

Analysis of Social Capital and Income of Gapoktan Tunas Muda in Padang, West Sumatra

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Abstract

The purpose of this research is to: 1) analyze social capital and income' 2) the effect of social capital on the income of lowland rice farming members of Gapoktan Tunas Muda, Kampung Jua Nan XX Village, Lubuk Begalung District, Padang City. The research was conducted from February to March 2021. The population was all farmers who were working on paddy rice farming and were members of the Young Tunas Farmers Association with the criteria for farming during the November 2020-March 2021 Planting Season. Based on these criteria there were 116 people. Sampling method using census. Qualitative data analysis method for social capital and measured using a Likert scale. To analyze the effect of social capital on farm income, econometric analysis is used with multiple linear regression approach with cross section data. The research results show: 1) All variables of social capital are in the high category with an average value of social capital variables of 3.91 and the income earned by respondents is IDR. 15,754,135.43/ha/MT with an R/C ratio of 2.20; 2) The results of the F test show that all independent variables have a significant effect on income and the results of the t test show that the variables of trust (X1), participation (X2), social norms (X3), and network (X4) have a significant effect on income.

Keywords: Social Capital, Farmer's Income, Analysis.

INTRODUCTION

The agricultural sector is a mainstay for improving the welfare of some Indonesian people because most Indonesian people live in rural areas and work in the agricultural sector (Saragih, 2010; Supratikno et al., 2023; Saleh et al., 2021). One of the agricultural sub-sectors that plays an important role in Indonesia is the food crops sub-sector with rice as the staple crop that has long been known to people. Nearly half of the world's population depends on rice. Rice is so important that crop

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failure can cause widespread famine and death (Harahap & Tjahjono, 2003; Antara et al., 2023; Katiandagho, 2021).

West Sumatra Province as one of the provinces that represents food crop agriculture as one of the main economic sectors of the province. The large role of agriculture, especially food crops, is due to the high rice production in West Sumatra. The level of rice production, harvested area and productivity of paddy rice in Indonesia and West Sumatra Province in the 2016-2020 period can be seen in Table 1 (BPS, 2016-2021).

Table 1. Rice Production, Harvested Area and Productivity in Indonesia and West Sumatra Province in the 2016-2020 Period

No.	Year	Production (Ton)		Harvested Area (Ha)		Productivity (Ton/Ha)	
		Indonesia	West Sumatra	Indonesia	West Sumatra	Indonesia	West Sumatra
1	2016	75,483,000	2,503,452	13,985,000	486,570	5.397	5.113
2	2017	77,294,000	2,773,478	14,542,000	533,398	5.315	5.269
3	2018	59,200,533	1,483,076	11,377,934	313,051	5.203	4.737
4	2019	54,604,033	1,482,996	10,677,887	311,671	5.114	4.758
5	2020	54,649,202	1,387,269	10,657,275	295,664	5.128	4.692

Source: Central Bureau of Statistics, 2016-2021

Paddy production in Indonesia and West Sumatra Province fluctuates every year, where the highest production was in the last 5 years, namely in 2017. However, it is different from the conditions in the city of Padang, namely that even though there are fluctuations in both production and productivity, this shows that food crop agriculture, specifically paddy rice, appears to have high productivity when compared to West Sumatra Province and at the national level. For more details on production, harvested area and productivity of paddy rice in Padang City in the period 2016-2020 can be seen in Table 2.

Table 2. Production, Harvested Area and Rice Productivity of Padang City in 2016-2020

No.	Year	Production (Ton)	Harvested Area (Ha)	Rice Productivity (Ton/Ha)
1	2016	90,645	16,594	5.463
2	2017	99,018	17,826	5.550
3	2018	56,267	12,047	4.671
4	2019	62,877	12,542	5.013
5	2020	48,462	10,657	4.548

Source: Central Bureau of Statistics, 2016-2021

The ability of the agricultural sector, especially lowland rice plants to contribute directly to economic growth and the welfare of lowland rice farming households depends on the income level of lowland rice farming and the surplus generated by the sector itself. Thus, in addition to being a major determinant of the welfare of farmer households, the level of farm income also appears as one of the important factors that condition economic growth (Soekartawi, 2003; Ginting, 2020; Susriani et al., 2023), so that in this case the income

level of farmers must be increased in order to encourage an increase in the standard of living and welfare of farmers (Hernanto, 2005; Batoa et al., 2023; Ouattara et al., 2022).

Human welfare is influenced by three things, namely: (1) natural capital, (2) physical capital and (3) human capital and social capital. If human capital represents knowledge, skills and health, then social capital refers to norms and networks that facilitate cooperation between people within groups and between groups (Central Bureau of Statistics, 2012). Social Capital in a community, organization, or group is an accumulation of individual capital which is then combined into collective capital that can be utilized by all members of the community (Permadi, 2002); utilized in an effort to increase farmers' income (Lulun et al., 2019; Gunadi, 2021; Rosana & Arbi, 2020).

One of the conditions faced by farmers, especially for food crop commodities, is low productivity (Supadi & Sumedi, 2004; Batoa et al., 2023). The city of Padang is interesting to be the object of research. This is because the City of Padang in 2017 had a harvested area of 17,826 ha of paddy rice with a production of 99,018 tons so that the productivity value of paddy fields was 5,550 tons per hectare which was above the average productivity of lowland rice plants in West Sumatra Province, which was 5,269 tons per hectare and nationally 5.315 tons per hectare (Central Bureau of Statistics, 2018). Kampung Jua Nan XX Village is one of the villages in Lubuk Begalung District, Padang City. The farmers in this sub-district are members of the Gapoktan (Association of Farmers Groups) Tunas Muda which produces paddy rice and other young plants. In an effort to increase paddy rice production, they made use of the Lubuak Laweh irrigation canal, which had limited water, so through Gapoktan they agreed to take turns in cultivating paddy rice. In addition to efforts that are technical in nature, the efforts made also aim at a participatory approach to development and strengthening as well as a partnership strategy.

Efforts to increase farmer productivity can be done by increasing capital. The important role of capital can help increase agricultural productivity, but not many people recognize that increasing human capital and social capital increases productivity (Mubyarto, 1986; Fadila et al., 2022). The high value of social capital owned by an area can help farmers in terms of production, distribution and innovation (Sawitri & Soepriadi, 2014; Taridala et al., 2019; Azumah et al., 2022). For example, if a farmer joins a farmer group, then when the farmer group has plow equipment for the benefit of the group, the farmer can use the plow equipment rent for other purposes, this implies that social capital can reduce fixed costs. Not only that, social capital which is marked by the large number of farmer groups in rural areas will be useful for more quickly channeling the aspirations of farmers to the government (Mamiit et al., 2021; Oktarina et al., 2022; Saleh et al., 2021).

The purpose of this research is to 1) analyze social capital and income; 2) Analyzing the effect of social capital on the income of lowland

rice farming members of Gapoktan Tunas Muda, Kampung Jua Nan XX Village, Lubuk Begalung District, Padang City.

METHOD

The research method used in this study is a qualitative and quantitative descriptive analysis method. This research was conducted on a combination of farmer groups (Gapoktan) in Kampung Jua Nan XX Village, Padang City. This research was conducted from February to March 2021. The population is the entire object of research (Arikunto, 1998); the entire number of individuals from the area to be studied (Kartono, 1980); consisting of humans, objects, animals, plants, symptoms, test scores, or events as data sources that have certain characteristics in a study (Nawawi, 1998). Based on this opinion, the population in this study are all farmers who cultivate paddy rice in Kampung Jua Nan XX Village, Lubuk Begalung District, Padang City with the criteria for cultivating paddy rice in the November 2020 - March 2021 Planting Season and are members of Gapoktan Tunas Muda. Based on these criteria there are 116 people. Sampling method using total sampling, or saturated samples. Saturated sample is all members of the population sampled. Sources and types of data used in this study consisted of primary data and secondary data. Data collection methods in this study are interviews, observation, and documentation.

Methods of data analysis to answer research objectives to analyze farm income used descriptive method with the observed variables: production, costs and income of farming. Then to analyze the effect of social capital on farmers' income, data on social capital sub-variables is required using a Likert Scale (Sarwono, 2006). Then a variable trend table is made, this is done to categorize the scores obtained from each variable using the mean and standard deviation. Determination of variable needs based on grouping on ranking, with the following provisions (see Table 3).

Table 3. Categorization of Respondents' Answers

No	Interval	Category
1	$X \geq (Mi + 1,5SDi)$	Very high
2	$(Mi + 0,5SDi) \leq X < (Mi + 1,5SDi)$	High
3	$(Mi - 0,5SDi) \leq X < (Mi + 0,5SDi)$	Medium
4	$(Mi - 1,5SDi) \leq X < (Mi - 0,5SDi)$	Low
5	$X < (Mi - 1,5SDi)$	Very Low

Where:

$$Mi = \frac{1}{2} (\text{Max score} + \text{min score})$$

$$SDi = \frac{1}{6} (\text{Max score} - \text{min score})$$

Information:

$$X = \text{Average count}$$

$$SDi = \text{The ideal standard deviation}$$

$$Mi = \text{Ideal average (Anas Sudiyono, 2012)}$$

By using the table of categories of respondents' answers above, the categories of tendencies of social capital variables are obtained which are divided into 5 categories with the following conditions:

- 1) Very high $= X \geq Mi + 1,5 Sdi$
 $= 3 + 1,5 * 0,67$
 $= \geq 4,01$
- 2) High $= Mi + 0,5 Sdi \leq X < Mi + 1,5 Sdi$
 $= 3 + 0,5 * 0,67 \leq X < 3 + 1,5 * 0,67$
 $= 3,34 \leq X < 4,01$
- 3) Medium $= Mi - 0,5 Sdi \leq X < Mi + 0,5 Sdi$
 $= 3 - 0,5 * 0,67 \leq X < 3 + 0,5 * 0,67$
 $= 2,67 \leq X < 3,34$
- 4) Low $= Mi - 1,5 Sdi \leq X < Mi - 0,5 Sdi$
 $= 3 - 1,5 * 0,67 \leq X < 3 - 0,5 * 0,67$
 $= 2 \leq X < 2,67$
- 5) Very Low $= X < Mi - 1,5 Sdi$
 $= < 3 - 1,5 * 0,67$
 $= X < 2$

Furthermore, to analyze the effect of social capital on rice farming income used econometric analysis with multiple linear regression approach with cross section data. For the equation is as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

Y = Farm income

X₁ = Trust

X₂ = Participation

X₃ = Social norms

X₄ = Network

Before the model that has been obtained is determined as a model of the income function, tests are carried out to meet the criteria for testing the assumption of multiple linear regression with the multicollinearity test, the Variance Inflation Factor (VIF) value for each variable has a value of < 10 and a Tolerance value of > 0.1; normality test, the data distribution spreads around the diagonal line and the distribution follows that line and the heteroscedasticity test, the data is spread out without forming a certain pattern (Gozali, 2007).

RESULTS AND DISCUSSION

Social Capital Analysis

There are four elements of social capital, namely trust, participation, social norms and networks. Each will be described based on the respondents' answers, namely rice farmers at Gapoktan Tunas Muda. The results of social capital analysis based on the trend category of social capital variables can be seen in the following:

Table 4. Social Capital of Rice Paddy Respondents in Gapoktan Tunas Muda in 2021

Social Capital	Variable	Mean	Category
	Trust	3.96	High
	Participation	3.91	High
	Social norms	3.81	High
	Network	3.95	High
	Total	15.63	-
	Average	3.91	High

Source: Primary data processed, 2021

Based on Table 4. it can be seen that all social capital variables are in the high category with an average value of social capital variables of 3.91. This condition shows that the lowland rice farmers in Gapoktan Tunas Muda have implemented elements of social capital that can help smooth their farming. The results of this study are in line with Lulun *et.al* statement (2019) that social capital is an important capital that can be utilized in an effort to increase farmer income.

a. Trust

From Table 5. it can be stated that the tendency of the lowland rice farmers' trust variable in Gapoktan Tunas Muda is in the high category of 111 people (95.69%).

Table 5. Confidence Variable Categories

No	Score	Frequency	Percentage	Category
1	≥4.01	46	39.66	Very high
2	3.34 – 4.00	65	56.03	High
3	2.67 - 3.33	5	4.31	Medium
4	2.00 – 2.66	0	0.00	Low
5	< 2.00	0	0.00	Very Low
	Total	116	100.00	

Source: Primary Data Processed, 2021

Based on Table 5, it illustrates that with mutual trust in social relations based on a feeling of confidence that the other will do something as expected and will always act in a mutually supportive pattern of action.

Trust or belief is at the heart of social interaction and is an important thing in everyday life (Fukuyama, 1997). This condition illustrates that each farmer has a very high sense of belief in spiritual nature as outlined in the context of helping one another, this is indicated by the positive attitude reflected by each farmer, such as in the activity of borrowing and borrowing agricultural equipment. Likewise Rao (2001) states that mutual trust plays an important role in building a healthy market economy. In line with this research where farmers believe that their crops are entrusted to other farmers to be sold to the market/middleman. The Tunas Muda Gapoktan is also able to provide solutions or alleviate the problems being faced, such as between Gapoktan administrators and farmers who have good synergy

resulting from closeness to each other so that they can increase farming production.

b. Participation

From Table 6. it can be concluded that the tendency of the variable participation of paddy rice farmers in Gapoktan Tunas Muda is in the high category of 104 people (89.66%).

Table 6. Participation Variable Categories

No	Score	Frequency	Percentage	Category
1	≥ 4.01	41	35.34	Very high
2	3.34 - 4.00	63	54.31	High
3	2.67 - 3.33	12	10.34	Medium
4	2,00 - 2.66	0	0.00	Low
5	< 2.00	0	0.00	Very Low
Total		116	100.00	

Source: Primary Data Processed, 2021

Participation in meeting activities held by Gapoktan Tunas Muda management and agricultural extension officers shows that farmers feel the need to carry out social interactions in which ideas, knowledge and information are exchanged and formulate ways to find solutions to a problem that is being experienced by the group and can become an innovation. This is because in the participation of all group members have an obligation to contribute to the welfare of the group. According to the respondent farmers, each member of the group was given the same treatment and did not regard differences from one another. This opinion is in line with Hasbullah (2006), defines participation as the ability of group members or community members to unite themselves in a relationship pattern. Participation is one of the elements of social capital that can determine the social capital of a group.

c. Social norms

From Table 7. it can be concluded that the tendency of the social norm variable of paddy rice farmers in the Gapoktan Tunas Muda is in the high category of 91 people (78.45%)

Table 7. Social Norms Variable Categories

No	Score	Frequency	Percentage	Category
1	≥ 4.01	23	19.83	Very high
2	3.34 - 4.00	68	58.62	High
3	2.67 - 3.33	25	21.55	Medium
4	2.00 - 2.66	0	0.00	Low
5	< 2.00	0	0.00	Very Low
Total		116	100.00	

Source: Primary Data Processed, 2021

The social life of paddy rice farmers at Gapoktan Tunas Muda has implemented social norms well, which simply means that these are behavioral guidelines that originate from which values are good and which are bad. Fukuyama (1997), Houshyar et al. (2019) and Rado et al., (2021) states social capital as an informal norm that is instantaneous and can build cooperation between two or more individuals. In addition, the application of sanctions within the group has also been carried out in accordance with the group's agreement,

which is evidenced in the indicator points which state that farmers are willing to pay loans lent by farmer groups in a timely manner and pay dues for the needs of farmer groups. The same thing was expressed by Priyono (2012), Hlaing et al. (2021) and Umar et al. (2020) that norms are rules that have become habits and are institutionalized based on mutual agreement, understanding the values of norms will create a harmonious and peaceful community so that activities or businesses that are carried out can run well.

d. Network

From Table 8, it can be concluded that the tendency of the lowland rice farmer network variable in the Young Tunas Gapoktan is in the high category of 113 people (97.41%).

Table 8. Network Variable Categories

No	Score	Frequency	Percentage	Category
1	≥ 4.01	38	32.76	Very high
2	3.34 - 4.00	75	64.66	High
3	2.67 - 3.33	3	2.59	Medium
4	2.00 - 2.66	0	0.00	Low
5	< 2.00	0	0.00	Very Low
Total		116	100,00	

Source: Primary Data Processed, 2021

The social life of paddy rice farmers in Gapoktan Tunas Muda has implemented a good network. Putnam, (1993) states that networks as part of social capital can provide benefits in the context of forming collective cooperation in dealing with and solving problems with communities that will strengthen their bargaining position against structural forces, such as markets, management of shared resources, because it facilitates coordination and cooperation for mutual benefit.

Farmers in Gapoktan Tunas Muda coordinate farming activities, meaning that farmers trust information from other farmers to apply in their respective farms so that the network formed has mutual benefits. This is due to the network that is built, farmers not only get solutions to marketing problems, but also cooperation that is built with the Department of Agriculture which contributes to farmers' income, namely farming technology such as tractors which can increase the production of farmers involved in farmer groups.

Lowland Rice Farming Income Revenue and Profit Analysis

Farming income is defined as the product of the product obtained by the selling price at the farm level, so that the income is directly proportional to the production and price, the greater the production produced and the high selling price, the greater the income obtained, and vice versa if the production and selling price is low, the acceptance will also be lower.

The average production obtained by the respondent farmers at Gapoktan Tunas Muda was 2,967.41 Kg/0.69ha/MT with an average selling price at the farm level of IDR 5,546.91/Kg so that the average income received by the respondent farmers was IDR

16,466,074.07/0.69ha/MT. When converted to 1 hectare, the resulting production is 4,273.07 Kg, the farmer's income is IDR 23,711,146.67/ha/MT. For more details can be seen in Table 9.

Income analysis in this study was used to determine the amount of income earned by paddy rice farming respondents at Gapoktan Tunas Muda by calculating the difference between total revenue and total cash costs incurred during one growing season.

Table 9. Analysis of Gapoktan Tunas Muda Paddy Farming Income (IDR/Ha/MT)

Description	Physical Amount (Kg)	Unit price (IDR/Kg)	Value (IDR)
Cash Acceptance	4.284,85	5.547,41	23,777,436,28
Total Cash Charges			8,023,300,85
Total Non-Cash Costs			2,806,684,16
Total cost			10,829,985,01
Income			15,754,135,43
Profit			12,947,451,27
R/C on Cash Charges			2,96
R/C on Total Cost			2,20

Source: Primary Data Processed, 2021

Based on Table 9. it shows that the average farmer income is IDR 23,777,436.28/ha/MT with a cash cost of IDR 8,023,300.85/ha/MT and non-cash costs IDR 2,806,684.16/ha/MT so that the total cost of IDR 10,829,985.01/ha/MT, the income earned by paddy rice farmer respondents was IDR 15,754,135.43/ha/MT and the profit earned was IDR 12,947,451.27/ha/MT. This income is lower when compared to research that has been conducted by Chaerani (2020) which examines the Efficiency of Paddy Rice Farming System Jajar Legowo 4: 1 Planting System with Non Jajar Legowo at Gapoktan Batu Gadang Together with Batu Gadang Village, Lubuk Kilangan District, Padang City who earn income Rp.18,272,789.86 for the Jarwo 4:1 system; but higher when compared to the non-Jarwo system, which is IDR 13,294,379.08.

To determine the feasibility of lowland rice farming, the Revenue Cost Of Ratio (R/C) can be used. The results of the analysis show that lowland rice farming at Gapoktan Tunas Muda is feasible, this can be proven by the R/C value for cash costs of 2.96 and R/C for total costs of 2.20, which means that if farming costs are incurred Rp. 1. 000.00, the farmer will receive revenue of IDR 2,960.00 for cash costs and IDR 2,200.00 for total costs. This opinion is supported by Soekartawi (2006) which states that farming can be said to be efficient if the R/C ratio is > 1.

The Influence of Social Capital on Paddy Rice Farming Income

Analysis to determine the effect of social capital on rice farming income using multiple linear regression analysis. The dependent variable is income (Y), while the independent variables are trust (X₁), participation (X₂), social norms (X₃), and network (X₄).

Before the model that has been obtained is determined as a model of the income function, testing is carried out to meet the test criteria for the assumption of multiple linear regression.

From the results of the multicollinearity test, the Variance Inflation Factor (VIF) value for each variable has a value of <10 and a Tolerance value of > 0.1 . Based on the results of the normality test, the distribution of the data spreads around the diagonal line and follows the line. From these results it can be concluded that the regression model used meets the normality assumption. From the results of the heteroscedasticity test, the data are scattered without forming a specific pattern, thus it can be concluded that the assumption of heteroscedasticity is met.

Analysis of the effect of social capital on the income of paddy rice farmer respondents was carried out using multiple linear regression equations and the results of the analysis can be seen in Table 10, Table 11, and Table 12.

Table 10. Multiple Linear Regression Results (Coefficient of Determination)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.896 ^a	.802	.795	3.23365E6	1.844

a. Predictors: (Constant), Networks, Social Norms, Participation, Trust

b. Dependent Variable: Income

Based on Table 10, the coefficient of determination is 0.795; meaning that 79.50% of the variation in the income of farmer respondents can be explained by the independent variables of trust (X_1), participation (X_2), social norms (X_3), and network (X_4), while the rest (20.50%) is explained by variables outside the equation.

Simultaneous testing using the F test shows that the variables of trust (X_1), participation (X_2), social norms (X_3), and network (X_4) have a significant effect on the income of paddy rice farming respondents (See Table 11).

Table 11. Multiple Linear Regression Model F Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	4.707E15	4	1.177E15	112.548	.000 ^a
Residual	1.161E15	111	1.046E13		
Total	5.868E15	115			

a. Predictors: (Constant), Network, Social Norms, Participation, Trust

b. Dependent Variable: Income

Based on Table 11, the F-count value is 112.548 with a significant level of 0.000 indicating that all independent variables together have a significant effect on the income of paddy rice farmer respondents.

Partial testing using the t test shows that the variables of trust (X_1), participation (X_2), social norms (X_3), and network (X_4) have a significant effect on the income of paddy rice farming respondents and

have a significant effect on the income of paddy rice farming respondents (See Table 12).

Table 12. Multiple Linear Regression t Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-5.135E7	3.281E6		-15.650	.000		
Trust	-4.543E6	1.517E6	-.250	-2.994	.003	.255	3.925
Participation	7.435E6	1.258E6	.468	5.911	.000	.284	3.518
Social Norms	2.391E6	984608.914	.165	2.428	.017	.388	2.576
Network	1.060E7	1.560E6	.557	6.799	.000	.265	3.770

a. Dependent Variable: INCOME

Based on Table 12, the income equation (Y) and social capital that influence it, namely the variables of trust (X₁), participation (X₂), social norms (X₃), and network (X₄) have a significant effect on the income of paddy rice farming respondents, written as follows: $Y = -51,350,000 - 4,543,000X_1 + 7,435,000X_2 + 2,391,000X_3 + 10,600,000X_4$

A constant of -51,350,000.00 means that if the variable trust (X₁), participation (X₂), norm (X₃) and network (X₄) = 0, then the income of paddy rice farming at Gapoktan Tunas Muda decreases by 51,350,000.00 units.

The regression coefficient of the trust variable (X₁) is -384,600.59 with a significance of 0.003. The regression coefficient value is negative, which means that there is a negative relationship between the trust variable and income. This shows that for every addition of 1 unit of trust, it will reduce the income of paddy rice farming by 4,543,000 units. The trust variable has a significance value of 0.003 which is certainly smaller than 0.05, this means that individually the trust variable has a significant effect on the income of paddy rice farming. In fact, the strength of a high level of trust can shape the trust that exists in a farmer group. Collective action based on mutual trust will increase farmer participation in various forms of activity. This is in accordance with the opinion of Coleman (2009) which states that there are two parties to trust, namely the trustor (who believes) and the trustee (who is trusted) with the assumption that both of them have a goal, namely having a goal to fulfill their interests, whatever that may be. Because each actor has a goal, and trying to explain the actions of each actor is very important in understanding the goals that an actor might have in various situations.

The participation variable has a regression coefficient of 7,435,000. The regression coefficient value is positive, which means that there is a positive relationship between the participation variable and income. This shows that for every addition of 1 unit of participation variable, it will increase the income of paddy rice farming by 7,435,000 units. The participation variable has a significance value of 0.000 which is certainly smaller than 0.05. This means that individually the participation variable has a significant effect on the income of paddy

rice farming. Mubyarto (1987) revealed participation as a willingness to help the success of each program according to everyone's ability without sacrificing one's own interests. This opinion is in line with Hasbullah (2006) which states that one of the keys to success in building productivity levels is to build participation in an organization or association by involving oneself in a social network relationship.

Partially the influence of social norms on farmers' income is obtained by a regression coefficient of 2,391,000. The value of the regression coefficient is positive, which means that there is a positive relationship between social norms and income. This shows that for every addition of one unit of social norms variable, it will increase the income of paddy rice farming by 2,391,000 units. The social norm variable has a significance value of 0.017 which is certainly smaller than 0.05. The research results show that norms can affect income. Norm compliance can be seen from the level of adherence to the norms that apply within the group. Rules made by members of the group include rules for farmer participation in regular meetings, rules for using loans, rules for paying contributions for group needs, rules for implementing suggestions conveyed in meeting forum decisions, and rules for participating in other events held by Gapoktan Tunas Muda. These results are in line with the opinion of Fukuyama (2002) which states that the norms that shape social capital can vary from reciprocal relationships between two people to complex relationships. Norms that are shared will strengthen social bonds between individuals and can strengthen cooperation in the process of improving the production process.

The network partially has a significant effect on farmers' income by obtaining a regression coefficient of 10,600,000. The network variable has a significance value of 0.000 which is certainly less than 0.05. This means that individually the network variables have a significant effect on the income of paddy rice farming. The results of this study indicate that the network can affect farmers' income. The cooperation network between groups and with other parties in accessing information, the cooperation network in paddy rice farming activities, and the cooperation network in product marketing are the networks formed in Gapoktan Tunas Muda showing that farmers are able to involve themselves in social networks so as to create close and easy relationships in getting information (Connor et al., 2021; Laishram et al., 2020).

The network facilitates social interaction between individuals and groups in collaboration. Social interaction will lead to the establishment of social relations that encourage the development of information networks and cooperation. Lowland rice farmers at Gapoktan Tunas Muda not only work together with fellow members but they have good cooperation with other farmers from different regions. Group cooperation with the Department of Agriculture is generally dominated by core administrators rather than group members. While the cooperation built by farmer groups at the research location with other

farmer groups relates to important information relating to technical aspects in the field. This is in accordance with the opinion of Putnam (2000) which states that an extensive network is a very important aspect for obtaining information. It is easy and difficult for someone to get information from the many networks they have. The more mastery of information, the more productive (Dahya et al., 2023; Tsuchiya et al., 2021).

The results of the F test study showed that at a significance level of 5%, it was known that $F_{count} = 77.490 > F_{table} = 2.725$ with a significance value of 0.000 less than 0.05. It was concluded that network, trust, participation, and social norms together had a significant effect on income. The higher the trust, participation, social norms and networks, the higher the income. Conversely, the lower the trust, participation, social norms, and networks, the lower the farmer's income. The results of this study are in line with the results of Lulun et al. (2019) which states that simultaneously the variables of trust, values, norms, networks and participation have a significant effect on the level of income of farmers in Waiheru Village.

CONCLUSION

All variables of social capital are in the high category with an average value of social capital variables of 3.91. This condition shows that the lowland rice farmers in Gapoktan Tunas Muda have implemented elements of social capital that can help smooth their farming. The income earned by the respondents was IDR 15,754,135.43/ha/MT with an R/C ratio of 2.20. The results of the F test show that all independent variables have a significant effect on the income of the respondents. The results of the t test show that the variables of trust (X_1), participation (X_2), social norms (X_3), and network (X_4) have a significant effect on the income of respondents.

REFERENCES

- Anas, S. (2012). *Introduction to Educational Statistics*. Jakarta: Rajawali Press.
- Antara, M., Lamusa, A., Laksmayani, M. K., Tangkesalu, D., & Imran, E. (2023). Income Diversity and Other Socioeconomic Factors That Influence the Household Food Security of Small-Scale Lowland Rice Farmers in Indonesia. *International Journal of Sustainable Development & Planning*, 18(3).
- Arikunto, S. (2006). *Research Procedures A Practice Approach*. Jakarta: Rineka Cipta.
- Azumah, S. B., Zakaria, A., Yegbemey, R. N., Apalogta, P. A., Dagar, V., & Mahama, A. (2022). Climate Smart Production, Gross Income, and Downstream Risk Characterization of Rice Farmers in Ghana. *Journal of Agricultural Studies*, 10(2), 13-35.
- Batoa, H., Hamzah, A., Rela, I. Z., Salahuddin, S., Lasinta, M., Alwi, L. O., & Suriyati, W. O. (2023, May). The Relationship between Social Capital and Economic Empowerment of Rice Farmers in la

- Bulu-Bulu village Parigi District of Muna Regency. In *AIP Conference Proceedings* (Vol. 2596, No. 1). AIP Publishing.
- Central Bureau of Statistics. (2012). Social Capital Statistics. www.bps.go.id. Retrieved October 24, 2020).
- Chaerani, D. S. (2020). Efficiency of Paddy Rice Farming Jajar Legowo Planting System 4:1 with Non Jajar Legowo in Gapoktan Batu Gadang Together with Batu Gadang Village Lubuk Kilangan, Padang City. *Journal of Embryo*, 12(1), (63-78).
- Coleman, J. S. (2009). Social Capital in the Creation of Human Capital. *American journal of sociology*, 94, S95-S120.
- Connor, M., de Guia, A. H., Pustika, A. B., Sudarmaji, Kobarsih, M., & Hellin, J. (2021). Rice farming in central Java, Indonesia—adoption of sustainable farming practices, impacts and implications. *Agronomy*, 11(5), 881.
- Dahya, D., Mustaha, M., Sarjoni, S., Samrin, S., Rusdi, R., & Rahmawatia, D. (2023, May). Technology Application and Analysis Feasibility Study of Rice Farming on Rainfed Land in Southeast Sulawesi. In *AIP Conference Proceedings* (Vol. 2596, No. 1). AIP Publishing.
- Daulay, M. T., & Sanny, A. (2019). Analysis of Structural Equation Modeling towards Productivity and Welfare of Farmer's Household in Sub-District Selesai of Langkat Regency. *International Journal of Research and Review*, 6(11), 117-123.
- Fadila, N., Astuti, R., & Kardhinata, H. (2022). Comparison Of Lowland Rice Farming With Various Irrigation Sources In Banyak Payed District, Aceh Tamiang Regency. *International Journal Of Humanities Education and Social Sciences (IJHESS)*, 2(3).
- Fatihah, Y. (2022). *Pengaruh Modal Sosial dan Kelembagaan terhadap Kinerja Usahatani Kapulaga di Lahan Perhutani Kabupaten Banyumas* (Doctoral dissertation, Universitas Jenderal Soedirman).
- Fukuyama, F. (1997). Social Capital and the Modern Capitalist Economy: Creating a High Trust Workplace. *Stern Business Magazine*, 4(1), 1-16.
- Ghozali, I. (2011). Application of multivariate analysis with SPSS program. *Semarang: Diponegoro University Publishing Agency*, 69.
- Ginting, R. E. (2020). Analysis of Social Economic Factors Affecting Income of Rice Farmers (Case Study: Purbaganda Village, Pematang Bandar District) Simalungun Regency. *Agripreneur: Jurnal Pertanian Agribisnis*, 9(1), 23-29.
- Gunadi, H. (2021, February). Socio-Economic Analysis of Soybean Farmers in South Sulawesi Province. In *ICONEBS 2020: Proceedings of the First International Conference on Economics, Business and Social Humanities, ICONEBS 2020, November 4-5, 2020, Madiun, Indonesia* (p. 52). European Alliance for Innovation.
- Hadari, N. (1998). *Social Field Research Methods*. Yogyakarta: Gadjah Mada University Press.

- Harahap, I., & Budi, T. (2003). *Control of Rice Disease Pests*. Jakarta: Independent Spreader.
- Hariyani, N. (2017). The Risk Level of Production And Price of Red Chili Farming In Kediri Regency, East Java Province, Indonesia. *Agricultural Socio-Economics Journal*, 17(2), 81-81.
- Hasbullah, J. (2006). *Social Capital (Towards the Excellence of Indonesian Human Culture)*. Jakarta: MR-United Press.
- Hlaing, W. W., Szabo, S., & Cooper, G. S. (2021). Hydropower Impacts on Livelihood Capital: Evidence from the Resettlement of the Upper Paunglaung Hydropower Project, Myanmar. *Asian International Studies Review*, 22(2), 189-216.
- Houshyar, E., Chen, B., & Chen, G. Q. (2019). Environmental Impacts of Rice Production Analyzed via Social Capital Development: An Iranian Case Study with a Life Cycle Assessment/Data Envelopment Analysis Approach. *Ecological Indicators*, 105, 675-687.
- Kartini, C. (1980). *Introduction to Social Research Methodology*. Bandung: Alumni.
- Katiandagho, T. M. (2021, March). Analysis of social and economic factors that affect rice farmers in Tincep Village, Sonder District, Minahasa Regency, North Sulawesi Province. In *IOP Conference Series: Earth and Environmental Science* (Vol. 681, No. 1, p. 012067). IOP Publishing.
- Laishram, J., Saxena, K. G., & Rao, K. S. (2020). Rice Cultivar Diversity, Associated Indigenous Knowledge and Management Practices in a Lowland Village Landscape from North-Eastern India. *Vegetos*, 33, 172-186.
- Mamiit, R. J., Gray, S., & Yanagida, J. (2021). Characterizing Farm-Level Social Relations' Influence on Sustainable Food Production. *Journal of Rural Studies*, 86, 566-577.
- Mubyarto. (1986). *Introduction to Agricultural Economics*. Jakarta: LP3ES Library
- Nguyen-Anh, T., Hoang-Duc, C., Tiet, T., Nguyen-Van, P., & To-The, N. (2022). Composite Effects of Human, Natural and Social Capitals on Sustainable Food-Crop Farming in Sub-Saharan Africa. *Food Policy*, 113, 102284.
- Oktarina, S., Zainal, A. G., Kuswanti, A., & Purwanto, E. (2022). The Role of Human Capital and Social Capital in Agricultural Institutional Development in Rural Areas. *Agricultural Socio-Economics Journal*, 22(2), 77-85.
- Ouattara, N. B., Xiong, X., Bakayoko, M., Bi, T. B. A. Y., Sedebo, D. A., & Ballo, Z. (2022). What Influences Rice Farmers' Choices of Credit Sources in Côte d'Ivoire? An Econometric Analysis using the Multinomial Conditional Logit model. *Progress in Development Studies*, 22(2), 149-173.
- Priyono. (2010). *Human Resource Management*. Zifatama Publisher: Surabaya.

- Putnam, R. (1993). The Prosperous Community; Sosial Capital and Public Life, *The American Prospect*, 13-65-78.
- Rado, I., Lu, M. F., Lin, I. C., & Aoo, K. (2021). Societal Entrepreneurship for Sustainable Asian Rural Societies: A Multi-Sectoral Social Capital Approach in Thailand, Taiwan, and Japan. *Sustainability*, 13(5), 2747.
- Rao, V. B. (2001). *East Asian economies: The Miracle, a Crisis and the Future*. McGraw-Hill Companies.
- Rosana, E., & Arbi, M. (2020, June). Livelihoods System and Level of Vulnerability of Rice Farmer Households Due to Climate Change at Swampy Lowland in Sungai Pinang Village Banyuasin Regency. In *2nd Sriwijaya International Conference of Public Health (SICPH 2019)* (pp. 128-135). Atlantis Press.
- Rusmana. (2009). *Social Development: Models and Indicators*. Bandung: STKSPRESS.
- Saleh, A., Surahman, M., Zamzami, A., & Wetik, J. D. (2021, March). Rice Estate Areas: A Sociocultural and Institutional Model for Lowland Rice Farming. In *IOP Conference Series: Earth and Environmental Science* (Vol. 694, No. 1, p. 012008). IOP Publishing.
- Saleh, K. (2021, October). Factors Affecting the Capacity of Farming Rice Farmers in Managing Rice Field in the District Tangerang. In *IOP Conference Series: Earth and Environmental Science* (Vol. 883, No. 1, p. 012048). IOP Publishing.
- Saragih, B. (2010). *Agribusiness New Paradigm of Agriculture-Based Economic Development*. Bogor: IPB Press.
- Sarwono, J. (2006). *Quantitative and Qualitative Research Methods*. Yogyakarta: Science House.
- Sawitri, D., & Soepriadi, I. F. (2014). Farmer's Social Capital and Industrial Development in the Agricultural Center Village of Subang Regency and Karawang Regency. *J. Planning and the City*, 25(1):17-36.
- Soekartawi. (2003). *Agribusiness Theory and Applications*. Jakarta: PT Raja Grafindo.
- Supadi & Sumedi. (2004). Overview of Agricultural Credit Policy. ICASARD Working Paper No. 25. Agency for Research and Development of Socio-Economic Agriculture, Research and Development Agency of the Ministry of Agriculture. Jakarta.
- Supratikno, S. I., Adi, I. R., & Lubis, D. P. (2023). The Influence of Agrarian Reform, Social Capital, Farmer Spirituality and Personal Tribute on Farmers' Welfare in Kabupaten Bogor, West Java. *Eduvest-Journal of Universal Studies*, 3(5), 966-975.
- Susriani, S., Bafadal, A., & Indarsyih, Y. The Effect of People Business Credit (KUR) on Rice Field Business Income in Tinanggea District. *Jurnal Social Economic of Agriculture*, 11(2), 70-81.
- Taridala, S. A. A., Abdullah, W. G., Tuwo, M. A., Bafadal, A., Fausayana, I., Salam, I., & Wahyuni, S. (2019, May). Exploration of the potential of upland rice agribusiness development in South

- Konawe District, Southeast Sulawesi. In *IOP Conference Series: Earth and Environmental Science* (Vol. 260, No. 1, p. 012011). IOP Publishing.
- Tsuchiya, K., Rustiadi, E., & Funakawa, S. (2021). The Role of Terraced Paddy Fields and Its Critical Issues in Sustaining a Mountainous Tropical Monsoon Rural Community: Case Study of Malasari Village, Bogor Regency, Indonesia. *Journal of Regional and Rural Development Planning (Jurnal Perencanaan Pembangunan Wilayah dan Perdesaan)*, 5(2), 91-100.
- Udasmoro, W. (2022). Women's Labor Force Participation in Insurgency and Ethno-Religious Conflict: The Cases of Aceh and Ambon. *International Feminist Journal of Politics*, 24(3), 395-414.
- Umar, M. F., Nugroho, I., Darmadji, D., & Suwarta, S. (2020). The Study of Entrepreneurship and Innovation Adoption by Farmer in Improving Lowland Rice Farming. *Journal of Socioeconomics and Development*, 3(1), 16-28.