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by UIR Muhammad Mukhlis

PROCEEDNG
ICoSEEH
2017

International Conference on Science Engineering and Technology (ICoSET) and International Conference on Social Economic Education and Humaniora (ICoSEEH)
08 - 10 November 2017
Pekanbaru, Indonesia

ICoSEEH 2017 Partner and Support

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FOREWORD FROM CHAIR OF ICOSET & ICOSEEH
UNIVERSITAS ISLAM RIAU

In the name of Allah, Most Gracious, Most Merciful

Assalamualaikum Wr. Wb,

Welcome to the International Conference on Science Engineering and Technology (ICoSET) and International Conference on Social Economic Education and Humaniora (ICoSEEH).

ICoSET & ICoSEEH 2017 has a theme "Sustainability Development in Developing Country". This forum provides researchers, academicians, professionals, and disciplinary working or interested in the field of Science Electrical Technology and Social Education Economy and Humaniora to show their works and findings to the world.

I would like to express my hearty gratitude to all participants for coming, sharing and presenting your experiences in this vast conference. There are more than 150 papers submitted to ICoSET & ICoSEEH UIR 2017. However only high quality selected papers are accepted to be presented in this event, so we are also thankful to all the international reviewers and steering committee for their valuable work. I would like to give a compliment to all partners in publications and sponsor ships for their valuable supports.

Organizing such a prestigious conference was incredibly challenge and would have been impossible without our outstanding committee, So, I would like to extend my sincere appreciation to all committees and volunteers from Chiba University, Saga University, Universiti Teknologi Mara, Universiti Utara Malaysia, Dayen University, Kyungdong University for providing me with much needed support, advice, and assistance on all aspects of the conference. We do hope that this event will encourage the collaboration among us now and in the future.

We wish you all find opportunity to get rewarding technical programs, intellectual inspiration, renew friendships and forge innovation and that everyone enjoys some of what in Pekanbaru-Riau special

Pekanbaru, 8th November 2017

Dr. Evizal Abdul Kadir, M.Eng
Chair of ICoSET & ICoSEEH 2017

FOREWORD FROM RECTOR
UNIVERSITAS ISLAM RIAU

It is our great pleasure to join and to welcome all participants of the International Conference on Science Engineering and Technology (ICoSET) and International Conference on Social Economic Education and Humaniora (ICoSEEH) 2017 in Pekanbaru. I am happy to see this great work as part of collaborations among Chiba University, Saga University, Universiti Teknologi Mara, Universiti Utara Malaysia, Dayen University, Kyungdong University. In this occasion, I would like to congratulate all participants for their scientific involvement and willingness to share their findings and experiences in this conference.

I believe that this conference can play an important role to encourage and embrace cooperative, collaborative, and interdisciplinary research among the engineers and scientists. I do expect that this kind of similar event will be held in the future as part of activities in education research and social responsibilities of universities, research institutions and industries internationally.

My heart full gratitude is dedicated to organizing committee members and the staff of Islamic University of Riau for their generous effort and contribution toward the success of the ICoSET & ICoSEEH 2017.

Pekanbaru, 8th November 2017

Prof. Dr. H. Syafrinaldi, SH., MCL
Rector of Islamic University of Riau
Pekanbaru, Indonesia

TIME SCHEDULE

International Conference on Science Engineering and Technology (ICoSET) and International Conference on Social Economic Education and Humaniora (ICoSEEH) Pekanbaru, Indonesia, 08-10 November 2017

TIME	ACTIVITIES	PERSON IN CHARGE	VENUE
November 08, 2017			
08.00-08.30	Registration	Committee	
08.30-09.15	Opening Ceremony:	Committee	
	Quran Recitition	Committee	
	Indonesia Raya National Anthem	Committee	
	Speech of the Committee	Chairman of the committee **Dr. Evizal Abdul Kadir, ST, M.Eng**	
	Opening speech	Rector of Islamic Universty of Riau **Prof. Dr. H. Syafrinaldi, SH., MCL**	
	Performing Arts (Traditional Dance)	Committee	
09.15-09.30	Photo Session and Coffee Break	Committee	
09.30-12.00	Keynote speakers: 1. Prof. Dr. Shigeki Inaba: Professor of Agronomy. Agricatural Plant Science & Agricultural Economics. Saga University, Japan. 2. Prof. John Lee PhD, ME, MSc, BSc: President Kyungdong Global Campus Research, Kyoto University, Japan 3. Yohei Murakami, Ph.D: Center for the Promotion of Interdisciplinary Education	Moderator 1. Dr. Ujang Paman Ismail, M.Agr 2. Dr. Evizal Abdul Kadir., M.Eng 3. Arbi Haza Nst, B.IT, M.IT	Auditorium Rectorat 4th Floor

TIME	ACTIVITIES	PERSON IN CHARGE	VENUE
12.00-13.00	Lunch Break	Committee	3rd Floor
13.00-15.00	Parallel Session 1 Participants	Moderator	4rd Floor
15.00-15.30	Coffee Break	Committee	
15.30-17.30	Parallel Session 2 Participants	Moderator	
17.30-17.45	Closing Ceremony	Committee	
November 09, 2017			
07.30-08.00	Re-registration	Committee	1st Floor
08.00-17.00	Siak Tour: - Istana Siak - Klenteng Hock Siu Kiong (Bangunan Merah) - Masjid Syahabuddin - Balai Kerapatan Adat		

LIST OF PRESENTES

International Conference on Social Economic Education and Humaniora (ICoSEEH)

ROOM 3

Time Slot	No	Paper ID	Authors	Title
Parallel Presentation 1 (13.00-15.00)	1	2005	Andrew Shandy Utama	Protection of State on Money Deposits of The Customer in Bankings Who Experience Bankruptcy
	2	2009	Elinur, Asrol, Heriyanto	Household Economic Behavior of Rice Farmers Rambah Samo in District of Rokan Hulu Riau province
	3	2017	Suyadi, Susie Suryani, Syahdanur	Analysis of Micro Small and Medium Enterprises Development (MSMEs) in Bengkalis Regency – Riau
	4	2018	Syafhendry, Sri Maulidiah, Sadu Wasistiono, Asmaul Husnah	The Role of the City Government in the Empowerment of Poor Community in the City of Pekanbaru Provinsi Riau
	5	2019	Thamrin	The Legal Analysis of Minimum Wage Determination Based on Government Regulations no. 78 Year 2015 about Mission
	6	2020	Yusrawati, Siska, Nawarti Bustamam	Analysis of Use of Accounting Information on Micro, Small and Medium Enterprises in Bengkalis Sub-District Bengkalis Regency of Riau
Parallel Presentation 2 (15.30-17.30)	7	2002	Rosyidi Hamzah	The Clash Between Populism and International Human Rights Law
	8	2003	Syahraini Tambak, Amril M, Zuriatul Khairi	The Influence of Emotional Intelligence on the Professionalism of Madrasah Teachers
	9	2004	Ali Darsono	Research Efforts of Student Learning Results by Using Line Graph Media in Cultural Language Learning Music Materials are Basic Theory of Music in Class X1 in Senior High School 1 Kabun Rohul District
	10	2006	Zetriuslita	Critical Thinking Ability in Learning: How Important is it? (Theoretical Review)
	11	2007	Arief Rifa'i Harahap, Lilis Suriani, Rosmita, Indrian Syafitri	Employee Performance Analysis in Context Implementation Online System at Islamic University of Riau in Pekanbaru

ROOM 4

Time Slot	No	Paper ID	Authors	Title
Parallel Presentation 1 (13.00-15.00)	1	2001	Syafrinaldi	Brand Legal Updates In Order to Investment Improvement In Indonesia
	2	2008	Dupri, Rices Jatra	Differences Model Teaching Personal Social Responsibility (TPSR) and Cooperative Learning Type STAD Against Student Responsibility in Big Ball Lesson in Pintar Senior High School Teluk Kuantan
	3	2010	M. Fransazeli Makorohim	The Performance Motion of Jungkit Jump Technique of Student Physical Education, Healt and Recreation Semester 4 Islamic University of Riau
	4	2011	Kasmanto Rinaldi	Corruption as One of the Cultural Culture in Indonesia (Case Study Rutan Sialang Bungkuk-Pekanbaru)
	5	2012	Leni Armayati, Zulriska Iskandar, Ahmad Gimmy P. Siswandi, and Zainal Abidin	Juvenile Deliquency Behavior of Authoritarian Parenting Parents And Conformity
	6	2013	Merlina Sari	Learning Process of Physical Adaptive Education Children Running in Extraordinary School of Kasih Ibu Pekanbaru
	7	2014	Miranti Eka Putri	Teaching and Learning English at Inclusive Senior High School Pekanbaru
Parallel Presentation 2 (15.30-17.30)	8	2015	Rezki	Difference Global and Elementer Practice Methods on the Results of Bullet Rejects of Students SMP Negeri 1 Kuok
	10	2016	Sukarni, Radiusni	The Influence of Lecturer Competency and Lecturer's Performance to Student Satisfaction Level of Accounting Education FKIP UIR Pekanbaru
	11	2021	Zulrafli, Turimin	Use of Motion Recorder Tool for Improved Forehand Learning Course of Student Tennis Court Class III.C Faculty of Teacher Training and Education Islamic University of Riau Pekanbaru
	12	2022	Dunia Siagian	Improving Quality of Education Through School Management
	13	2022	S. Marbun, Wika Rebina	Mediation Effectiveness in Custom Adjustment in the Country of Pekanbaru

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23	2023	S. Marbun, Wika Rebina	Mediation Effectiveness in Custom Adjustment in the Country of Pekanbaru

HOUSEHOLD ECONOMIC BEHAVIOR OF RICE FARMERS RAMBAH SAMO IN DISTRICT OF ROKAN HULU RIAU PROVINCE

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Abstract

The household economic assessment of farmers includes a discussion of farm households from the aspects of production and consumption carried out simultaneously. This study aims to analyze the factors affecting farmers in production, allocation of working time, income and household expenditure. The research used survey method to get description of behavior of farmer household of paddy rice. Sampling method is multi stage random sampling method with the number of samples of 40 households of paddy field farmers. The type of data collected is cross section data of 2016. Analysis of this research data is econometric analysis of simultaneous equations. The results showed that significant rice production was influenced by land area and number of seeds and the use of labor outside the family. The allocation of labor time in farming is influenced by labor costs in farming and outside wages. The allocation of off-farm work time is influenced by the allocation of working time in farming and labor force of farm households. The use of labor outside the farming family is significantly influenced by the area of wetland rice planting and farming investment. The out-of-farm revenue is significantly influenced by the allocation of off-farm work time and farmer education and farm wages. Food, clothing, education, health and recreational expenditures are significantly influenced by household income and savings. The number of significant and positive family members affected the expenditure of food, clothing and health of paddy farmer households. Household farming farming investment is significantly influenced by savings and education of paddy field farmers.

Keywords: *Household Farmers, Economic Production, Income, Household Spending On Farmers*

1. INTRODUCTION

Rice is a national food commodity of Indonesia, where most of Indonesia's population still consume rice as staple food of the household. As a staple food, the availability of rice is necessary. Food availability is determined by rice production. The increase of rice production is achieved by using its production factor. Production factors such as land, labor, rice seed, fertilizer and the use of pesticides for pest control. The process of rice production is one of the household economic activities of rice farmers.

The household economic activity of farmers includes simultaneous production and consumption activities. Household as a consumer aims to maximize utility, while as a manufacturer to maximize profits. These households are confronted by various resource constraints, so they have the option to allocate budgets for their household production and consumption expenditures.

In achieving the expected goals, households as consumers and producers should be able to make choices and make the right decisions in conducting their economic activities. The household economic activities of farmers include production activities and related assumptions. Decisions of farm households in production will be determined the allocation of working time of farm households in the farm. The allocation of working time of the farmer's household will determine the household's farming. Farm household income will affect household expenditures that include food and non-food expenditure. Food and non-food expenditure will determine the level of welfare of farm households.

Based on the description of this research, the problem is how the economic behavior of household rice farmers from the aspect of work time allocation, production and household consumption of rice farmers in district of Rokan Hulu Rambah Samo? Thus, this research aims to analyze the dominant factor affecting the decision of farmers with regard to production, the allocation of working time, household income and expenses farmers in district Rambah Samo Rokan Hulu.

2. METHODOLOGY

Research using survey method to get a description of the behavior of the household of rice farmers. The implementation of this research for six months starting the month of October 2016 untilMarch 2017. Location Research in the Subdistrict Rambah Samo Rokan Hulu. The determination of the location of the research on the basis that the Sub is one of food production centre and highest number of rice most household farming rice.

Sampling method is a method of multi stage random sampling taken from the village of New, Major Rambah Utama and Mulya. The number of samples taken for as much as 40 household rice farmers. The type of data collected is the data *of cross section* year 2016. The data obtained from direct interviews with the respondents, namely household rice farmersby using questionnaire that has been prepared.

The analysis of the This is the analysis of research data Econometrics simultaneous equations is done to answer the purpose research. Econometrics simultaneous equations Analysis has procedures, among other economic household model specification is the farmers ' rice identification of the model and estimation models. First, the specification of the model consists of equations that are related are grouped into four blocks, namely block: the production of grain, the allocation of time power the work consists in and outside of farming and use of labor outside the familyhousehold income and expenditure, farmers. The four blocks are interconnected to form the equation equation system. Specifications model rice farmer household economies are presented in the equation below.

1. $Q G_i = a_0 + a_1 LTPS_i + a_2 CKDU_i + a_3 TKLK_i + a_4 JBE_i + a_5 JPU_i + a_6 PONSCA_i + a_7 JPES_i + U_1$

    where:

    $Q G$ = production grain (kg/tin)
    $LTPS$ = rice acreage (hectares)
    $CKDU$ = work time allocation in rice farming (HKP/plots/year)
    $TKLK$ = use of labor outside the family (HKP/plots/year)
    $J BE$ = the amount of use of the seed (kg/plots/year)
    $JP U$ = the amount of fertilizer use (kg/plots/year)

JP ES = the amount of pesticide use (liters/plots/year)

The sign parameter expected allegations: $a_1, a_2, a_3, a_4, a_5, a_6 > 0$,

2. $CKD\ U_i = b_0 + b_1\ WLU_i + b_2\ TKLK_i + b_3\ BTK_i + b_4\ UP_i + U_2$

where:

CKDU = work time allocation of household farmers in rice farming (HKP/plots/year)

WLU = wages outside of farming (Rp/PPC)

TKLK = use of family labour force

BTK = labor cost (USD/year)

UP = age of farmers (years)

The sign parameter expected allegations: $b_2, b_3, b_4 > 0$ and $b_1 < 0$

3. $TKLK_{it} = c_0 + c_1 WLU_i + c_2 JBE_i + c_3 LTPS_i + c_4 UP_{the\ i} + c_5 IUP_i + U_3$

where:

WLU = wage farming rice (IDR/HKP)

JBE = number of seed grain (/kg/ arable)

LTPS = rice acreage (hectares)

TKLK = external labor family rice farmers (HKP/plots/year)

The sign parameter expected allegations: $c_1, c_3, c_4 > 0$ and $c_2, c_5 < 0$

4. $CKL\ U_{i0} = d + d_1\ CKDU_i + d_2 PPD + d_3 WLU_i + d_4 AKP_i + d_5 EP_i + d_6 SUIT_i + U_4$

where:

CKL U = work time allocation of family farmers outside of farming (HKP/year)

CKDU = work time allocation in farming (HKP/year)

PP D = outside farm wages (rupiah/year)

WLU = wages outside of farming (USD/year)

AKP = ape force rice farmers ' household (persons)

EP = farmer's education (years)

The sign parameter alleged expected: $d_1, d_3, d_4 > 0$ and $d_2 < 0$

5. $TTKP_i = CKD\ U_i + TKL\ K_i$

6. $TCKP_i = CKD\ U_i + CKL\ U_i$

where:

TCKP = total work time allocation of family farmers (hours/year)

7. $PPD_i = (HG_i * QG_i) - TBU_i$

where:

TBU = total cost of farming (rupiah/year)

HG = price grain (cents/kg)

8. $TBU_i = BP + B\ TK_i + BPU_i + B\ PES_i$

where:

BP = depreciation charges (rupiah/year)

B TK = the cost of wages (rupiah/year)

B Pu = the cost of fertilizer (dollars/kg)

B PES = other expenses (rupiah/year)

9. $PPL_{i0} = e + e_1 CKL\ U_i + e_2\ WLU_i + e_3\ UP_i + e_4 EP_i + e_5 EIP_i + e_6 PKP_i + U_5$

where:

P PL = income household farmers outside of farming (rupiah/year)

The sign parameter expected allegations: $e_1, e_3, e_4 > 0$ and $e_2\ ^1 0$

10. $PTP_i = PPD_i +_i + PPL\ PNKP_i$

where:

PTP = total household income of farmers (rupiah/year)

Non working income = PNKP farmer (rupiah/year)

11. $KPT_i = f_0 + f_1 PTP_i + f_2 JAK_i f +_3 EP_i + f_4 QG_i + f_5a\ SUIT_i +_ U_6$

where:

OPT = Expenses household food growers (rupiah/year)

P TP = total household income of farmers (rupiah/year)

JA K = the number of members of the family farmer household (person)

EP = farmer's wife's education (years)

QG = grain production (kg/year)

JAS = the number of school children (soul)

The sign parameter expected allegations: $f_1, f_2, > 0$ and $f_3 < 0$

12. $KSD_i = g_0 + g_1 PTP_i + g_2 JAS_i + g_3 TAB_i + g_4 KED_i + U_7$

13. $KED_i = h_0 + h_1 PTP_i + h_2 EP_i + h_3 COATS_i + h_4 TAB_i + U_8$

14. $KS_i = i_0 + i_1 PTP_i + i_2 JAK_i + i_3 UP_i + i_4 TAB_i + U_9$

where:

KSD = farmer household expenditure on clothing (rupiah/year)

KED household education spending = farmer (rupiah/year)

KS = farmer household health care spending (rupiah/year)

KR = farmer household recreation spending (rupiah/year)

JAS = number of school children (persons)

TAB = value of household savings of farmers (rupiah)

The sign parameter expected allegations: $g_1, g_2, h_1, i_1, i_2 > 0$ and $g_3, h_2, h_3, i_3 < 0$

15. $KR_i = j_0 + j_1 PTP_i + j_2 JAS_i + j_3 TAB_i U +_6 (3.19)$

where:

KR = farmer household recreation spending (rupiah/year)

The sign parameter expected allegations: $j_1 > 0$ and $j_2, j_3 < 0$

16. $KNP_i = KSD + KED + KS_i + KR_i$

where:

KNP = p expenses non household food growers (rupiah/year)

OPT = p food expenses total household farmers (rupiah/year)

KED = pthe educational expenses of peasant household (rupiah/year)

KS = household health expenditure of farmers (rupiah/year)

KPR = housing expenditure peasant household (rupiah/year)

17. KRP_i = Expenditure of household farmer recruitment (rupiah/year)

18. $IUP_i = k_0 + k_1 PTP_i + k_2 EP_i + k_3 QG_i + k_4 PKP_i + k_5 KNP_i + k_5 TABS_i + k_5 UP_i + k_6 JAS_i + U_7$

where:

IUP = investment of farming peasant household (rupiah/year)

The second procedure is the identification of the model. Identification of the model need to be conducted to determine method of estimation model. Formula identification model based on *order condition* is as follows:

$$(K - M)\ ^3 (G-1)$$

where:

K = number of variables in the model (endogenous variables and predeterminant variables

M = number of endogenous and exogenous variables are entered into the a specific equations in the model

G = number of equation (the number of endogenous variables).

Criteria for the identification of the model by using the order condition is stated as follows: (1) if K-M = G-1, then the equations in the model are expressed precisely identified

(*exactly identified*), (2) if K-M < G-1, then the equations in the model it says unidentified (*unidentified*), and (3) if K-M > G-1, then the equations in the model it says unidentified excess (*overidentified*).

Based on has i l household economic model identification, rice farmers in district Rambah Samo with number K is 41, M any equation at most 9 and G is 17. With the count in accordance with the equations of the models 1 to excessive identified (*overidentified*).

The third analytical procedure is to estimate the household economic model of paddy rice farmers. Estimation of the model using the method of Two Stages Least Square (2SLS). Prediction values of parameters in the model are performed by utilizing a computer program *Statistical Analysis System-Econometric Time Series* (SAS-ETS).

3. RESULT AND DISCUSSION

General Estimation of Estimation of Economic Model of Rice Farmer's Household Economy

The result of estimation of household economic model in this research is good enough as seen from the coefficient of determination (R^2) of each equation. The coefficient value of determination on farmer household economic model ranged from 0.5835 to 0.9959. The smallest value of R2 (below 0.60) is found in the farmer household investment equation. The smallest value of R2 (below 0.60) is found in the equation because the number of samples used is still small. However, in general the exogenous variables included in each equation in the farm household economic model are able to explain well its endogenous variables. For example, in Table 5.7 it can be seen that the value of the coefficient of determination on the rice production equation is 0.9959, it means the variation of exogenous variables (the area of paddy harvest, the allocation of working time in the farming family, the out-of-family labor, the number of seeds, ponsca and pesticide) are included in the equation able to explain the rice paddy production variables of 99.59 percent and the remaining 0.41 percent is explained by other factors not included in the equation

In addition to the R^2 as a measure of to define a model is said to be good statistically, also conducted a test of f. F Tests need to be done to show that the model is good at any of the equations. the F test statistic ilai are quite high (5.43 to 208.71) real and distinct on the real extent of 1 percent. This shows that the model of household economic decisions both rice growers on the real extent of 1 percent.

To test whether each exogenous variable is significantly different from zero to its endogenous variables, the t test statistic is used. In this study, the real level used to the tolerance limit of 30 percent. In other words, the real level above 30 percent is stated not significantly different from zero

Factors Affecting Household Economics of Rice Farmers

The household economy of paddy rice farmers includes the production and consumption activities carried out by the rice farmers' households simultaneously. In the production of household paddy rice farmers allocate their time in paddy field farming, resulting in income in the rice field farming. In addition, households of paddy rice farmers allocate their time to outside the rice field farming to earn income outside the farm. Thus, household income of paddy field farmers is supported by income in and outside the rice field farming. Household income is used by farmers to meet the needs of farm households. These needs consist of food, clothing, education, health and recreation needs. From this case, the

farmers household economy in this study consists of 11 structural equations that have been estimated. These 11 equations can be presented in Table 1.

Table 1. Prediction of parameters and equations of ElasticityStructural Parallels Rice Farmer Household Economies in Sub Rambah Samo

1. Production Equation

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	-960.58	0.0004	
Rice acreage	0.33	* < 0.0001	0.45
Work time allocation within the Business	2.15	0.78	
kindergarten outside the family	5.61	** 0.04	0.04
The number of seeds	187.67	* < 0.0001	0.67
Urea Fertilizer	178.30	0.94	
Ponsca Fertilizer	0.09	0.90	
Pesticides	-at 21	0.43	

$R^2 = 0.9959$ F-female = Prob 1102.93. F < = 0.0001 DW = 1.987

2. the allocation of working time in the household of the Rice Farmers

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	63.38	< *.0001	-
Wages beyond farming	-0.00069	< *.0001	-6.74
Labor outside the family	-1.01	< *.0001	-4.15
The total cost of labor	0.000014	< *.0001	8.80
Age farmers	-0.01	0.46	-

$R^2 = 0.9598$ F-female = 208.71 Prob. < F = 0.0001 DW = 2.611

3. use of Outside Labor family farmers

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	-41.9159	0.28	
The wages of farming	0.0005	0.27	
The number of seeds	0.69	0.48	
Rice acreage	0.0031	0.11	0.66
Farmer education	-0.22	0.64	
Investment of farming	3.98 E-07	0.13	0.10

$R^2 = 0.6764$ F-female = at 14 Prob > F = < 0.0001 DW = 2.35

4. the allocation of Time of work Outside the family Businessfarmer

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	-37.72	0716	-
Work time allocation within the business	-1.80	< *.0001	-0.008
The income of farmers in an effort	2.40 E-07	0.50	
Wages beyond the effort	0.00081	0.41	
Family labour force	at 12	0.15	0.60
Education farmer's wife	1.32	0.40	-
The number of school children	2.32	0.62	-

1. Production Equation

$R^2 = 0.6383$ F-female = 9.71 the Prob > F = 0.0001 DW = 1.75

5. Revenue Outside of farming Household Farmer Rice

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	-1.87 E + 07	0.06	-
The outpouring of work outside of farming	62814.39	< *. 0001	0.68
Wages beyond farming	125.22	0.19	2.71
Age of farmers	-187779	* 0.03	-1.97
Farmer education	233226.5	* 0.021	0.45
Education farmer's wife	42268.08	0.79	
The experience of farmers	-110224	0.18	-0.42

$R^2 = 0.6200$ F-female = 8.98 Prob > F = 0.0001 DW = 1.68

6. Household Food expenditure on Rice Farmers

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	-1.81 E + 07	< *. 0001	-
Income RT farmer	203298.40	< *. 0001	0605
The number of family members	1450471	** 0.02	0348
Farmer education	114996.30	0.32	
The Production Of Grain	2722.38	< *. 0001	0881
The number Of School Children	281784-	0.66	

$R^2 = 0.8276$ F-female = 32.65 Prob > F = < 0.0001 DW = 2.11

7. Household expenditure on Rice Farmers Clothing

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	-1426472	0.04	
Income RT farmer	180344.90	< *. 0001	0.53
The number of family members	353436.60	** 0.02	0.71
Savings	0046	* 0002	0.27
Spending on education	0.01	0.67	

$R^2 = 0.6308$ F-female = 14.95 Prob > F = < 0.0001 DW = 2.09

8. Household Education Spending Rice Farmers

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	-1838215	0.37	
Income RT farmer	206679.1	< *. 0001	0.64
Farmer education	149618.1	0.34	
The number of school children	86379.78	0.91	
Savings	0.20	* 0.01	0.29

$R^2 = 0.8339$ F-female = 43.94 Prob > F = < 0.0001 DW = 1.19

9. Household Health expenditure on Rice Farmers

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	-783275	0.12	-

1. Production Equation

Income RT farmer	170219.8	< *. 0001	0.50
The number of family members	128295	0.16	0.00000047
Age of farmers	10257.22	0.37	-
Savings	0.028946	* 0002	0.24
$R^2 = 0.6710$ F-female = 17.84 Prob > F = <0.0001 DW = 2.09			

10. Recreational Spending Household Rice Farmers

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	-4124228	0.02	
Income RT farmer	303374.1	< *. 0001	0.82
The number of school children	-802729	0.35	
Savings	0.23	* 0.001	0.35
$R^2 = 0.8885$ F-female = 95.70 Prob > F = <0.0001 DW = 1.74			

11. Investment of farming Household Farmer Rice

Variables	The Parameters Of The Alleged	Prob > |T|	Elasticity
Intercept	-1.35 E + 07	0.14	
Income RT farmer	0.331756	0.42	
Farmer education	796266.30	** 0.03	0.70
The production of grain	-405.28	0.83	
The experience of farmers	-264480	0.31	
The expenditure of the non food RT	-0.17	** 0.05	-0.50
Savings	0.40	* 0.004	0.56
Age of farmers	295751.60	0.30	
The number of school children	-682015	0.6042	
$R^2 = 0.5835$ F-female = 5.43 Prob > F = 0.0003 < DW = 1.89			

Table 1 can be explained that the area of wetland rice crops, the number of seeds and the use of outside working agriculture have a positive effect on rice production and significant at the level of 1 and 5 percent. This indicates if the area of wetland rice cultivation, the number of seeds and the use of external labor beyond the increased production of paddy rice will increase

The elasticity value of paddy field area, the number of seeds and the utilization of the out-of-farm workforce on paddy rice production were 0.45, 0.67 and 0.04, respectively. The value of elasticity of wetland rice planting area, the number of seeds and the use of non-responsive family farming. This means that the change of paddy field area, the number of seeds and the use of outside agriculture does not have a major impact on the change of paddy rice production. Although these elasticity values are unresponsive, wetland rice production is more sensitive to changes in the number of seeds than changes in the use of outside labor and the extent of wetland rice.

Table 1 can also be explained that the urea and ponsca fertilizers do not significantly affect the production and the value of the allegedly positive parameters. This means that the use of urea and ponsca fertilizers will increase production, but not significantly. This means that allegedly the fertilizer used by farmers is still not optimal so it needs to be added its use.

Meanwhile, pesticide showed no significant effect on production and the value of allegedly negative parameters. This means that the addition of pesticides will have a negative impact on production. Thus the use of pesticides by farmers has been excessive, so it should be reduced its use.

The allocation of labor time in farming by farm households is significantly influenced by outside wage farming and labor costs in the family, and negatively affected by the use of foreign workers and the age of farmers. Conversely, if the use of labor outside the family and the age of the farmer increases then the allocation of working time in the family of farmers will decrease. This indicates if the outside wage farming and labor costs in the family increased then the allocation of working time in the farm will increase. With the increased wages outside the farming system makes farmers more rational allocate their time for farming. Similarly, if the cost of labor in the family increases, then the farmer's household allocates more money for farming, because the higher the allocation of labor time in the farm will increase the non-cash income of the farm household (Table 1).

Table 1 shows the value elasticity of wages out of farming, the use of labor outside the family and the cost of labor in farming each of 6.74, 4.15 and 8.80. The value of elasticity 6.74 meaningful when wages outside of farming increases 10 percent then the allocation of working time in the family farmers will decrease of 67.4 percent. The great elasticity value of one will have an impact on the change in the allocation of working time in the family.

Table 1 shows the elasticity of off-farm wages, the use of off-farm labor and labor costs in farms of 6.74, 4.15 and 8.80, respectively. The value of elasticity of 6.74 means if the outside wage of farming increased 10 percent then the allocation of working time in the family of farmers will decrease by 67.4 percent. A large elasticity value of one will have a major impact on changes in the allocation of work time in the family.

The use of labor in positive and significant families is influenced by the area of wetland rice cultivation and farming investment. but the farm wages, the number of seeds and the education of the farmers did not significantly affect the use of labor outside the farming family. This indicates if the area of rice planting and farming investment is increased then the use of labor outside the farmer's family will increase. With a high planting area farmers need labor outside the family. Likewise, farming investments that are increasing in form of farmers can pay wages outside the family.

Based On Table 1 work time allocation is expressed in farming significantly negative effect against the allocation of working out family farmers at his level of 1 percent. This indicates an increase in the allocation of working time in farming will lower the allocation of work outside of farming. Instead, the work force significantly influential positive family farmers against the allocation of working out family farmers at his level of 15 percent. This shows the increase in the labor force will improve the allocation of farm families work outside of farming.

The value of elasticity of rice planting area and farming investment on the use of outside agriculture of farmers are 0.66 and 0.10, respectively. The value of elasticity 0.66 means that if the area of rice planting is increased by 10 percent then the use of labor outside the farming family will increase by 6.6 percent. Similarly, with the value of elasticity of 0.10 has a meaning if the farming investment increased by 10 percent then the use of labor outside the farmer's family will increase by 1 percent. Based on the value of elasticity, the change of paddy field cultivation area and farming investment is not responsive to changes in the use of outside working families, so the change of these two variables gives little impact to the changes of the use of outside working families. However, changes in wetland rice planting are more sensitive than farming investment to changes in the use of out-of-farm work.

Outside income of farm household farming positive and significant rice paddy is influenced by the allocation of outside labor farming, farmer education and outside wage farming at the real level 1 and 20 percent. However, the age of farmers negatively affect farmers' income outside and significant at 1 percent level. This means that if the age of older farmers will cause income outside the farm will decrease. It can be understood because the older the farmer it will be hard to get a job outside the farm, because the productivity has decreased so that outside income farming decreased. The higher the farmers 'education the farmers' household income outside farming increases, as farmers have opportunities in the labor market to work outside their farms (Table 1).

The value of the elasticity of wages out of farming and farmers aged respectively amounting to 2.71 and 1.97 percent. The value of the elasticity of 2.71 percent means in wages beyond farming increased by 10 percent beyond the farming income will then increase by 27.10 percent. Otherwise, the value of the elasticity of 1.97 percent means in the age of farmers increased by 10 percent beyond the farming income would then declined by 19.7 percent. This means changes to wages outside of farming and farmers are responsive to the changing age income outside of farming household farmer paddy rice fields. The value of elasticity elasticity of the outpouring of work outside of farming and farmers ' education of 0.68 and 0.45 percent. The value of the elasticity of the outpouring of work outside of farming is more sensitive to changes outside of farming income of farmer education. Thus changes in the allocation of work outside of farming household farmer responsive to changes in the income of farmers out of farming of farmers ' education.

Table 1 can be explained that household expenditure of farmers, both food expenditure, clothing, education, health and recreation are significant and positively influenced by household income at the level of 1 percent confidence. This shows that the higher household income, the higher the household expenditure, both food expenditure, clothing, education, health and recreation. The value of household income elasticity on food, clothing, education, health and recreation expenditure ranges from 0.50 to 0.82 percent. The highest elasticity value is the value of household income elasticity to recreation expenditure, which is 0.82 percent. The value is significant if household income increased 10 percent then recreation expenditure will increase by 8.2 percent.

In addition to household income, savings variables have a positive and significant impact on clothing, education, health, recreation and farming investment expenditures. This means that savings are needed by households to meet household expenditures. The value of saving elasticity on clothing, education, health, recreational and farming investment expenditure ranges from 0.24 to 0.35 percent. The value of elasticity of 0.35 is significant if household saving increases by 10 percent then the expense of recreation will increase by 3.5 percent.

The number of significant and positive family members affected the expenditure of food, clothing and health of paddy farmer households. This indicates that the more members of the family the greater the food expenditure, the health clothing. The elasticity the number of family members to clothing is 0.71 percent, higher than the others. This means that if the number of family members increased by 10 percent then clothing will increase by 7.1 percent.

Table 1 shows that farm households 'farming investment is positively influenced by the value of farmers' savings and education and is significant at the level of 1 and 5 percent. This shows the higher the value of savings and education of farmers will lead to increased farm households farming investment. In contrast, non-food farm households have a negative and significant impact on farm households farming investment at a real 5 percent. This indicates that an increase in non-food expenditure led to a decrease in household farming farming

investment. This fact is clear that farmers invest in farming if they have fulfilled non-food needs, such as clothing, education, health and recreation.

The elasticity of education of farmers is 0.70. This means that if the education of farmers increased by 1 percent, the farm household farming investment increased by 0.70 percent. While the value of elasticity of non-food household expenditure of farmers and savings accounted for 0.50 percent respectively, meaning that if the non-food expenditure increased 1 percent, the farm households household investment investment decreased by 0.80 percent. The elasticity of household non-food household expenditure and savings is less than the value of farmer education elasticity. This means that farmers' education is more sensitive to changes in household farming farming investment than non-food expenditure and savings responsive to changes in non-food consumption expenditure. Meanwhile, the elasticity of non-food expenditure on education, clothing and recreation expenditure is less than 1. This means that changes in education, clothing and recreation expenditures are unresponsive to changes in non-food expenditure.

4. CONCLUSION

Based on the discussion that has been described in the previous chapter and refers to the purpose of research it can be formulated the following conclusions:

1. Positive and significant grain Production is affected by internal and external factors. Internal factors such as acreage and the number of seeds of rice While external factors like the use of labor outside of the family.
2. The allocation of working time in farming families is significantly influenced by internal and external factors. Internal factors of households of paddy farmers such as labor costs in farming, and external factors such as outside wages and the use of manpower.
3. The use of labor outside the farming family is significantly influenced by internal factors of paddy farmer households, such as the area of wetland rice cultivation and farming investment. While external factors such as outside wage farming does not significantly affect the use of labor outside the farmer's family.
4. The allocation of off-farm work time is influenced by internal factors of farm households such as the allocation of labor time in farming and the labor force of the farming family. While internal factors such as outside wage farming does not significantly affect the allocation of working time outside the farm.
5. Significant internal factors affecting off-farm income is the allocation of off-farm work time and farmer education. External factors that significantly affect farmers' income outside of farming are outside farming wages.
6. Significant internal factors affecting household food expenditure of paddy rice farmers are household income of farmers, number of family members of farmers and grain production.
7. Significant internal factors affecting non-food household expenditure of paddy rice farmers are household income of farmers, number of family member of farmers and value of household saving of paddy farmer.
8. Significant agricultural investment is influenced by internal factors such as farmer education, non-food expenditure and savings value.
9. Responsive internal factors are the cost of labor in the family. And responsive external factors are outsourced wages and use of outside labor.

Policy Implications:

1. Increasing rice production is very necessary in order to maintain national rice food security. Therefore, local governments need to improve irrigation, because irrigation is very important for increasing rice production.

2. Farmers' education in general is low and farmer education influences farmers in production decisions and determines household expenditure. Therefore, it is necessary to informal education for farmers in the form of training and assistance in order to increase farmer's income.

3. The household income of farmers consisted mainly of income in paddy field farming and significantly affecting household expenditure of farmers. Therefore, it is necessary for the government role in determining the stable price of grain that can encourage farmers to continue to produce.

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