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Attitude of Farmers Towards Sustainability of Rice Farming in Sub Urban Area of Sleman Regency

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Abstract: This study aims to determine the level of knowledge of farmers about government regulations on the protection of agricultural land sustainable food and knowing the factors that influence the attitude of farmers towards the sustainability of rice farming. The location is determined by purposive method in six villages which belong to sub urban area of sleman regency. Thirty farmers are chosen as respondents using simple random sampling technique. This research is using the descriptive analysis as the basic method and logistic regression to analyze the factors that influence the attitude of farmers towards the sustainability of rice farming. Primary data obtained through interview by using questionnaire and observation personally. The result showed that knowledge of farmers about government regulations on the protection of agricultural land sustainable food is still very low. Logistic regression analysis shows age, farming experience, farming income, dummy availability of credit and dummy land status significantly influence the attitude of farmers toward the sustainability of rice farming in the alpha 10 percent. On the average, the opportunity of the sustainable farming for farmer in sub urban area of sleman regency is amounted to 53.33 percent.

Keywords: Knowledge, rice farmer attitude, sustainability, factors that influence

1. Introduction

The concept of sustainable agriculture is a process that utilizes resources optimally to meet agricultural needs and the welfare of society without sacrificing current needs and the welfare of future generations (Fujisaka, 1992; Istiyanti et al., 2024; Majumdar, 2020). Control of the functions of agricultural land sustainable food causes depletion of mastery of the land so that the impact on the declining revenue farmers (Fujisaka, 1992; Istiyanti et al., 2024). To control the rate of control of function of agricultural land sustainable food in order to improve the welfare of farmers and the public in general Governments have established laws No. 41 in 2009 on the protection of agricultural land sustainable food (Undang- Undang Republik Indonesia Nomor 41 Tahun 2009 Tentang Perlindungan Lahan Pertanian Pangan Berkelanjutan, 2009). Yogyakarta Special Region Government insists that regulation by publishing local regulations Yogyakarta no. 10 in 2011 on the protection of agricultural land sustainable food to reduce the shrinkage of farmland and meet food needs. In the change, sustainable food agricultural land set out in the plan of Spatial and territorial Area established with an area of at least 35,911.59 ha (Peraturan Daerah Provinsi D.I Yogyakarta No. 10 Tahun 2011 Tentang Perlindungan Lahan Pertanian Pangan Berkelanjutan, 2011).

Sleman Regency, as a border city of Yogyakarta Majumdar (2020), holds a strategic position to supply food needs in Yogyakarta because it has the largest rice fields with a rice production of 33.37% of the total rice production in the Special Region of Yogyakarta (Badan Pusat Statistik, 2014; BPS DIY, 2014). Furthermore, Sleman Regency has a very rapid industrial growth rate (Sarastika et al., 2023; Sirait et al., 2025), property and services tend to shift the function of agricultural land to non-agricultural land. There is an opportunity for community welfare by converting agricultural land to non-agricultural land, because there is an increase in income for people who do not own agricultural land.

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The government has made policies to protect agricultural land sustainably, but the level of farmers' knowledge about government regulations regarding the protection of sustainable food agricultural land and the factors influencing farmers' attitudes towards sustainable rice farming in urban areas of Sleman Regency is still questionable. The specific objectives of this study were to determine the level of farmers' knowledge about government regulations regarding the protection of sustainable food agricultural land and to determine the factors influencing farmers' attitudes towards sustainable rice farming in urban areas of Sleman Regency.

2. Methodology

This research used a mixed-method approach, combining quantitative and qualitative research (Creswell & Hirose, 2019; Creswell & Inoue, 2025) to obtain a general overview of farmers' attitudes toward the sustainability of rice farming in the suburbs of Sleman Regency. The research location was determined purposively, considering that the areas containing peri-urban rice fields in Sleman Regency are located in three sub-districts: Gamping, Godean, and Mlati. Farmer respondents were sampled using a non-proportional random sampling method, resulting in a total sample size of 30 respondents.

This study assumes that the production for sale is entirely in the form of grain and that the land cultivated is either owned by the respondent or not. A limitation of this study is that it does not cover rice cultivation techniques in the suburban areas of Sleman Regency. Descriptive analysis is used to describe farmers' knowledge of government regulations in the form of Law No. 41 of 2009 and Yogyakarta regional regulation No. 10 of 2011 concerning agricultural land protection. Logistic regression analysis is used to determine the factors that influence farmers' attitudes towards the sustainability of rice farming in the suburban areas of Sleman Regency and logistic regression is used to analyze the relationship between the dependent variable (Y) and the independent variable (X) in quantitative or qualitative form (Hanley et al., 2006; Majumdar, 2020).

$$Logit\ [(P=WTL)] = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + d_1 D_1 + d_2 D_2 + d_3 D_3 \quad (1)$$

Where:

- WTL : Willingness to leave is the desire to continue farming or leave farming. Nominal scale: 1 = Continue farming; 0 = leave farming.
- $\beta0, \beta1, \beta2, \ldots \beta7$: Parameter coefficients
- $d1 - d3$: Dummy coefficient
- $x1$: Farmer knowledge. This is a score based on 5 knowledge items.
- $x2$: Farmer age. Expressed in years.
- $x3$: Family members. Expressed in people.
- $x4$: Education level. No school = 0; Elementary school = 1; Junior high school = 2; Senior high school = 3; Diploma = 4; Bachelor's degree = 5.
- $x5$: Farming experience. Expressed in years.
- $x6$: Farming income. Expressed in rupiah per season (Rp/Season)
- $x7$: Off-farm income. Expressed in rupiah per month (Rp/month)
- $D1$: Farmer group participation. Nominal scale: 1 = active or 0 = inactive
- $D2$: Credit availability. Nominal scale: 1 = Yes or 0 = No.
- D3 : Land ownership status. Nominal scale: 1 = self-owned or 0 = non-owned.

Simultaneous parameter testing is performed using the likelihood test/G-test and partial parameter testing using the Wald test. The likelihood test/G-test is performed with the following calculations:

$$G = -2ln\left[\frac{(maximum\ likelihood\ for\ model)}{(maximum\ likelihood\ for\ saturated\ model)}\right] \quad (2)$$

$$G = -2ln\left[\frac{\left(\frac{n_1}{n}\right)^{n1}\left(\frac{n_0}{n}\right)^{n0}}{\sum_{ni} Y^i(1-\pi_1)^{(1-Y_i)}}\right] \quad (3)$$

Where:

n_1 : number of samples included in category P (Y=1)

n_0 : number of samples included in category P (Y=0)

N : total number of samples

If the G statistic value is greater than the Chi-square (x^2) table value or the P-value is greater than α, then H0 is accepted or H0 is rejected at that α level. The hypothesis developed in this overall test is:

H0: $\beta2 = \beta2 = \beta3 = ... = \beta p = 0$

H1: There is at least one $\beta i \neq 0$ with i = 1, 2, 3 ..... p.

If $G \geq x^2_{(p,\propto)}$ then H0 is accepted.
If $G < x^2_{(p,\propto)}$ then H0 is rejected.

The Wald test is used to test the effect of each independent variable on the dependent variable individually. Theoretically, manual calculations can be performed using the formula:

$$Wi = \left[\frac{\beta_i}{SE(\beta_i)}\right] \qquad (4)$$

Where:
β_i : Regression Coefficients
$SE(\beta_i)$: Error xi

The Wald test values are distributed according to a normal distribution (Z). If the calculated Z value is greater than the Z table or the P value (sig) of the Wald test is greater than α, then H0 is accepted or H0 is rejected at that α level. The hypothesis developed in the partial test is:
$H_0 : \beta_i = 0$
$H_1 : \beta i \neq 0$
If $W \geq Z_{\alpha/2}$ or the sig value is more than α 10%, it means H0 is accepted
If $W < Z_{\alpha/2}$ or the sig value is less than α 10%, it means H0 is rejected.

The number of samples in the logistic regression analysis was 60 samples because this research was conducted in two rice planting seasons, namely the rainy season and the dry season, so that the farm income variable had two values. The results of the logit model estimation are used to see the prediction of farmers' attitudes towards the sustainability of rice farming in the form of an equation:

$$L_i = \ln\left[\frac{p_i}{1-p_i}\right] = b_0 + b_1, \dots . b_7 \qquad (5)$$

Where:
p : Probabilitas responden memilih nilai variable dependen
$b_0, b_1, \dots . b_7$ = Hasil estimasi koefisien regresi logistic

3. Result and Discussion

3.1 Farmers' Knowledge of Government Regulations on Sustainable Agricultural Land Protection

Farmers' knowledge is presumed to influence their attitudes toward the sustainability of rice farming in peri-urban areas (Fujisaka, 1992; Hidayah & Rohmadiani, 2023). It is expected that a high level of knowledge regarding Law No. 41 of 2009 and Regional Regulation (Perda DIY) No. 10 of 2011 can reduce the problem of land-use conversion in peri-urban areas, considering that these areas experience high economic and service-sector growth (Fujisaka, 1992; Margareta et al., 2025). Farmers' knowledge is classified into five indicators: (1) knowledge of Law No. 41 of 2009, (2) knowledge of Regional Regulation (Perda DIY) No. 10 of 2011, (3) knowledge of extension activities related to the law and regulation on sustainable agricultural land protection, (4) knowledge of designated sustainable agricultural land areas (green zones), and (5) knowledge of government prohibitions on draining paddy fields or converting agricultural land. Farmers' knowledge of government regulations on sustainable agricultural land protection is presented in Table 1.

Table 1. Farmers' knowledge of government regulations on sustainable agricultural land protection in peri-urban areas

No	Knowledge Indicator	Yes (persons)	%	No (persons)	%	Total
1	Knowledge of Law No. 41 of 2009	5	16.67	25	83.33	30
2	Knowledge of Perda DIY No. 10 of 2011	8	26.67	22	73.33	30
3	Extension/socialization of Law No. 41 of 2009 and Perda DIY No. 10 of 2011	11	36.67	19	63.33	30
4	Sustainable agricultural land zones (green zones)	18	60.00	12	40.00	30
5	Prohibition of draining paddy fields or land conversion	10	33.33	20	66.67	30

Source: Processed primary data

Table 1 shows that overall farmers' knowledge of government regulations on sustainable agricultural land protection remains very limited. Based on field observations and interviews, farmers' knowledge originates mainly from extension activities conducted by agricultural extension officers and field extension workers (PPL) within farmer groups. Additionally, information is obtained from visual media such as banners and billboards placed along roadsides prone to land conversion.

The government has undertaken several efforts to protect sustainable agricultural land, including socialization programs for farmer groups, dissemination through printed media encouraging land protection, and stricter supervision of permits for draining paddy fields and constructing buildings to minimize the rate of land-use conversion. Based on the table, farmers' knowledge of Law No. 41 of 2009 and Perda DIY No. 10 of 2011 in peri-urban areas of Sleman Regency is very low. This may be because extension activities focus more on identifying protected agricultural zones rather than emphasizing the legal foundations underlying these policies.

Knowledge of extension activities regarding Law No. 41 of 2009 and Perda DIY No. 10 of 2011 represents one of the government's efforts to protect sustainable agricultural land. Such activities are closely related to farmers' participation in farmer groups, as agricultural extension programs are generally conducted through these groups. Extension services and announcements are important channels through which farmers gain information on government regulations, policies, innovations, and agricultural technologies. Although farmers' awareness of extension activities related to the law and regulation remains low, their knowledge of protected agricultural zones (green zones) and prohibitions against land conversion is relatively high. This is likely because extension programs emphasize identifying protected land and prohibitions on paddy field drainage to reduce land conversion in peri-urban areas, which are vulnerable due to rapid economic growth.

Sustainable agricultural land zones (green zones) are strictly protected and prohibited from conversion, while yellow zones function as buffer areas where land conversion is permitted under certain conditions, including obtaining drainage and building permits. Knowledge of green and yellow zones is essential for minimizing land conversion, especially in peri-urban areas (Peraturan Daerah Provinsi D.I Yogyakarta No. 10 Tahun 2011 Tentang Perlindungan Lahan Pertanian Pangan Berkelanjutan, 2011).

Field interviews indicate that the government is perceived as serious in protecting agricultural land by making permit processes more stringent. However, farmers experience difficulties due to complicated bureaucratic procedures, which sometimes lead to unauthorized land conversion before permits are obtained. This highlights the need for stronger government supervision and evaluation. Knowledge without a strong legal foundation is easily forgotten. Therefore, it is essential for the government to emphasize not only protected land zones but also the legal basis Law No. 41 of 2009 and Perda DIY No. 10 of 2011 along with sanctions for violations to create a deterrent effect and ensure the sustainability of rice farming in the future.

3.2 Factors Influencing Farmers' Attitudes toward the Sustainability of Rice Farming in Peri-Urban Areas of Sleman Regency

The factors influencing farmers' attitudes toward the sustainability of rice farming were analyzed using logistic regression (Hanley et al., 2006; Hidayah & Rohmadiani, 2023; Perito et al., 2020). The analysis used 60 observations, as farm income was measured per planting season. The model included seven independent variables and one dependent variable, namely the sustainability of rice farming. The independent variables were farmers' knowledge, age, number of family members, education level, farming experience, farm income, and non-farm income showed at table 2 below.

Table 2. Descriptive statistics of independent variables affecting rice farming sustainability in peri-urban areas of Sleman regency

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Knowledge (score)	60	0.00	4.00	1.70	1.31
Age (years)	60	20.00	73.00	54.43	10.45
Family members (persons)	60	1.00	9.00	4.33	2.24
Education (score)	60	1.00	5.00	2.20	1.23
Farming experience (years)	60	3.00	60.00	26.20	17.27
Farm income (IDR/season)	60	395,000	9,061,800	2,461,891.03	1,790,235.49
Non-farm income (IDR/month)	60	0.00	3,500,000	1,632,933.33	955,986.24

Source: Processed primary data.

The table 2 shows that the knowledge variable ranges from a minimum score of 0 to a maximum of 4, with a mean of 1.70 and a standard deviation of 1.31. This variable is composed of five knowledge indicators: awareness of Law No. 41 of 2009, Regional Regulation (Perda DIY) No. 10 of 2011, extension or dissemination of these regulations, knowledge of sustainable agricultural land zones (green zones), and awareness of prohibitions on paddy field drainage or building construction. The average knowledge score is below 50 percent, indicating a very low level of farmers' knowledge.

The age variable ranges from 20 to 73 years, with an average of 54.43 years and a standard deviation of 10.45, indicating that rice farmers in peri-urban areas are predominantly middle-aged. The number of family members ranges from 1 to 9, with an average of 4.33 persons and a standard deviation of 2.24, which is considered an ideal household size according to government standards and is expected to positively support farming sustainability.

Education is measured using formal education codes, ranging from 1 (elementary school) to 5 (bachelor's degree). The mean education score is 2.20, equivalent to junior high school, suggesting that farmers have sufficient capacity to absorb information, innovation, and agricultural technology. Farming experience ranges from 3 to 60 years, with an average of 26.20 years and a standard deviation of 17.27. While this indicates strong farming skills, it may also reduce farmers' openness to new technologies, highlighting the need for targeted extension approaches.

Farm income per planting season ranges from IDR 395,000 to IDR 9,061,800, with an average of IDR 2,461,891.03. When converted to monthly income (approximately IDR 820,630), farm income falls below the Sleman Regency Minimum Wage in 2014 (IDR 1,127,000). In contrast, non-farm income ranges from IDR 0 to IDR 3,500,000 per month, with an average of IDR 1,632,922, exceeding the regional minimum wage. This indicates that non-farm income plays a more important role than farm income in supporting farmers' livelihoods in peri-urban areas.

3.2.1 Logistic Regression Model Fit Test (Goodness of Fit)

The goodness of fit of the logistic regression model was evaluated using the Hosmer and Lemeshow Goodness of Fit Test, which examines whether the empirical data are consistent with the proposed model. A significance value greater than 0.05 indicates that there is no significant difference between the model and the observed data, meaning the model is considered fit and capable of predicting the observed values.

Table 3. Logistic regression model fit test using the hosmer and lemeshow test

Step	Chi-square	df	Sig.
1	3.169	7	0.869

Source: Processed primary data

The calculated Chi-square value (3.169) is smaller than the Chi-square table value at df = 7 and a 5% significance level (14.07). In addition, the significance value of 0.869 (> 0.05) indicates that the model fits the data well and is acceptable for hypothesis testing.

3.2.2 Overall Model Fit Test

The overall model fit was assessed using the Maximum Likelihood (G) test by comparing the initial and final −2 Log Likelihood values. The initial model without independent variables showed a −2 Log Likelihood of 82.911, exceeding the critical Chi-square value, indicating a poor fit. After including the independent variables, the −2 Log Likelihood decreased to 57.049, which was below the corresponding Chi-square threshold. This significant improvement indicates that the model fits the data well once the independent variables are included.

The simultaneous significance of the independent variables in the logistic regression model was tested using the Omnibus Test of Model Coefficients in the SPSS output.

Table 4. Results of the simultaneous parameter test (maximum likelihood)

Test	Chi-square	df	Sig.
Step	25.862	10	0.004
Block	25.862	10	0.004
Model	25.862	10	0.004

Source: Processed primary data

Hypotheses:

H_0: None of the independent variables affect the dependent variable.
H_1: At least one independent variable affects the dependent variable.
H_0 is rejected if the significance value is less than 0.05.

Based on the results, the difference between the initial and final -2 Log Likelihood values (82.911 − 57.049) produced a Chi-square value of 25.862 with a significance level of 0.004 (< 0.05). Therefore, H_0 is rejected. This indicates that, simultaneously, farmers' knowledge, age, number of family members, education level, farming experience, participation in farmer groups, credit availability, land ownership status, farm income, and non-farm income have a significant effect on farmers' decisions to continue or leave rice farming in peri-urban areas of Sleman Regency. Thus, the logistic regression model is considered fit and suitable for further analysis.

3.2.3 Coefficient of Determination Test (R^2)

The coefficient of determination in the logistic regression model was tested using the Nagelkerke R Square. To examine the extent to which the independent variables explain the dependent variable namely, the sustainability of rice farming the Cox and Snell R Square and Nagelkerke R Square values were used. These measures are also referred to as Pseudo R-square values, as presented below.

Table 5. Results of the logistic regression coefficient of determination test

Step	2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	57.049	0.350	0.468

Source: Processed primary data

The Nagelkerke R Square value of 0.468, which is higher than the Cox and Snell R Square value, indicates that the independent variables explain 46.8% of the variation in rice farming sustainability, while the remaining 53.2% is explained by other factors outside the model.

3.2.4 Partial Parameter Test (Wald Test)

The partial parameter test was conducted to determine the effect of each independent variable on the dependent variable (Hanley et al., 2006; Perito et al., 2020). The Wald test was used to test the significance of individual parameters. If the p-value (Sig.) of the Wald test is greater than α, the null hypothesis (H_0) is accepted.

Table 5. Estimation results of the binary logistic regression model for factors affecting rice farming sustainability

Variable	B	S.E.	Wald	df	Sig.	Exp(B)
Constant	13.502	4.701	8.250	1	0.004	730,648,792
Knowledge	−0.512	0.314	2.653	1	0.103	0.599
Age	−0.244	0.085	8.230	1	0.004*	0.784
Family members	−0.178	0.190	0.879	1	0.348	0.837
Education	−0.581	0.413	1.986	1	0.159	0.559
Farming experience	0.059	0.035	2.813	1	0.094**	1.061
Farm income	−0.708	0.415	2.908	1	0.088**	0.493
Non-farm income	0.363	0.335	1.173	1	0.279	1.437
Farmer group participation (dummy)	1.187	0.928	1.635	1	0.201	3.277
Credit availability (dummy)	1.941	0.965	4.043	1	0.044*	6.966
Land ownership status (dummy)	1.810	0.958	3.571	1	0.059**	6.112

Source: Processed primary data

Notes: * significant at α = 5%; ** significant at α = 10%

The binary logistic regression model in table 5 shows that farming experience, non-farm income, farmer group participation, credit availability, and land ownership status have positive coefficients, while knowledge, age, family size, education, and farm income have negative coefficients.

The estimated logistic regression model is expressed as:

$$\text{Log (WTL)} = 13.502 - 0.512X_1 - 0.244X_2 - 0.178X_3 - 0.581X_4 + 0.059X_5 - 0.708X_6 + 0.363X_7 + 1.187D_1 + 1.941D_2 + 1.810D_3$$

Where:

P(WTL) = ln [pi / (1 − pi)]

P(WTL) = P (Y = 1 | x), representing the probability that farmers continue rice farming.

The results indicate that age and credit availability significantly affect rice farming sustainability at the 5% significance level, while farming experience, farm income, and land ownership status are significant at the 10% level. Other variables knowledge, family size, education, non-farm income, and farmer group participation are not statistically significant.

The results of the coefficient estimation and variable significance test indicate that Age is a significant variable in the model because it has a P value of 0.004 less than α = 5 percent with a negative coefficient of -0.244. The Exp (B) value of farmer age is 0.784 which means that with the addition of one year of farmer age, the sustainability of farmer's rice farming will be reduced by 0.784 times. Based on the results of field interviews, most farmers are in middle adulthood, namely between the ages of 40-60 years. The results of the age factor analysis have a negative coefficient, meaning that the addition of one year of age will reduce the farmer's ability to farm. This is because agricultural activities are physical activities that require energy, so efforts are needed from the government in the outskirts of Sleman Regency to attract the interest of the younger generation to be involved in agricultural activities and maintain their food agricultural land in the future by implementing the adoption of appropriate technology that can increase productivity, improve service facilities and infrastructure, efficiency of production inputs, and price guarantees for farmers.

The availability of credit is a significant dummy variable in influencing agricultural sustainability because it has a P value of 0.044 which is less than α = 10 percent. This is because capital is needed in agricultural activities, so with the availability of credit, farmers do not need to worry about capital for their agricultural activities. Credit (capital loans) for agricultural activities will be paid by farmers after the harvest or farmers get results from their agricultural activities. The Exp (B) value of credit availability is 6.966 and has a positive coefficient of 1.941 which means that the availability of credit for farmers will increase the sustainability of farmers' rice farming by 6.966 times compared to the unavailability of credit.

Farming experience has a significant effect on the sustainability of farming because it has a P value of 0.094 which is greater than α = 10 percent. This is thought to be because farmers with high experience are already accustomed to rice farming activities so it is very difficult to leave their routine, coupled with high experience in rice farming activities, farmers are able to overcome problems in rice farming activities well. The Exp (B) value of farming experience is 1.061 and has a positive coefficient of 0.059 which means that with the addition of one year of farmer experience in rice farming, its influence on the sustainability of agricultural activities is 1.061 times.

Farm income factor is a significant factor in the sustainability of farming (P-value 0.088 $<\alpha$ = 10 percent) in the binary logistic regression model. This is suspected because the large profits obtained from a business activity tend to continue doing that business activity. The Exp (B) value of farming income is 0.493 with a negative coefficient value of -0.708, which means that adding one category of farming income will reduce the sustainability of rice farming by 0.493 times. This is because the peri-urban area is an area with a high level of economic and service growth that requires high income to meet the farmer's monthly economic needs, while income from rice farming activities is income per planting season.

Land ownership is a significant dummy variable on the sustainability of rice farming because it has a P-value (sig) of 0.059 (less than α = 10 percent). The significance of the dummy variable of land status on the sustainability of rice farming. The results of field observations show that the land used for farming activities is land owned by the farmer's parents, so they are reluctant to sell it. In addition, the land owned by farmers and used for farming as a food reserve for the farmer's family, on the other hand, the land they own is a reserve for their children in the future because the peri-urban area is an area with increasingly high economic and service growth which tends to reduce agricultural land. The Exp (B) value of land ownership is 6.112 and has a positive coefficient of 1.810, which means that the ownership of their own land used increases 6.112 times to continue farming activities.

3.2.5 Probability of Farmers' Willingness to Continue Rice Farming

The results of the estimation of the logistic regression coefficient values of the factors that influence farmers' attitudes towards the sustainability of rice farming in the peri-urban area of Sleman Regency, then the probability value of farmers' desire to continue rice farming (willingness to leave) can be estimated using Choice Experiment (CE) with the formula P(WTL) = ln (pi/1-pi), Where P(WTL) = $P(Y = 1|x)$ is the probability of the event Y=1 (Hanley et al., 2006) The results of the analysis of the estimated probability of farmers' attitudes towards the sustainability of rice farming are presented in the form of descriptive statistics in the table 6.

Table 6. Distribution of farmers' willingness to continue rice farming in peri-urban areas of Sleman Regency

WTL Interval	Category	Number	Mean	Percentage (%)
0.0172 – 0.3448	Low	21	0.1899	35.00
0.3448 – 0.6724	Medium	19	0.5585	31.67
0.6724 – 1.0000	High	20	0.8701	33.33

Minimum: 0.0172
Maximum: 1.0000
Mean: 0.5333
Std. Deviation: 0.3009

Source: Processed primary data

The table 6 shows that the probability of farmers' willingness to continue rice farming ranges from 0.0172 to 1.0000, with an average value of 0.5333. The largest proportion of farmers are 35.0% falls into the low category. This suggests that rice farming in peri-urban areas is often maintained as a routine or subsistence activity rather than a profit-oriented enterprise.

Field interviews revealed that most farmers hoped their children would continue farming rice. The reasons given by farmers who hoped their children would continue farming included preserving inherited land, meeting their own food needs, providing a side business, and ensuring the continuity of the farming business. Farmers who didn't want their children to continue farming were mostly due to not knowing what their children would want in the future, and children are rarely involved in farming activities nowadays. Other reasons cited were lack of land ownership and economic instability.

4. Conclusion

Overall, farmers' knowledge of government regulations in the form of Law No. 41 of 2009 and DIY Regional Regulation No. 10 of 2011 concerning the protection of sustainable food agricultural land in peri-urban areas is still very low, but farmers' knowledge of sustainable food agricultural areas (green belts) is quite high or more than 50 percent of farmers know. Farmers' attitudes towards the sustainability of rice farming in the peri-urban area of Sleman Regency are significantly influenced by age, farming experience, farming income, credit availability dummy and land status dummy at a significance level of $\alpha = 10$ percent. Based on the results of the analysis, the average probability of farmers' attitudes to continue rice farming in the peri-urban area of Sleman Regency is 0.5333 or 53.33%.

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Conflict of Interest

The authors declare no conflicts of interest

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