very low valued for it which is less than 2 (almost the minimum value we can get). The idea of leaving the space alone or selling the space out does not make an interest for the farmers in both categories. Since these 2 choices are more likely can imply that if they choose these choices, they willing to change their career into something that doesn’t involve with a land no more or maybe non- agricultural related.

Next is the result for those who chose to keep planting the rubber tree, what is the main factor that make them do so, and for this particular survey, we have 4 main factors that give the respondents to valued it. Noted that the scale is the exact same as the previous question. By the factor that given are 1) A Family’s business 2) It’s a Long-term investment 3) Don’t know what else to do 4) Believe that the future price will rise up again.

1) A Family's business

T-test for Equality of Means

Education Level	Mean	SD	t	df	p
Lower Education	3.91	1.22	1.93	268	0.055*[3]
Higher Education	3.58	1.34			

Table9: T-test for Equity of Means in the factor of "A Family Business"

For the factor of because it is a family business, there are a significantly different between 2 groups of respondents at 0.1 significance level. The one that weight this particular factor more is the one with the Lower Education with the mean of 3.91which about 0.4 unit different from the Higher Education one (Mean = 3.58). This can be implied that the effect of seeing a previous generation of family doing the same job over and over again does make an impact for the Lower Education Respondents more than the Higher Education one.

2)It's a Long-term investment

T-test for Equality of Means

Education Level	Mean	SD	t	df	p
Lower Education	3.52	1.34	2.43	145	0.016**[4]
Higher Education	3.09	1.34			

Table9: T-test for Equity of Means in the factor of "It's a Long-term investment"

According to the table 9, there are a significantly different between 2 groups with the factor of the farmers still planting the rubber tree because they consider it as a long term investment at 5 percent significance level. The one that value this factor more is the one with the Lower Education with the mean of 3.52 and the Higher education have a mean of 3.09 which make a significantly different between 2 groups. Since this factor is more likely to be like they don't want to waste their time, money and everything that they have already been

[3] *p < 0.1
[4] **p < 0.05

invested, so it makes they want to stay in this business still and the one that consider that more is the one with Lower Education as I mention earlier.

3)Don't know what else to do

T-test for Equality of Means

Education Level	Mean	SD	t	df	p
Lower Education	3.46	1.30	2.87	151	0.005***[5]
Higher Education	2.97	1.25			

Table10: T-test for Equity of Means in the factor of "Don't know what else to do"

For this reason of "Don't know what else to do", there are significantly different in 2 groups of Education Attainment at 0.01 or 1 percent significance level. Which no surprise whatsoever, the one that weight this factor more are the one with Lower Education with average of 3.46 out of 5 which create almost 0.5 unit different with the Higher Education mean of 2.97. This factor more like if they change their career, they will be completely lost; hence, this is what they have always been doing for so long.

4) Believe that in the future the price will rise up again

T-test for Equality of Means

Education Level	Mean	SD	t	df	p
Lower Education	3.29	1.26	0.68	142	0.499
Higher Education	3.18	1.29			

Table11: T-test for Equity of Means in the factor of "Believe that in the future the price will rise up again"

For the last factor that given, the believe in the future price that will rise up once again, it doesn't make any significantly different or insignificantly different between the groups. Even though, both of them doesn't weight too much of the difference but the result shown in table11 seems like people still have a positive prospect in future price which both of the groups weight more than 3 units out of 5 for these factor. The Lower Education have a mean of 3.29 and the Higher Education have an average of 3.18.

[5] ***$p < 0.01$

Last but not least, here is the result of the mean of the determination factors that keep the respondents still planting the rubber tree even the current market price of it is 5 times less than the year 2011(Figure 1). And again the scale of this is like the last 2 previous question: 5 is the maximum number and 1 is the minimum number we can get.

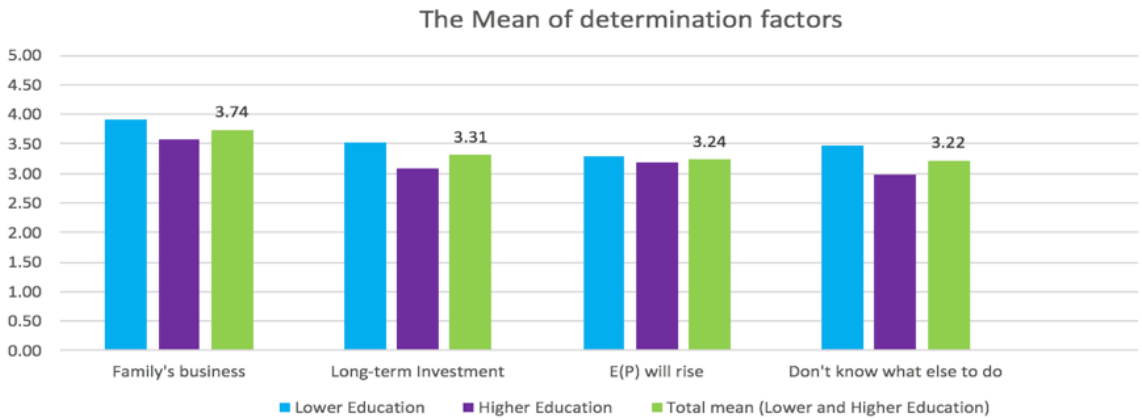

Figure 17: Mean of the determination factors

According to the figure 17, the scale of the mean range 1 to 5 which 5 is the maximum value we can get, and for the colors of the bars above, blue bars are represent the Lower Education, the purple bars are represent the Higher Education and the green one are the total mean or the combination mean of Lower and Higher Education's mean in each factor. And for this particular part we will focus only on the green bar. In overall, the survey show that the farmers in general are doing a rubber farming still because it's a family business, this is what they have seen since their parents do or in other word they grow up with it; this is the number one reason why according to the mean in figure17 with the mean of 3.74 out of 5. The second reason is that it is a long-term investment, as I mention earlier that the rubber tree you have to wait at least for 7 years until you be able to tapping the tree and get the product out of it. So, this reason also make the farmers don't want to change to do something else with 3.31 in average score. For the third place, people expectation in the future price are still positive toward it despite the price dropped with 3.24 score. Last but not least, people don't know what else they will do, if they change their career. This job might be something that they have been doing forever and if they have to change, they don't know what else they can do and will do, this come up with the last place out of 4 factors with the mean of 3.22 out of 5 but still it's in the high number of value.

5.Conclusion and Policy Implication

5.1 Conclusion

From the survey results, data analysis and interpretation are able to analyze that after grouping the respondents into 2 groups of Education Attainment which are "Lower Education" (less than or equal to High Vocational Certificated School) and "Higher Education" (equal to or more than Undergraduate degree). It's can be concluded that first, the Education Attainment does play a big role in a decision-making of the farmers. According to the result, the Lower Education Respondents tend to rely on the rubber cultivation more than the Higher Education one. Since majority of the Lower Education farmers have a rubber plantation as their only thing they do for living which leads to the income from rubber cultivation as their main channel of income. The Lower Education Attainment are more likely to stay in the rubber business in both short-run and long-run or in other word, likely to stick with the rubber farming no matter what. The main reasons behind it is that 1) it's a family business, they have seen it forever since their grandparent generation, so they don't feel like they want to change or anything. 2) because it's a long-term investment which they don't feel like want to waste anything that they already have been invested in such as time, money, land etc. Last but not least, 3) they don't know what else to do. Since they have a constraint of attained a very low education for the market requirement in general as well as since this job is what they feel like they can do it the best and if they have to change their work, they don't know which way or direction to go. Unlike the Higher Education Respondents, their vision toward the rubber farming is very flexible. The Higher Education farmers does not rely on the rubber cultivation as much as the Lower Education, they seem to have more jobs than the Lower Education one since they have more opportunity of job offering based on the education attainment. Even though, the result presented that they want to do a rubber farming still in short-run, in long-run they tend to choose change their cropping completely different where does not involve with the rubber cultivation. This is because the average of the rubber tree age is 7-13 years which still be able to get the product from the tree; therefore, it might not worth to change to crop something else in the near future.

In conclusion of the rubber farmers in general, since the past 5 years the price of natural rubber have been dropped significantly (2012-2016), the trend of the rubber supplier

is still in a very high level which the main reasons behind it (in order) is that; firstly, it is what they have been seeing forever, which make they copying the behavior. It's what their family have been doing in many generations so they likely to be repeated. Secondly, because it's a long-term investment as I mention earlier that for the rubber tree you have to wait for at least 7 years until you be able to tapping the product out of the tree. So, people who their tree is still be able to reproduce the latex are more likely to stay with the rubber plantation still. Thirdly, the farmers still have a positive prospect toward the price of the natural rubber. They believe that the price in the future will start kicked up again. Last but not least, a lot of farmers don't have the idea of what they going to do if they have to change the job, most of them feel like this is what they specialized at.

5.2 Policy Implication

Current policy that have launched for the rubber farmers is selling the latex to the government at 42 baht per kilogram of latex with 3 conditions; 1) the farmers need to have a rubber farmers' ID card 2) the farmer can only sell the latex 10kg per Rai with not more than 15 Rai or 150 Kg per person 3) the farmer need to have an account book from a Bank for Agriculture and Agricultural Cooperative (BAAC) for the government to transfer the money via it. Even though, the price that the government given are higher than what the private factory are giving by 10 baht (at the time the survey take account; Feb 19-23,2016), the farmers seems to not interested in selling the latex to the government. This is because the requirement and process are too complicate for the rubber farmers; so, they willingness to sell is not much.

According to an in-depth interview with 3 of the rubber farmers, they all said the same thing that for them there still so many flaw for this particular policy. Start with what seems to be the most important is that the place that the government buy the latex is very unsettled, the governor will go and stay in a different private factory that also buy the latex as well and will rotate to different factory in every other day, which make it hard for the farmers to keep up with. As well as normally the factory that the governor stay is in the city, so it's really difficult for the farmers to transport there with the latex (because mostly, the farmers have a motorbike not a car), therefore, it's not worth to do so for some farmer. Secondly, the process of transfer the money is very slow and unpredictable for the farmers. Since the government take at least 2 days to transfer the money, unlike the private factory that when the farmer selling the latex, they will get the money right away.

For the suggestion, the government may have to make the process less complicated for the rubber farmers and maybe acknowledge the farmers more about the policy because some of them does not have been heard about this policy before. As well as for the place where the government buy the latex should be more settle because this will help the farmers know where exact they can sell the product to. And for the money prospects, the government should remind or tell the exact date when the farmers will get the money transfer, so that will make it easier for the farmers to come to the city and go to the BAAC to get the money. Last but not least, the government should have a team to do more on a research and development with the local farmers to know and understand the real need of the farmers and the best way possible to solve the solution.

6.) Limitation of the study and Extension

For this research paper, there are number of limitations and weaknesses that can be examine. Firstly, since the paper take place in only 6 different villages in Nakornsrithammarat, South Thailand which the result might create a bias in some way. Hence, the rubber farmers are not the only southern people, it is also in the Northeast of the country as well. So for the Northeast where the culture and tradition are completely different from the south, the farmers there might have a different prospective as well. Therefore, this paper might valid only for the southern farmers of Thailand. As well as because the number of respondents are relatively small (270 populations in total) and the respondents of each category I categorized (the Lower education and Higher Education Attainment) are not equally the same, the one with the Lower Education is 191 respondents and the Higher Education Attainment farmers is only 79 people which those might create imprecise results of the research. Thirdly, the barrier with the local farmers, since the survey took place in the South which majority of the people speak southern; therefore, sometimes it's easy to misinterpretation and misunderstanding to explain the purpose of the survey to them.

Future research should investigate more information of the government policy explicitly because the government is one of the main channel that can make a big help for this problem that the rubber farmers have to faced. As well as try to gather more population as much as you can to make it more precise in data and result. Last but not least, try to go boarder in term of the place where the survey should tool place; especially do a survey in Northeast area as well to see whether there are any different between those two area or not.

7) Bibliography

Chambon, B., Ruf, F., Kongmanee, C., & Angthong, S. (2016). Can the cocoa cycle model explain the continuous growth of the rubber (Hevea brasiliensis) sector for more than a century in Thailand. *Journal of Rural Studies*, *44*, 187-197.

IRSG (2015). Statistical Summary of World Rubber Situation.

Kroeksakul, P., Naipinit, A., & Sakolnakorn, T. P. N. (2011). The economic and social effects of farmers growing para rubber in northeast Thailand: A case study of Sapsomboon village, Dun Sad sub-district, Kranoun district, Khon Kaen province. *Journal of Business Case Studies (JBCS)*, *7*(1).

Lockheed, M. E., Jamison, T., & Lau, L. J. (1980). Farmer education and farm efficiency: A survey. *Economic development and cultural change*, *29*(1), 37-76.
Manivong, V., & Cramb, R. A. (2008). Economics of smallholder rubber expansion in Northern Laos. *Agroforestry Systems*, *74*(2), 113-125.

Nguyen, T., & Cheng, E. (1997). Productivity gains from farmer education in China. *Australian Journal of Agricultural and Resource Economics*, *41*(4), 471-497.

Pitakpaibulkij, W., Jarurungsipong, R., & Suntornpagasit, R. (2015, December 9). *Industry Research Rubber Industery*. Retrieved March 20, 2016, from TRISRATING: http://www.trisrating.com/en/pdf/5_NR%20Industry%20Report-December.pdf

Poramacom, N. (2002). Revealed Comparative Advantage (RCA) and Constant Market Share Model (CMS) on Thai Natural Rubber. *Kasetsart Journal (Soc. Sci)*, *23*, 54-60.

Rubber Research Institute Department of Agriculture. (2016, January). *Thailand NR Production*. Retrieved February 2016, from thainr: http://www.thainr.com/uploadfile/20160215163746.pdf

Sakayarote, K., & Shrestha, R. P. (2016). Policy-driven rubber plantation and its driving factors: a case of smallholders in northeast Thailand. *International Journal of Sustainable Development & World Ecology*, 1-12.

Somboonsuke, B. (2001). Recent Evolution of Rubber Based Farming Systems in Southern Thailand. *Kasetsart Journal of Social Science*, *22*, 61-74.

Somboonsuke, B., & Shivakoti, G. P. (2001). Small holders of rubber-based farming systems in Songkhla Province Thailand: Problems and potential solutions. *Kasetsart Journal (Soc. Sci.)*, *22*, 79-97.

Suwanakul, S., & Wailes, E. J. (1987). Estimates of structural relationships for the world's rubber market with particular emphasis on Thailand's natural rubber industry. *Kasetsart Journal: Social Sciences*, *8*(2), 173-188.

Viswanathan, P. K. (2008). Emerging smallholder rubber farming systems in India and Thailand: A comparative economic analysis. *Asian Journal of Agriculture and Development*, *5*(2), 2.

Weerathamrongsak, P., & Wongsurawat, W. (2013). The rubber industry of Thailand: a review of past achievements and future prospects. *Journal of Agribusiness in Developing and Emerging Economies*, *3*(1), 49-63.

Workman, D. (2016, April 17). *Natural Rubber Exports by Country*. Retrieved April 23, 2016, from Worls's Top Exports: http://www.worldstopexports.com/natural-rubber-exports-country/

8. Appendix

1. Survey Questionnaire (English Version)

2. Survey Questionnaire (Thai Version)

(ENGLISH VERSION)

QUESTIONNAIRE

This survey is designed to get the real determination of what playing the big role for the rubber farmer to continuously planting the rubber tree; even though, the price has been dropping significantly for the past five years: A case study in Nakornsrithammarat province,Thailand.

Please put the symbol √ into ☐ in front of the text that suit you the most and please also take the time to answer the questions thoughtfully.

Part1 Demographic Characteristics of Respondents

1. Sex

   ☐ Male ☐ Female

2. Age

   ☐ Lower than 20 ☐ 20 – 30 years ☐ 31 – 40 years

   ☐ 41 – 50 years ☐ More than 50 years

3. Status

   ☐ Single ☐ Married ☐ Separate ☐ Divorce

4. Highest Education Level

   ☐ Lower than Junior High School ☐ Junior High School

   ☐ High School ☐ High Vacational Certificate

   ☐ Undergraduate Degree ☐ Master Degree or Higher

5. How Many sibling do you have (yourself not include)?

   ☐ None ☐ 1-2 ☐ 3-4 ☐ More than 5

6. Does your siblings also a Rubber Farmer?

   ☐ All of them does ☐ Some does ☐ None of them does

7. Father's Highest Education Level

   ☐ Lower than Junior High School ☐ Junior High School ☐ High School

   ☐ High Vacational Certificate ☐ Undergraduate Degree

   ☐ Master Degree or Higher

8. Mother's Highest Education Level

   ☐ Lower than Junior High School ☐ Junior High School ☐ High School

   ☐ High Vacational Certificate ☐ Undergraduate Degree

   ☐ Master Degree or Higher

9. What is your father occupation?

   ☐ Rubber Farmer ☐ Others (Please be specify ……)

10. What is your mother occupation?

☐ Rubber Farmer ☐ Others (Please be specify ……)

11. What is your grandparent occupation?

☐ Rubber Farmer ☐ Others (Please be specify…… …….)

12. How long have you been farming a rubber tree?

☐ Less than 5 years ☐ 5 – 20 years ☐ 21 – 30 years ☐ 31 – 40 years

☐ 41 - 50 years ☐ More than 50 years

Part2 Information about the Rubber Cultivation of Respondents

13. How many land do you owned?

☐ Less than 10 Rai ☐ 10-20 Rai ☐ 21-30 Rai ☐ 31-40 Rai

☐ 41-50 Rai ☐ More than 50 Rai

14. How many Rai that you used to do a rubber cultivation?

☐ Less than 10 Rai ☐ 10-20 Rai ☐ 21-30 Rai ☐ 31-40 Rai

☐ 41-50 Rai ☐ More than 50 Rai

15. Within 1 Rai, how many rubber tree have you plant?

☐ Less than 50 ☐ 50 – 70 ☐ 71 – 80 ☐ 81 – 100

☐ More than 100

16. The rubber tree (mostly) age,

☐ Less than 7 years ☐ 7 – 12 years ☐ 13 – 18 years ☐ 19 – 24 years

☐ 25 – 30 years ☐ More than 30 years

Part3 A Behavior of the Respondents

17. Is the Rubber Plantation the only thing you do for living?

☐ Yes ☐ No

18. How much you earn from Para Rubber Planting (monthly)?

☐ Less than 9,000 Baht ☐ 9,001 - 20,000 Baht ☐ 20,001 - 30,000 Baht

☐ 30,001 - 50,000 Baht ☐ 50,001 - 70,000 Baht ☐ 70,001 - 90,000 Baht

☐ More than 100,000 Baht

19. How much you earn apart from Para Rubber Planting (monthly)?

☐ None ☐ Less than 9,000 Baht ☐ 9,001 - 20,000 Baht

☐ 20,001 - 30,000 Baht ☐ 30,001 - 50,000 บาท ☐ 50,001 - 70,000 Baht

☐ 70,001 - 90,000 Baht ☐More than 100,000 Baht

20. Do you consider a Rubber Farming as your primary occupation or not?

☐ Yes ☐ No

21. Does the money that you earn from Rubber Farming is the main income for your Household or not?

☐Yes ☐ No

22. Do you think that your income is enough for your living or not?

☐ Yes ☐ No

23. For the past 5 years, do you feel like your income is less than before or not?

☐ Yes ☐ No

24. Normally where do you sell the latex at?

☐ Have my owned factory ☐ Private Factory

☐ Cooperation ☐Others ……

25. For the next 5 years, do you still see yourself planting the rubber tree still?

☐ Yes (**Go to Question 26)** ☐ No because ……..

26. If you still see yourself planting a rubber tree for the next 5 years, what is the reason?

Reason	Strongly Agree	Agree	Moderate	Less Agree	Least Agree
The tree still reproducing the latex					
Family Business					
It's a long-term investment					
Believe in Future price will rise					
Others, please be specify……					

27. For the Rai that the tree cannot reproducing anymore, what do you going to do with it?

	Strongly Agree	Agree	Moderate	Less Agree	Least Agree
Sell the tree and Replanting the rubber tree again					
Sell the tree and Leave that Rai alone					
Sell the tree as well as the Land					
Sell the tree and Change to plant something else					
Others, please be specify……					

28. If you choose "Sell the tree and Change to plant something else", What do you going to plant?

☐ Fruits ☐ Palm Tree

☐ Other, please be specify ……

29. If you choose to "sell the tree and replant the rubber tree again", what is the main reason to do so?

Reason	Strongly Agree	Agree	Moderate	Less Agree	Least Agree
Family Business					
Believe in Future Price that will rise					
Because this is the only thing you do best and you don't know what else to do					
Other, please be specify……					

**********Thank you for your participation **********

(THAI VERSION)

แบบสอบถามเพื่อการวิจัย

เรื่อง ปัจจัยที่มีผลกระทบต่อการตัดสินใจของชาวสวนยางในการเลือกปลูกยางพาราอยู่ทั้งๆที่ภายใน 5 ปีที่ผ่านมา ราคายางพาราตกต่ำถึง 4 เท่า (กรณีศึกษา ชาวสวนยางพาราจังหวัดนครศรีธรรมราช)

แบบสอบถามนี้จัดทำเพื่อนำไปใช้ในงานวิจัย ซึ่งเป็นส่วนหนึ่งในวิชา Senior Research **ของนิสิตคณะเศรษฐศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ปีการศึกษา** 2558

คำชี้แจง กรุณาใส่เครื่องหมาย √ ลงใน ☐

หน้าข้อความที่ตรงกับรายละเอียดความเป็นจริงของท่าน มากที่สุด

ส่วนที่1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

1. **เพศ**

   ☐ **ชาย** ☐ **หญิง**

2. **อายุ**

   ☐ **ต่ำกว่า** 20 **ปี** ☐ 20 – 30 **ปี** ☐ 31 – 40 **ปี**

   ☐ 41 – 50 **ปี** ☐ 50 **ปี ขึ้นไป**

3. **สถานะ**

   ☐ **โสด** ☐ **สมรส/อยู่ด้วยกัน** ☐ **แยกกันอยู่** ☐ **หย่าร้าง/ หม้าย**

4. **ระดับการศึกษา**

   ☐ **ต่ำกว่ามัธยมศึกษาตอนต้น** ☐ **มัธยมศึกษาตอนต้น**

   ☐ **มัธยมศึกษาตอนปลาย / ปวช** ☐ **ปวส**

   ☐ **ปริญญาตรี** ☐ **สูงกว่าปริญญาตรี**

5. **คุณมีพี่น้องกี่คน (ไม่นับตัวเอง)**

   ☐ **ไม่มี** ☐ 1-2 **คน** ☐ 3-4 **คน** ☐ **มากกว่า** 5 **คน**

6. **พี่น้องของคุณประกอบอาชีพสวนยางด้วยหรือไม่**

   ☐ **ทุกคนปลูกยางพารา** ☐ **บางคนทำ บางคนไม่ทำ** ☐ **ไม่มีใครปลูกยางพารา**

7. **บิดาของท่านจบการศึกษาระดับ**

   ☐ **ต่ำกว่ามัธยมศึกษาตอนต้น** ☐ **มัธยมศึกษาตอนต้น** ☐ **มัธยมศึกษาตอนปลาย / ปวช**

   ☐ **ปวส** ☐ **ปริญญาตรี** ☐ **สูงกว่าปริญญาตรี**

8. **มารดาของท่านจบการศึกษาระดับ**

   ☐ **ต่ำกว่ามัธยมศึกษาตอนต้น** ☐ **มัธยมศึกษาตอนต้น** ☐ **มัธยมศึกษาตอนปลาย / ปวช**

   ☐ **ปวส** ☐ **ปริญญาตรี** ☐ **สูงกว่าปริญญาตรี**

9. **บิดาของท่านประกอบอาชีพใด**

   ☐ **ชาวสวนยาง** ☐ **อื่นๆ (ระบุให้ชัดเจน** ……)

10. มารดาของท่านประกอบอาชีพใด

☐ ชาวสวนยาง ☐ อื่นๆ (ระบุให้ชัดเจน .....)

11. ปู่ ย่า ตา ยาย ของท่านประกอบอาชีพใด

☐ ชาวสวนยาง ☐ อื่นๆ (ระบุให้ชัดเจน .....)

12. คุณประกอบอาชีพปลูกสวนยางมาแล้วกี่ปี

☐ น้อยกว่า 5 ปี ☐ 5 – 20 ปี ☐ 21 – 30 ปี ☐ 31 – 40 ปี

☐ 41 - 50 ปี ☐ มากกว่า 50 ปี

<u>ส่วนที่2</u> ข้อมูลเกี่ยวกับสวนยางพาราของผู้ตอบแบบสอบถาม

13. คุณเป็นเจ้าของที่ดินทั้งหมดกี่ไร่

☐ น้อยกว่า 10 ไร่ ☐ 10-20 ไร่ ☐ 21-30 ไร่ ☐ 31-40 ไร่

☐ 41-50 ไร่ ☐ มากกว่า 50 ไร่

14. คุณปลูกสวนยางทั้งหมดกี่ไร่

☐ น้อยกว่า 10 ไร่ ☐ 10-20 ไร่ ☐ 21-30 ไร่ ☐ 31-40 ไร่

☐ 41-50 ไร่ ☐ มากกว่า 50 ไร่

15. ใน 1 ไร่ คุณปลูกยางทั้งหมดกี่ต้น

☐ น้อยกว่า 50 ต้น☐ 50 – 70 ต้น ☐ 71 – 80 ต้น☐ 81 – 100 ต้น☐ มากกว่า 100 ต้น

16. ต้นยางของคุณส่วนใหญ่มีอายุกี่ปี

☐ น้อยกว่า 7 ปี ☐ 7 – 12 ปี ☐ 13 – 18 ปี ☐ 19 – 24 ปี

☐ 25 – 30 ปี ☐ มากกว่า 30 ปี

<u>ส่วนที่3</u> พฤติกรรมของเจ้าของสวนยางต่อการปลูกยางพารา

17. คุณปลูกยางพาราเป็นอาชีพอย่างเดียวของคุณหรือไม่

☐ ใช่ ☐ ไม่ใช่

18. คุณมีรายได้เฉลี่ยต่อเดือนจากการปลูกสวนยางเท่าไร

☐ น้อยกว่า 9,000 บาท ☐ 9,001 - 20,000 บาท ☐ 20,001 - 30,000

☐ 30,001 - 50,000 บาท ☐ 50,001 - 70,000 บาท ☐ 70,001 - 90,000 บาท

☐ มากกว่า 100,000 บาท

19. คุณมีรายได้เฉลี่ยต่อเดือนนอกเหนือจากการปลูกสวนยางเท่าไร

☐ ไม่มี ☐ น้อยกว่า 9,000 บาท ☐ 9,001 - 20,000 บาท

☐ 20,001 - 30,000 ☐ 30,001 - 50,000 บาท ☐ 50,001 - 70,000 บาท

☐ 70,001 - 90,000 บาท ☐ มากกว่า 100,000 บาท

20. คุณถือว่าการปลูกยางพาราเป็นอาชีพหลักของคุณหรือไม่

☐ ใช่ ☐ ไม่ใช่

21. คุณถือว่ารายได้จากการทำสวนยางเป็นรายได้หลักของคุณหรือไม่

☐ใช่ ☐ ไม่ใช่

22. คุณคิดว่ารายได้ต่อเดือนเพียงพอต่อการดำรงชีพของคุณหรือไม่

☐ เพียงพอ ☐ ไม่เพียงพอ

23. ตลอด 5 ปีที่ผ่านมา คุณรู้สึกหรือไม่ว่ารายได้ของคุณลดน้อยลง

☐ รู้สึก ☐ ไม่รู้สึก

24. โดยปกติแล้วนั้น คุณขายน้ำยางให้ที่ใด

☐ มีโรงรมยางเป็นของตัวเอง ☐ โรงรมยาง (เอกชน)

☐ สหกรณ์ ☐อื่นๆ .....

25. อีก 5 ปีข้างหน้า คุณคิดว่าคุณยังจะปลูกยางพาราต่ออยู่อีกหรือไม่

☐ ปลูก **(ไปที่คำถามข้อ 26)** ☐ ไม่ปลูก เพราะ .....

26. ถ้าอีก 5 ปีข้างหน้ายังปลูกอยู่ อะไรคือเหตุผล

เหตุผล	มากที่สุด	มาก	ปานกลาง	น้อย	น้อยที่สุด
ต้นยางยังสามารถผลิตน้ำยางได้อยู่					
เป็นธุรกิจครอบครัว จึงไม่คิดจะเปลี่ยนไปทำอย่างอื่น					
ต้นยางเป็นการลงทุนที่ใช้ระยะเวลาในการปลูกนาน จึงไม่อยากเสียเงินและเวลาที่ลงทุนไปทำอย่างอื่น					
เชื่อว่าในอนาคต ราคาน้ำยางจะสูงขึ้นกว่าในปัจจุบัน					
อื่นๆ โปรดระบุ.....					

27. สำหรับพื้นที่ที่ต้นยางที่หมดอายุไขแล้ว ในไร่นั้นคุณจะทำอะไรต่อ

เหตุผล	มากที่สุด	มาก	ปานกลาง	น้อย	น้อยที่สุด
ขายต้นยางทิ้งแล้วปลูกยางพาราต่อ					
ขายต้นยางทิ้งแล้วปล่อยที่แปลงนั้นไว้เฉย					
ขายต้นยางทิ้งแล้วขายที่แปลงนั้น					
ขายต้นยางทิ้งแล้วเปลี่ยนไปปลูกอย่างอื่นแทน					
อื่นๆ โปรดระบุ.....					

28. หากคุณเลือก "ขายต้นยางทิ้ง แล้วเปลี่ยนไปปลูกอย่างอื่นแทน"

คุณจะเลือกปลูกอะไรแทนที่

☐ ผลไม้ ☐ ปลูกต้นปาล์ม

☐ อื่นๆ โปรดระบุให้ชัดเจน .....

29. หากคุณเลือก "ปลูกยางพาราใหม่อีกรอบ" อะไรเป็นปัจจัยหลัก

เหตุผล	มากที่สุด	มาก	ปานกลาง	น้อย	น้อยที่สุด
เป็นธุรกิจครอบครัว จึงไม่คิดจะเปลี่ยนไปทำอย่างอื่น					
เชื่อว่าในอนาคต ราคาน้ำยางจะสูงขึ้น					
เพราะทราบวิธีการปลูกยางเป็นอย่างดี และไม่รู้ว่าถ้าหากต้องเปลี่ยนไปทำอย่างอื่น ไม่รู้ว่าจะต้องทำอะไรและยังไง					
อื่นๆ โปรดระบุ.....					

**********ขอบคุณทุกท่านที่ให้ความร่วมมือในการตอบแบบสอบถามครั้งนี้**********