

PERCEPTIONS OF RICE FARMERS IN WALANTAKA SUBDISTRICT, SERANG CITY TOWARD COOPERATIVES AS AGRICULTURAL INSTITUTIONS AND THEIR DIFFERENTIATING FACTORS

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Abstract

Agricultural activities in Walantaka District have been facing weakened institutional support, with only three of the 28 registered cooperatives remaining active in 2023. Despite this condition, cooperatives continue to serve as an important institutional pillar in agricultural development. This study employed a quantitative approach to examine rice farmers' perceptions of cooperatives as agricultural institutions in Walantaka District, Serang City. Data were obtained from 295 rice farmers selected through simple random sampling using a structured questionnaire. The association between respondents' characteristics and their perceptions was assessed using the Chi-square test. The findings revealed that favorable and unfavorable perceptions of cooperatives were distributed in relatively similar proportions among respondents. In addition, farmers' perceptions were found to be associated with their level of education, farm size, and length of farming experience.

Usaha pertanian di Kecamatan Walantaka telah kehilangan daya dukung kelembagaan, karena pada tahun 2023 hanya tiga koperasi saja yang aktif dari 28 unit koperasi yang tercatat. Pada sisi lain, koperasi adalah kelembagaan yang memiliki peran penting dalam pembangunan pertanian. Penelitian bertujuan untuk mendeskripsikan persepsi petani padi di Kecamatan Walantaka Kota Serang terhadap koperasi sebagai lembaga pertanian dengan pendekatan kuantitatif. Data dikumpulkan melalui kuesioner yang disebarakan kepada 295 petani responden yang ditarik menggunakan *simple random sampling*. Persepsi responden dianalisis menggunakan uji Chi-square. Hasil penelitian menunjukkan bahwa proporsi responden dengan persepsi "baik" dan persepsi "kurang baik" terhadap koperasi sebagai kelembagaan pertanian cukup berimbang, dimana persepsi tersebut memiliki keterkaitan dengan tingkat pendidikan, luas lahan, dan lama berusahatani responden.

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INTRODUCTION

The City of Serang in Banten Province has 370 cooperatives of various types and forms, including Savings and Loan Cooperatives, Consumer Cooperatives, Producer Cooperatives, and Service Cooperatives. These cooperatives offer various facilities to meet community needs, particularly in terms of financial services and support for agricultural activities. Unfortunately, data from 2023 show that nearly half of these cooperatives are inactive (BPS of Banten Province, 2023). According to Law Number 25 of 1992 concerning Cooperatives, a cooperative is also defined as a business entity consisting of individuals or cooperative legal entities that conduct their activities based on cooperative principles and function as a people's economic movement founded on the principle of kinship.

Specifically, in Walantaka District, Serang City, there are 28 cooperatives with a total membership of 181 people. However, only three of these cooperatives remain active, and they are all engaged in savings and loan activities (BPS of Serang City, 2024). According to Kusnindar and Arifin (2017), there are nine variables that hinder cooperative competitiveness and contribute to

cooperative failure. These variables are grouped into three main factors: marketing, technology, and guidance; capital and financial transparency; and human resources and the products offered.

The absence of active Village Unit Cooperatives (KUD) or agricultural cooperatives in Walantaka District indicates the decline of cooperative-based agricultural institutions that once supported agricultural development in the area. On the other hand, Walantaka is the second-largest rice production center in Serang City, Banten Province, with a production volume of 15,354.26 tons (BPS of Serang City, 2019). Historically, cooperatives, together with other agricultural institutions such as farmer groups (Poktan), farmer group associations (Gapoktan), and banks, have collectively supported agricultural activities according to their respective functions and roles. Prominent economic historian Douglass C. North (1990) defined institutions as constraints created to shape harmonious patterns of interaction among individuals in political, social, and economic activities.

The explanation above emphasizes the importance of understanding farmers' perceptions of cooperatives as agricultural institutions in Walantaka District. This issue is particularly relevant in light of the current government's ambition to revive the rural economy through the Koperasi Desa Merah Putih program, despite the fact that many cooperatives have been declared inactive or merely "nameplate cooperatives." Positive perceptions are expected to encourage farmers' participation and willingness to join and utilize cooperative services, thereby strengthening the existence of cooperative institutions. Conversely, negative perceptions are likely to reduce such interest. According to Saifudin (2022), perception is the process through which an individual interprets sensory stimuli. Perception originates from previous experiences. In psychology, perception is defined as the process of acquiring understandable information through the senses, such as sight, hearing, and touch, while consciousness serves as the mechanism for interpreting such information. Meanwhile, according to Stephen P. Robbins and Timothy A. Judge (2017), perception is the process by which individuals organize and interpret

sensory impressions to give meaning to their environment.

METHODOLOGY

This study was designed as a descriptive survey research employing a quantitative approach in Walantaka District, Serang City, Banten Province. A total of 295 rice farmers were involved as respondents, selected from a population of 1,122 farmers using a simple random sampling technique.

Data on farmers' perceptions of cooperatives as agricultural institutions were collected using a questionnaire instrument and were described through one-way (frequency) tables and cross-tabulation tables. Differences in farmers' perceptions were analyzed using the Chi-Square test of independence and dependence, employing the following formula:

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

where :

- [1] χ^2 = Chi-Square value
- [2] O_i = observed frequency
- [3] E_i = expected frequency
- [4] $\sum$ = summation across all categories or cells

RESULT AND DISCUSSION

A. Respondent Characteristics

1. Age

The respondents' ages ranged from 39 to 70 years, with an average age of 51.08 years. The distribution of respondents by age, as presented in Table 3, shows that 80% of the respondents were under 55 years old. This indicates that the majority of respondents are still within the productive age category, referring to the definition of productive age by BPS of Serang City (2022), which ranges from 15 to 64 years. This condition represents a positive potential for the sustainability of rice farming activities in Walantaka District.

Table 1. Age Distribution of Respondents

Age (Years)	Number of Respondents (Persons)	Percentage (%)
(< 47)	117	39.7
(47 – 55)	119	40.3
(> 55)	59	20.0
Total	295	100

2. Formal Education Level

A considerable number of respondents had only completed elementary school education. According to several respondents, this condition was mainly

due to economic constraints, which made education a lower priority for their families during their school-age years.

Table 2. Distribution of Respondents by Formal Educational Level

Education Level	Frequency (n)	Percentage (%)
SD	138	46.8
SMP	78	26.4
SMA	79	26.8
Total	295	100

Landholding Size

Most respondents owned or managed less than 0.7 hectares of agricultural land, with an average landholding size of 1.01 hectares. According to several respondents, the relatively small size of landholdings is mainly attributable to land inheritance subdivision and the conversion of agricultural land for other purposes.

Table 3. Distribution of Respondents by Landholding Size

Landholding Size	Frequency (n)	Percentage (%)
(< 0.7)	130	44.1
(0.7 – 1.3)	58	19.7
(> 1.3)	107	36.3
Total	295	100

Farming Experience

The respondents' farming experience ranged from 3 to 35 years, with an average of 12 years. This indicates that most farmers have been engaged in farming activities for a considerable period of time. In particular, many respondents began farming at a young age by assisting their parents and later continued the practice as a family tradition passed down through generations. This long-term involvement in farming reflects the strong intergenerational nature of agricultural livelihoods within the community.

Table 4. Distribution of Respondents Based on Years of Farming Experience

Farming Experience	Frequency (n)	Percentage (%)
Baru	77	26.1
Cukup lama	179	60.7
Lama	39	13.2
Total	295	100

Farm Income

Most respondents earned an income of less than IDR 12,424,697 per planting season, with an average farm income of IDR 17,762,712 per season. Based on the interview results, respondents with lower incomes were generally rice

farmers who operated on a small scale of land ownership and experienced fluctuating harvest yields. These conditions contributed to the relatively low level of income generated from their farming activities.

Table 5. Distribution of Respondents Based on Farm Income

Farm Income (Rp)	Frequency (n)	Percentage (%)
< 12.424.697	156	52.9
12.424.697 – 23.100.726	39	13.2
> 23.100.726	100	33.9
Total	295	100

Farmer Perceptions of Cooperatives as Agricultural Institutions

Respondents' perceptions of cooperatives were shaped by various factors, including their experiences in utilizing cooperative services, interactions with cooperatives or cooperative members, and information about cooperatives obtained from different sources. The data presented in Table 8 indicate that cooperatives as agricultural institutions were perceived positively by a slightly larger number of respondents compared to those who held less favorable perceptions. Although the difference was relatively

small, the findings suggest that cooperatives generally maintain a positive image among rice farmers and continue to play an important role in supporting agricultural activities within the community.

Table 6. Rice Farmer's Perceptions of Cooperatives as Agricultural Institution

Perception	Number of Respondents (Persons)	Percentage (%)
Good	112	37.97
Fairly Good	84	28.47
Poor	99	33.56
Total	295	100.00

The aspect perceived most positively by respondents was the **function of cooperatives**, particularly their necessity, their ability to meet members' needs, and their role in facilitating post-harvest management. This is reflected in Table 9, which presents the average scores of respondents' perceptions toward various cooperative attributes. These findings support the study conducted by Putra et al. (2020), which concluded that farmers' perceptions of cooperatives were generally categorized as positive, especially regarding the tangible benefits received and the implementation of cooperative activities. However, there are notable

differences between the two studies. In Putra et al. (2020), the respondents were predominantly oil palm farmers, and all respondents were active cooperative members. This indicates that their perceptions were formed from an internal perspective as participants who directly experienced and benefited from the cooperative system.

In contrast, the respondents in the present study were mostly non-members of cooperatives, consisting of former cooperative members or farmers who had only recently begun participating in cooperative activities. Consequently, their perceptions were shaped more from an external perspective as observers rather than as long-term active participants. Despite these differences in respondent characteristics, both studies suggest that cooperatives are generally viewed as important institutions capable of providing practical benefits to farmers.

Table 7. Respondents' Perceptions of Cooperative Attributes

Perception Attribute	Perception Attribute
Cooperative Functions	17.21
Cooperative Management	14.28
Cooperative Success	12.87
Cooperative Institutional Structure	11.07
Overall Mean Score	13.86

Note: Score range = 5–20

The main score of the perception object, which is 17.21, is shown in the aspect of cooperative functions, indicating that this aspect is perceived most positively by the majority of respondents. Moreover, the existence of cooperatives as a business entity is considered necessary for agricultural actors. According to several respondents who had previously used cooperative services, they felt that cooperatives are able to meet members' needs. In addition, post-harvest management becomes easier with the presence of cooperatives, particularly due to access to capital loan services.

Respondents also gave the second-highest score to the cooperative management aspect, which was also

perceived positively. This is mainly related to the accessibility of cooperative services, as they are located close to respondents' residences, have simple requirements, and are managed by familiar individuals. However, despite this positive perception, many respondents argued that cooperative management systems are not yet able to compete effectively in the business sector, and many cooperatives are still not managed in a modern way.

The average score for cooperative success is below the overall average score. This does not necessarily indicate that cooperative performance is generally poor, but rather that it is perceived as weaker in terms of success compared to respondents' expectations. In particular, some respondents stated that cooperatives providing daily necessities are not yet able to compete with other business actors such as minimarkets and small grocery stores. This is evident from the limited number of well-developed cooperatives in Walantaka District, indicating that cooperatives have not yet been proven to significantly improve members' welfare.

The perception object with the lowest average score compared to other aspects is the cooperative institutional structure, which indicates that, in general, cooperatives as agricultural institutions are perceived less favorably by many respondents. This is mainly related to the limited public knowledge about cooperatives as business entities. However, according to most respondents, only a small number of people have sufficient knowledge about cooperatives. Furthermore, the process of establishing a cooperative is also considered relatively complicated. Despite this less favorable perception, most respondents believe that cooperatives are non-profit-oriented organizations.

Some of the findings above are in line with the conclusions of Koib & Simamora (2022), which state that both farmers who are members of cooperatives and those who are not already have good perceptions and knowledge about the importance of agricultural cooperatives. Cooperatives play an important role in agricultural economic activities because they are considered able to help farmers increase production. They also act as intermediaries for farmers in accessing

production inputs, providing capital, delivering extension services, and serving as a platform for collecting and marketing members' agricultural products.

Differences in Perceptions of Cooperatives as Agricultural Institutions

The chi-square test was conducted to compare the observed frequencies with the expected frequencies based on the hypothesis in order to determine whether there are differences in respondents' perceptions of cooperatives according to selected characteristics, namely education level, years of farming experience, and land ownership size. Table 10 presents the cross-tabulation and the results of the chi-square test examining differences in respondents' perceptions based on their education level.

Table 8. Cross-tabulation between Perceptions and Education Level

Education Level	Perception			Total
	Poor	Fairly Good	Good	
SD	69	26	43	138
SMP	19	28	31	78
SMA	11	30	38	79
Total	99	84	112	295

Note: $\chi^2 = 34.556$, $df = 4$

The results of the analysis show that the calculated chi-square value ($\chi^2_{\text{count}} = 34.556$) is greater than the chi-square table value ($\chi^2_{\text{table}} = 9.488$). This indicates that respondents' perceptions of cooperatives as agricultural institutions are not statistically independent of their education level.

It can be interpreted that respondents with higher levels of education tend to have better perceptions of cooperatives as agricultural institutions. This is because more educated individuals are generally more open (cosmopolitan) and are able to understand information more quickly. In addition, higher education makes it easier for farmers to understand concepts related to cooperatives and agricultural institutions.

These findings are consistent with the study by Koib & Simamora (2022), which states that the higher the level of education, the better farmers' perceptions of the importance of agricultural cooperatives.

Table 9. Cross-tabulation between Perceptions and Land Ownership Size

Land Ownership Size	Perception			Total
	Poor	Fairly Good	Good	
(< 0.7)	53	31	46	130
(0.7 – 1.3)	6	32	20	58
(> 1.3)	40	21	46	107
Total	99	84	112	295

Note: *chi-square* (χ^2) = 31.358, df 4

The results of the analysis show that the calculated chi-square value ($\chi^2_{\text{count}} = 31.358$) is greater than the critical chi-square table value ($\chi^2_{\text{table}} = 9.488$). This indicates that respondents' perceptions of cooperatives as agricultural institutions are not statistically independent of land ownership size.

It can be concluded that respondents with larger land holdings tend to have more positive perceptions of cooperatives as agricultural institutions. Farmers with larger land areas are more likely to benefit optimally from cooperative services. For example, in terms of capital loan services, respondents with larger land holdings are more frequently found to utilize cooperative credit facilities, whereas farmers with smaller land areas tend to rely more on family or close relatives for loans, as they feel they do not gain

maximum benefits from cooperative services.

In addition, farmers with larger land holdings generally obtain higher agricultural outputs, which increases their need for cooperatives as providers of agricultural inputs (saprotan /saprodi) and as institutions for marketing agricultural products.

In contrast to these findings, previous research by Nopita et al. (2024) showed that formal education level did not have a significant relationship with farmers' perceptions. This was attributed to the low level of active involvement of respondents in cooperatives, which made the variable statistically insignificant. Similarly, Putra et al. (2020) found that land size was not significantly related to farmers' perceptions, both in terms of cooperative benefits and implementation. This implies that the size of farmers' land holdings is not necessarily associated with their perceptions of oil palm cooperatives.

Table 10. Cross-tabulation between Perceptions and Farming Experience

Farming Experience	Perception			Total
	Poor	Fairly Good	Good	
New	49	11	17	77
Moderate	30	63	86	179
Long	20	10	9	39
Total	99	84	112	295

Note: *chi-square* (χ^2) = 60.040, df 4

The chi-square test results show that the calculated value ($\chi^2_{\text{count}} = 60.040$) is greater than the critical table value ($\chi^2_{\text{table}} = 9.488$). This indicates that respondents' perceptions of cooperatives as agricultural institutions are not statistically independent of farming experience.

It can be concluded that respondents with longer farming experience tend to have more positive perceptions of cooperatives as agricultural institutions. Farmers who have been engaged in farming for a long time are more likely to have used cooperative services, become cooperative members, or rely on cooperatives as an important agricultural institution.

In contrast, respondents with relatively new farming experience are less aware of the benefits of cooperatives or may not yet recognize cooperatives as

business institutions, resulting in generally less favorable perceptions. These findings are consistent with the study by Arman et al. (2024), which found that farming experience significantly influences farmers' perceptions of the use of credit services in improving coffee farming in Sibolangit District. This suggests that farmers with longer experience tend to be more selective in adopting innovations compared to those who are relatively new to farming.

CONCLUSION

Based on the results of the analysis and discussion, several conclusions can be drawn as follows (1) Cooperatives as agricultural institutions are generally perceived positively by farmers; however, a considerable number of respondents still hold negative perceptions of cooperatives. (2) Respondents' perceptions of cooperatives as agricultural institutions are statistically dependent on education level, land ownership size, and farming experience.

Based on the research findings, discussion, and conclusions presented above, several recommendations are proposed (1) Considering that

cooperatives as agricultural institutions are perceived less favorably by farmers with low education levels, small land ownership (less than 1.3 ha), and limited farming experience, efforts to improve perceptions should primarily target these farmer groups. (2) Empirical evidence shows that farmers with higher education levels, more farming experience, and adequate land ownership tend to have more positive perceptions of cooperatives. Therefore, cooperative management is recommended to prioritize these groups in selecting core administrators. This also applies to the newly initiated *Koperasi Desa Merah Putih* program, particularly in the Walantaka District. (3) Most rice farmers in Walantaka District still have limited knowledge about cooperatives. Therefore, several approaches are recommended to improve farmers' understanding, such as utilizing influential local farmers or community leaders to introduce cooperatives in a natural and informal way, conducting community visits (anjangsana), and emphasizing the practical benefits of cooperatives to build trust and acceptance among farmers.

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