

The Determinants of Persistence Poverty: Case of Agricultural Households in Thailand

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The poverty incidence of households in Thailand is an enduring problem with efforts to resolve this issue culminating in the first edition of the national economic and social development plan. At present, the poverty rate at the household level in the country has decreased since 2000-2013, but the agricultural sector remains uniquely problematic. In 2011, the proportion of poor households in agriculture reached 21.56 percent, more than 281,000 households. Therefore, this study aims to identify factors that determine the extent to which agricultural households are experiencing poverty by using Logistic Regression Analysis while using data from Household Socio-Economic Survey conducted by NSO for the year 2013. The study found that agricultural households mostly have men as head of household. Most of them are between 51-60 years of age and have only received formal education till the primary level. There are 3-4 members per household and there are 1-2 people that do not work in rice cultivation as their main job. The factors that affect the chances of poverty for agricultural households depend on the dependency ratio and they are many members are working in the agricultural sector that makes agricultural households are a chance of experiencing increasing poverty. The level of education of the household head can help to reduce the chances of poverty, that is, at least a Diploma and/or Bachelor Degree. Therefore, when establishing guidelines to tackle the poverty of agricultural households in Thailand, the government should increase educational for to members in agricultural households and support agricultural training for technical knowledge to the head of household in order to enhance agricultural production.

Key words: Poverty, agricultural households, logistic regression analysis

1. INTRODUCTION

The poverty incidence of households in Thailand is an enduring problem with efforts to resolve this issue culminating in the first edition of the national economic and social development plan. At present, the poverty rate at the household level in the country has decreased since 2000-2013, but the agricultural sector remains uniquely problematic. In 2011, the proportion of poor households in agriculture reached 21.56 percent, more than 281,000 households. Therefore, this study aims to identify factors that determine the extent to which agricultural households are experiencing poverty by using Logistic Regression Analysis while using data from Household Socio-Economic Survey conducted by NSO for the year 2013. The study found that agricultural households mostly have men as head of household. Most of them are between 51-

60 years of age and have only received formal education till the primary level. There are 3-4 members per household and there are 1-2 people that do not work in rice cultivation as their main job. The factors that affect the chances of poverty for agricultural households depend on the dependency ratio and they are many members are working in the agricultural sector that makes agricultural households are a chance of experiencing increasing poverty. The level of education of the household head can help to reduce the chances of poverty, that is, at least a Diploma and/or Bachelor Degree. Therefore, when establishing guidelines to tackle the poverty of agricultural households in Thailand, the government should increase educational for to members in agricultural households and support agricultural training for technical knowledge to the head of household in order to enhance agricultural production.

Table 1 Urban Poverty Rate (%)			Table 2 Rural Poverty Rate (%)		
Region	2012	2013	Region	2012	2013
Bangkok	1.91	1.06	Bangkok		
Central	4.74	3.95	Central	8.92	6.72
North	15.71	15.21	North	18.43	17.77
Northeast	19.13	16.39	Northeast	20.10	17.88
South	9.02	7.98	South	15.70	12.67
Total	8.80	7.70	Total	15.96	13.89

Source: Socio-economic Survey (SES) by National Statistical Office, compiled by (Wuttisorn, 2014)

According to (Wuttisorn, 2014) it was found that in 2011,

the poverty rate in the non-agricultural sector will increase

twice. The poor population accounted for 21.56 per cent of in the entire agricultural sector while the proportion of non-agricultural poor is only 10.73 per cent of total non-agricultural population. This partly reflects how professional structures of the population are engaged in primary agriculture. However, the average of income from primary agricultural occupations is still lower than others. Income from agriculture is often uneven, depending on the climate and in addition to this, some farmers also have no land of their own and therefore, must hire others to do to farming which amounted to more than 1.2 million households. In this amount is more than 281,000 poor households (representing a total of more than 1.1 million poor people) as the structural factors that cause poverty in the agricultural sector continue to endure.

The government has undertaken several efforts to tackle the poverty problem. The current study determines and analyses the poverty incidence of people in Thailand to serve as a guideline for policymakers to tackle poverty in a timely and effective manner. The review of research related to factors that determine poverty in the country that has been undertaken on the basis of information provided by the Office of the National Economic and Social Development Board: (Board, 2006), and the Office of Agricultural Economics: (Economics, 2000), (Kaewmee, 2013) show how to calculate this using Head-count index, Foster-Greer-Thorbecke (FGT index) and poverty gap index, which is the study of the three research results in a similar manner, the poverty in the country has decreased. The Northeast was the region with the highest poverty incidence. Most people in Thailand live in rural areas and are farmers.

In addition, it is a study of poverty incidence in Thailand using multiple regressions, with each case being different in terms of the data used and the time period analyzed. The study that makes a difference is (Board, 2006) found that the proportion of dependency ratio, age of household's head and land holdings, all these factors affect poverty incidence and it was found that the proportion of dependency ratio and age of household's head is higher cause increasing poverty. The total area of holdings increased can help to reduce poverty. Consistent with the research of (Cherdchuchai et al., 2006) and M (1985), it was found that an increase in the size of the farm and landholding can reduce poverty also.

The study of (Kaewmee, 2013) found that the educational level of the head of household, debt, dependency ratio of the household and farm size are factors that affect poverty. The results show that the level of education of household head and an increase in farm size can help reduce poverty, while the debt and dependency ratio of the household with more dependents will increase poverty.

There is, however, some work-study foreign contexts in terms of factors that affect poverty incidence, such as Okurut (2002) The study determinants of poverty in each region of Uganda found that size of households, years of education of household head and migration status are

factors that cause poverty by found that the year of education of household head and migration status can reduce poverty while the size of higher household leads to a rise in poverty. The study of Riyana Miranti et al. (2005) analyzed poverty in Indonesia and found that income inequality that accounts for each region's poverty in Indonesia to increase. Consistent with the study of R Miranti (2007), it was found that inequality of income and higher labor migrations also make poverty in each region of Indonesia increased. However, natural resources, open country, human capital, infrastructure and the increase of government subsidized aid can lead to poverty reduction. While, Jan (2008) conducted a study of the determinants of poverty of the agricultural sector in Pakistan, it was found that infrastructure, the education year of household head and more irrigated area lead to poverty reduction but the age of the household head will actually cause poverty to increase in the country. These results are similar to those reported by LeRong (2014) in China.

In addition, the cases are using Logistic Regression Technique to analyze the factors that affect the chances of agricultural households experiencing poverty in the country. (Cherdchuchai et al., 2006) found that increasing size of land holdings for farming will lead to a reduction in poverty for households but increasing size of the household will lead to more poverty for that household. Shiferaw (2004), who studied poverty in rural households of Thailand by using logit model analysis, the result shows that landlessness is a major poverty determinant among the rural poor followed by household size.

Therefore, from the above research, it is shown that poverty in Thailand is a serious issue that must be explored and studied at length using Multiple Regression Analysis and Logistic Regression techniques to identify the factors that affect poverty at the household level in Thailand. For this article, we have chosen only households in the agricultural sector because they experience the most severe poverty. The objective of the study is to analyze the factors which affect the likelihood of agricultural households experiencing poverty. The results of this study will be useful for guiding policymakers as to how help reduce poverty in agricultural households.

2. RESEARCH OBJECTIVES

The objective of the study is to analyze the factors which affect the likelihood of agricultural households experiencing poverty.

3. RESEARCH METHODOLOGY

3.1 Data Description

Data used for the analysis of the determinants of poverty in agricultural households of Thailand is sourced from the Household Socio-Economic Survey conducted by the National Statistical Office for the year 2013. The survey covers all regions with a total sample size of 42,738 households, selecting only 15,305 agricultural households. Data was also collected from research reports and articles from the Office of Agricultural Economics, Office of the

National Economic and Social Development Board, National Statistical Office, and other relevant researches.

3.2 Quantitative Analysis

In this study, we use Logistic Regression Analysis to analyze the relationship between factors that cause agricultural households to experience poverty as summarized in the model below.

Logit regression, which is also called logistic regression, is one of the non-linear regression models specifically designed for a binary dependent variable whose outcome in a single trial can be one of the two possibilities only i.e., 0 or 1. Let $Y = \text{Poor income}$, when we observe the income of the household, it is either poor income or non-poor income. Therefore, the method implies assigning the value of 1 if the household income is below the poverty line and 0 otherwise.

The model can be written as equation (1)

$$Y_i = \beta_0 + \beta_i X_i + u_{it} \quad (1)$$

for a given value of X_i , let the probability that Y_i equals 1 and the probability of $Y_i = 0$ be denoted by

$$Pr(Y_i = 1) = P_i \text{ and } Pr(Y_i = 0) = 1 - P_i$$

According to Gujarati (2003), P_i is the probability of Y_i taking a value of 1 and

$(1 - P_i)$ is the probability of taking a value of 0 then the odd of Y_i having a value equal to 1 is denoted by equation (2)

$$\ln\left(\frac{P_i}{1-P_i}\right) = \beta_0 + \beta_i X_i + u_{it} \quad (2)$$

The natural log of this odds ratio is called the logit, and therefore, the model of equation (2) is called the logit model. The model tells us that the log of the odds ratio is a linear function of explanatory variables where the β_i gives the change in the log of the odds ratio per unit change in the explanatory variable. However, this logit does not give the probabilities directly.

Logit coefficients correspond to the β_i coefficients in ordinary least squares (OLS) regression. They are used to estimate (predict) the log odds that the dependent equals 1 (binomial logistic regression). The interpretation of the logit regression is as follows. Holding all other things constant, if X_i (the explanatory variable) goes up by a unit, on the average, the logit, or log of the odds ratio in favor of Y_i taking a value of 1 goes up approximately by β_i units. Therefore, the higher the value of the logit, the higher the odds in favor of $Y_i = 1$ and the higher the probability would be. However, it bears to note that β_i is neither a change in probability nor the marginal effect of the explanatory variable.

To compute the actual probabilities, according to (Gujarati, 2003), we need to calculate the logit values by putting the values of explanatory variables (β_i) for each observation. Let,

$$\ln\left(\frac{P_i}{1-P_i}\right) = z_i \quad (3)$$

then taking the antilog of equation (3) gives us equation (4)

$$\frac{P_i}{1-P_i} = e^{z_i} \quad (4)$$

then equation (5) would give

$$P_i = \frac{e^{z_i}}{1+e^{z_i}} \quad (5)$$

the next step is taking the partial derivative of the Logit (equation 2) with respect to each explanatory variable, which is denoted by equation (6)

$$\frac{\partial P}{\partial X_i} = P(P - 1)\beta_i \quad (6)$$

Equation (6) gives us the marginal effect or the partial change of P from marginal change in explanatory variable.

A Logit model can be used to estimate the determinants of poverty. This Logit model will be defined on the basis of income (PVL) where it is 1 if the household is poor and when household income is below the poverty line (8,933 baht per household (calculated by NESDB (2014)), and zero otherwise.

The variables consist of 1) Dependent variable is dummy variable (PVL = 1 for poor household, PVL = 0 for otherwise) 2) Independent variables are obtained from literature reviews and research papers that mentioned above. In this study, we define 30 Independent variables and assumptions on correlations of the factors that cause agricultural households are likely to suffer from poverty by considering the relationship in the same direction that show a positive sign and relationships in the opposite direction from negative sign from expected sign column. (see Table 3).

4. RESULTS

In this study, we use data from Household Socio-Economic Survey by NSO in 2013 to analyze the factors that affect the chances of agricultural household's experiencing in Thailand by using logistic regression analysis. It is found that from 15,305 agricultural households which are households with a monthly income less than poverty line; 3,613 households (24%) were identified as poor households while households with a monthly income of more than poverty line or non-poor household counted were calculated to be 11,692 households (76%).

Table 3: Explanatory of Variables

Variable Name	Variable Definition	Expected sign
Reg	Region	+
Area	Administrative Area	+
Nwork	Works of members	-
Mhouse	Number of household members	+
DebHM	Debt repay averagely per month (baht)	-
Hsex	Sex of Household Head	?
Hage	Age of Household Head	?
Education level of Household Head		
eduPri	Primary Education	-
eduLowSec	Lower Secondary Education	-
eduUpSec	Upper Secondary Education	-
eduPostSec	Post-secondary Education	-
eduBc	Bachelor Degree	-
Dependency ratio		
Nmf15	Number of member age < 15 years	+
Nmf60	Number of member age ≥ 60 years	+
NrecfGvt	Number of member receiving other government fund for farmer	-
Nvillfund	Number of member borrowing from village fund scheme	+
Type of Farm		
Tcrop	Crop production	
Tanimal	Animal production	
Tmix	Mixed farming	
Tsupport	Support activities to agriculture and post-harvest crop activities	
Tforest	Forestry and logging	
Tfish	Fishing and aquaculture	
NworkF	Number of household member worked in farm	+
Farmcost	Farm operating cost (baht)	-
Othassis	Assistance from other persons outside household (baht)	-
Gvtassis	Social pensions for the elderly and disability (baht)	-
AssetV	Value of household assets (baht)	-
DebtBus	Loan for Business (baht)	-
DebtF	Loan for Farm business (baht)	-
Land	Area of land used in agriculture (rai) (Owner + Land rented from other persons + Public land and others)	-

The studies of agricultural households in Thailand in 2013 found that the average monthly total income per household was 21,449 baht per household which has of 3-4 individual members per household and the number of laborers that do not make income is 1-2 people per household. Almost all household heads are men, accounting for 55%, and their

age lies between 51-60 years, accounted for 32%. Household heads older than 60 years accounted for 30% and 38% belonged to the age group 15-50 years. The study level of agricultural household heads showed that 82.12% report to have received only primary education level. (see Table 4-5)

Table 4: Age of Household Head

Age (years)	Frequency	Percentage (%)
15 – 30	276	2
31 – 40	1,535	10
41 - 50	3,904	26
51 - 60	4,862	32
age ≥ 60 years	4,728	30
Total	15,305	100

Source: calculated by author

In addition, in terms of agricultural household activities, it was found that crop production accounted for 88.83%, followed by the support activities to agriculture and post-harvest crop activities which accounted for 4.45%, and the rest was reported other activity, respectively, as shown in Table 6.

In conclusion, the general characteristics agricultural

households in Thailand are; in most households, men assume the position or role of leader, are age between 51-60 years), and their level of education is only primary level. The size for membership in their households is around 3-4 people but 1-2 people do not work for income or remuneration. An overview of agricultural activities showed that crop cultivation is the most activity for make income, especially rice cultivation.

Table 5: Education level of Household Head

Education level	Frequency	Percentage (%)
Primary Education	11,816	82.12
Lower Secondary Education	1,052	7.31
Upper Secondary Education	971	6.75
Post-secondary Education	177	1.23
Bachelor Degree	318	2.21
Master Degree	49	0.34
Doctoral Degree	1	0.01
Other Education	4	0.03
Total	14,388	100

Note: missing 917 observations

Source: calculated by author

Table 6: Type of Farm

Type of Farm	Frequency	Percentage (%)
Crop production	13,596	88.83
- Growing of rice	8,299	61.04
- Growing of cereals (except rice), sugar cane, tobacco, vegetables and other non-perennial crops	2,113	15.54
- Growing of perennial crops	3,158	23.23
- Plant propagation	26	0.19
Animal production	485	3.17
Mixed farming	195	1.27
Support activities to agriculture and post-harvest crop activities	681	4.45
Forestry and logging	71	0.46
Fishing and aquaculture	273	1.78
Hunting and trapping	4	0.03
Total	15,305	100

Source: calculated by author

The analysis of the factors that affect the chances that agricultural households are experiencing poverty found that the relation between independent variables and the dependent variable. Both positive and negative factors with respect to poverty are studied with factors that cause the increasing poverty (positive sign of coefficients) as well as factors causing a reduction in poverty in agricultural households (negative sign of coefficients). In light of its aims, this study is divided into two topics as follows (see Table 7).

1) Main factors that reduce agricultural households experiencing poverty.

The results present an analysis of the significant factors that make agricultural households more or less likely to experienced poverty reduction in three main parts and using 14 variables.

Factors on characteristics of households consist of Works of members (Nwork) and Number of household members (Mhouse).

The results show that the number of workers earning in their households (Nwork) is a factor that affects the likelihood of agricultural households experiencing poverty reduction. If a household member who can work for more earning does so, the household will have chance to experience poverty drop by 16.15 %. In terms of analysis of household size (Mhouse), it is found that if family members increase, the household will have a chance to experience poverty drop by 10.45 %. Due to working age of household members, it may be able to find additional income for the household, resulting in poverty reduction in agricultural households; this contradicts the study of Okurut (2002) which found that a large household size

leads households in Uganda to suffer from poverty increase.

Factors on social that is Education level of Household Head, consists of 5 levels of education: Primary Education (eduPri), Lower Secondary Education (eduLowSec), Upper Secondary Education (eduUpSec), Post-secondary Education (eduPostSec) and Bachelor Degree (eduBc).

The 5 levels of education for the household head are other factors that affect the likelihood of agricultural households experiencing poverty reduction (significant 0.000). When considering the details of each level of education, it was found that education in post-secondary education level has the highest of Marginal effects to 44.63, which means that if the head of household holds a Diploma degree, it will have a chance to see poverty drop by 44.63%. For undergraduate education, level of education has Marginal effects equal to 44.03 which means that if the head of household has been studied up to undergraduate education level, it has a chance to experience poverty drop by 44.03%. A higher level of education will provide the head of the household more access to knowledge and technologies that will help make agricultural production processes more efficient. The study found that diploma level and undergraduate level are major factor in helping reduce poverty in agricultural households. Considering their marginal effects are higher than the marginal effects for other independent variables in the Logit Model (see Table 7). As such, the results here are similar to those reported by (Kaewmee, 2013) who found that a higher level of education of household head can help reduce poverty in Thailand, as pointed out by the study of Okurut (2002) in Uganda and Jan (2008) in Pakistan.

Table 7: Logit Analysis of Determinants of Poverty in Agricultural Households

Variable	Coefficients	Mean	z-value	sig	Marginal effects (%)
Intercept	1.747e+00		1.578		31.50
Reg	8.789e-02		3.255	**	1.58
Area	2.480e-03		0.056		0.04
Nwork	-8.955e-01	2.25	-14.771	***	-16.15
Mhouse	-5.795e-01	3.47	-15.267	***	-10.45
DebHM	-3.842e-05	3,850	-5.459	***	0.00
Hsex	3.022e-03		0.062		0.05
Hage	-2.204e-03	54.97	-0.853		-0.04
eduPri	-7.026e-01		-8.558	***	-12.67
eduLowSec	-1.414e+00		-11.128	***	-25.51
eduUpSec	-1.622e+00		-11.770	***	-29.26
eduPostSec	-2.475e+00		-6.730	***	-44.63
eduBc	-2.441e+00		-7.948	***	-44.03
Nmf15	3.469e-01	0.73	6.988	***	6.26
Nmf60	2.379e-01	0.58	4.729	***	4.29
NrecfGvt	1.518e-01	0.09	1.824	.	2.74
Nvillfund	7.003e-03	0.46	0.156		0.13
Tcrop	6.059e-01		0.560		10.93
Tanimal	5.328e-01		0.490		9.61
Tmix	3.233e-01		0.293		5.83
Tsupport	6.908e-01		0.637		12.46
Tforest	9.127e-01		0.814		16.46
Tfish	-2.885e-01		-0.263		-5.20
NworkF	7.754e-01	1.96	15.431	***	13.98
Farmcost	-3.478e-06	69,494	-6.079	***	0.00
Othassis	-1.528e-05	17,431	-15.276	***	0.00
Gvtassis	-1.236e-05	5,065	-2.779	**	0.00
AssetV	-4.547e-07	1,000,622	-12.125	***	0.00
DebtBus	-2.451e-06	10,319	-2.587	**	0.00
DebtF	1.216e-07	48,300	0.368		0.00
Land	-2.582e-02	16.76	-9.351	***	-0.47
Total observation			15,305		
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					

Source: calculated by author

Economic factors consist of Debt repay (DebHM), Value of household assets (AssetV), Farm operating cost (Farmcost), Assistance from other persons outside household (Othassis), Social pensions for the elderly and disability (Gvtassis), Loan for Business (DebtBus) and Area of land used in agriculture (Land).

The study found that the repayment of debt (DebHM) is a factor that can reduce the chances of experiencing poverty in agricultural households, if the household has to provide more debt opportunity the more debt is likely to make poverty reduction. As well as the study of assets of agricultural households (AssetV) such as car engines, tractors, agricultural equipment, etc. It can be seen that if a household has its own agricultural property, there is an increased chance it can reduce poverty levels within the households. This is because agricultural assets are the capital factors affecting agricultural producers and potentially leading to an increase the performance of farmers.

The results of farm costs is another factor that can reduce the chance of experiencing poverty in the agricultural households. Due to the expansion of farm production, farm costs may be higher but they can lead to an increase in production efficiency, resulting in increased productivity, quality and sales revenue. Therefore, agricultural households which report to have higher farm costs have a higher chance to reduce poverty.

To get help from someone outside the household (Othassis) is also a factor that determines to what extent agricultural households because most members working in Thailand have an age around 15-40 years in agricultural household are the people who immigrant coming to work in the industry field and send money back to help support their families. Therefore, the other members in agricultural household will be elderly (age ≥ 60 years) up to 30% (see Table 4), who often will be the head of the household. As a result, agricultural household that have received allowance for the elderly and disabled (Gvtassis), can contributes to poverty reduction within those agricultural household.

In addition, the study also found that an agricultural household can borrow money from the bank to expand business investment (DebtBus) which also reduce poverty levels withing agricultural households. In terms of the size of agricultural land (Land), thestudy found that if agricultural household's land farming has increased, the chances of poverty in agricultural household can be reduced. As such, the results here are similar to those reported by (Board, 2006), (Cherdchuchai et al., 2006), and (Kaewmee, 2013) found that an increasing in farm size can help reduce poverty within agricultural households in Thailand.

2) Main factors that cause agricultural households are likely to experience increased poverty.

The study explores the role and impact of key factors that increase chances of experiencing poverty in agricultural households, consisting of five variables: Region (Reg), Number of members age <15 years (Nmf15), Number of members age \geq 60 years (Nmf60), Number of household member worked in the farm (NworkF) and Number of members receiving other government funding for farmers (NrecfGvt).

Regional characteristic (Reg) is the factor that affects an increase in the chances of experiencing poverty in an agricultural household. This is attributable to the fact that agricultural cultivation in Thailand depends on natural resources. Each region of the area is suitable for different types of agricultural cultivation. Therefore, if the located area is not suitable for cultivation, it is likely to cause households' poverty to rise to 1.58%.

The dependency ratio of agricultural households who are unable to make money for the household; considering the number of children younger than 15 years (Nmf15) and the number of elderly people aged over 60 years (Nmf60), if the household's dependency ratio is high, it will increase the chances of experiencing poverty in the agricultural household. If a household has a higher number of children younger than 15 years, it is likely to experience poverty rising to 6.26%. Moreover, if households have a higher number of elderly people aged over 60 years, then too, the household is likely to experience poverty rise to 4.29%. As such, the results here are similar to those reported by (Board, 2006).

The members of household working in agriculture (NworkF) is a factor that increased the chances of experiencing poverty within agricultural household. This is because the wage of employment in agriculture is usually lower when compared to outside agriculture and in most cases, labor is provided the members in their households which means it the labour does not earn any wage as compensation. Therefore, when household members who are employed in agricultural activities are increased, the chances of experiencing poverty in agricultural households rise to 13.98%.

Moreover, the results are in line with the assumptions made by the ministry of agriculture, that government's agriculture loan scheme will foster agriculture growth and will help in reducing poverty. The analysis in 2013 showed that if the number of households has members who have joined government projects to help farmers is higher, it will increase the chances of experiencing poverty in agricultural households to 2.74% (significant 0.05). This may be attributable to the fact policies formulated to help farmers are inefficient, focus on providing loans to the agricultural sector but do *not* focus on the development of the technological capacity to improve productivity in the long run and in a sustainable manner. Therefore, agricultural production still largely depends on climate-related factors as a result of which, productivity is difficult to predict. Therefore, the increased loan for their households to invest in farm can be a factor that can

increase the chances or likelihood of experiencing poverty in agricultural households.

5. CONCLUSIONS AND DISCUSSIONS

The poverty rate of households in Thailand declined steadily since 2000-2013 but when considering the situation of poor households, it was found that the majority of households experiencing poverty were associated with the agricultural sector 21.56%, that is, more than 281,000 households. In light of this, this study explored the causal factors affecting agricultural households' chances of experiencing poverty. Study results show that the general characteristics of the agricultural households are that the leader for their household is almost always a male member of their family and belongs to the age bracket of 51-60 years. Most of them have only primary education levels. The size of the households is 3-4 people with 1-2 people who cannot work for make earning. Many agricultural households report having rice cultivation as their main job.

The main factor affecting the poverty rate in agricultural households found that the dependency ratio in the agricultural household who are unable to make money for the household is very high, making agricultural households more susceptible to increased poverty. As well as the household members are employed in agriculture are numerous. This causes an increase in households experiencing poverty because wages are lower than in other occupations. The level of education of the household head also affects poverty in the agricultural household by considering how marginal effects were higher than other factors especially education in diploma and bachelor's degree. Therefore, the educational background of the head of household with at least diploma level or higher proven to be helpful in overcoming the poverty situation currently experienced.

Finally, in establishing guidelines to tackle the poverty rate/level in agricultural households in Thailand. The results of this study suggest that increased educational opportunities to the members in agricultural household can be particularly helpful in countering or mitigating the effects of poverty at the household level. The government should adopt a policy to support the education children and should ensure availability of agricultural trainings and technical knowledge to the head of household in order to enhance sector productivity.

REFERENCES

- Cherdchuchai, S., & Otsuka, K. (2006). Rural income dynamics and poverty reduction in Thai villages from 1987 to 2004. *Agricultural Economics*, 35, 409-423.
- Board, N. E. a. S. D. (2006). Poverty situation in Thailand from 1988 to 2004. *NESDB, Bangkok*.
- Cherdchuchai, S., & Otsuka, K. (2006). Rural income dynamics and poverty reduction in Thai villages from 1987 to 2004. *Agricultural Economics*, 35(s3), 409-423.

doi:<https://doi.org/10.1111/j.1574-0862.2006.00187.x>

- Economics, O. o. A. (2000). Statistics report of agricultural sector in Thailand: year 2000. *OAE, Bangkok*.
- Jan, D., A. Chishti and P. Eberle. (2008). Annual Conference, An analysis of major determinants of poverty in agricultural sector in Pakistan, July 27-29.
- Kaewmee, S., & Sirisupluxana, P. (2013). Factors Affecting Poverty Incidence of Thai Agricultural households. *14*(1), 17-29. Retrieved from <https://so01.tci-thaijo.org/index.php/AEJ/article/view/10528>
- LeRong, Y. (2014). Growth, inequality and poverty reduction in rural China. *International Journal of Agricultural Extension*, 49-56. Retrieved from <https://journals.esciencepress.net/index.php/IJAE/article/view/649>
- M, K. (1985). Agricultural development, rural, poverty, and income distribution in Thailand. *The Developing Economies*, 23, 4.
- Miranti, R. (2007). The determinants of regional poverty Indonesia:1984-2002. Ph.D. dissertation, The Australian National University.
- Miranti, R., & Resosudarmo, B. P. (2005). Understanding regional poverty in Indonesia: is poverty worse in the east than in the west. *Australasian Journal of Regional Studies*, *The*, 11(2), 141-154. Retrieved from <https://search.informit.org/doi/abs/10.3316/infornit.058253335957288#>
- Okurut, F., J. Odwee and A. Adebua. (2002). Determinants of regional poverty in Uganda. AERC research paper 122.
- Office of Agricultural Economics. 2000. Statistics report of agricultural sector in Thailand: year 2000.
- Shiferaw, T. R. (2004). *Impact of Growth on Income Inequality and Poverty in Rural Households of Thailand*. Kasetsart University,
- Wuttisorn, P. (2014). Rural-Urban Poverty and Inequality in Thailand. The international policy workshop on rural-urban poverty linkages in Zhejiang, People's Republic of China. 2-4.