

Farmers' perceptions and interest regarding membership in Merah Putih Village cooperative in Sempajaya Village

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ABSTRACT

The Merah Putih Village Cooperative is a strategic government program aimed at strengthening the rural economy through the development of cooperative-based economic institutions. The cooperative's success relies heavily on community participation, particularly from farmers, who are the primary actors in the agricultural sector. Low farmer membership rates in Sempajaya Village, Karo Regency, highlight the need to examine farmers' perceptions of and interest in cooperative membership. This study aims to analyze farmers' perceptions of the Merah Putih Village Cooperative, identify their level of interest in becoming members, and analyze the influence of perception on membership interest. This study employs a quantitative approach using a survey method. Primary data were collected via questionnaires distributed to horticultural farmers in Sempajaya Village, while secondary data were obtained from cooperative records, village government documents, and relevant literature. Descriptive analysis was used to characterize respondents and describe farmers' perceptions and interests, while the relationships between variables were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The results indicate that the majority of farmers are of productive age, possess a secondary education, and have over 10 years of farming experience. Farmers' perceptions of the Merah Putih Village Cooperative are generally positive, with economic benefits rated as the highest-scoring aspect. Interest in cooperative membership is also high, with 79% of respondents falling into the "high" or "very high" categories. SEM-PLS analysis reveals that perception has a positive effect on membership interest, with a path coefficient of 0.72, indicating a strong relationship between the two variables. The study concludes that farmers' perceptions are a crucial factor influencing their interest in joining the Merah Putih Village Cooperative. Therefore, efforts to enhance economic benefits, management transparency, service accessibility, and service quality must be sustained to boost farmer participation and strengthen the cooperative's sustainability as a rural economic institution.

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1. INTRODUCTION

Cooperatives are economic institutions that play a vital role in improving community welfare, particularly for rural farmers. In Indonesia, agricultural cooperatives serve as a vehicle to strengthen farmers' bargaining power by providing production inputs, access to financing, and marketing channels for agricultural produce, as well as facilitating joint business development. Nevertheless, the development of agricultural cooperatives still faces various challenges, such as low member participation, weak governance, and the underutilization of cooperatives as economic institutions capable of enhancing farmers' competitiveness (Arifin, 2018).

In an effort to strengthen the rural economy, the government launched the *Merah Putih* Village Cooperative Program as a national strategic initiative. This program aims to build independent, productive, and sustainable village economic institutions by strengthening cooperatives as hubs for community economic activity. The *Merah Putih* Village Cooperatives are expected to function not merely as savings and loan institutions but also to provide agricultural production inputs, strengthen produce marketing systems, and open up access to financing and other economic services.

In Karo Regency—a major center for horticultural production in North Sumatra—the *Merah Putih* Village Cooperative Program is being implemented in various villages, including Sempajaya Village. Given that the area is dominated by horticultural farmers, the presence of these cooperatives is expected to boost productivity, improve farming efficiency, and enhance farmers' well-being. However, although the *Merah Putih* Village Cooperative in Sempajaya Village has been operational for approximately one year, the number of members remains relatively low compared to the total potential pool of farmers in the area.

The low level of membership indicates that farmer participation in the cooperative remains suboptimal. Farmers' decisions to join the cooperative are influenced by various factors, one of which is their perception of the cooperative's existence and performance. Perceptions regarding economic benefits, trust in cooperative management, ease of accessing services, and past experiences can shape farmers' interest in becoming members. A positive perception of the cooperative increases the likelihood of farmers choosing to join (Astuti, 2019).

Previous studies indicate that perceptions influence the decision to participate in cooperative institutions. Research by Haryanto et al. (2018) shows that the perception of economic benefits is a primary factor influencing the success of agricultural cooperatives. Kurniawan et al. (2019) found that perceived benefits and levels of trust significantly affect the decision to become a cooperative member. Furthermore, Mulyani et al. (2022) stated that positive public perception can boost interest in participating in cooperative activities. However, research specifically examining the relationship between farmers' perceptions and their interest in membership regarding the Merah Putih Village Cooperative—particularly in Karo Regency—remains very limited.

Given this context, this study aims to analyze farmers' perceptions of the Merah Putih Village Cooperative, determine their level of interest in membership, and analyze the influence of these perceptions on membership interest in Sempajaya Village, Karo Regency. The findings are expected to provide valuable insights for cooperative management and local government in formulating strategies to enhance farmer participation, thereby enabling the Merah Putih Village Cooperative to function optimally as a driver of the village economy.

2. METHOD

2.1 Place and time of research

This study was conducted in Sempajaya Village, Karo Regency, North Sumatra Province. The research location was selected purposively, based on the fact that Sempajaya Village is a horticultural production area in Karo Regency and is home to the Merah Putih Village Cooperative, which serves as the subject of this study. The existence of this cooperative provided the basis for examining farmers' perceptions and interest regarding cooperative membership as a means of strengthening the village's economic institutions. The research was carried out from April to June 2026, encompassing activities such as research preparation, instrument development, data collection, data processing, analysis of results, and report writing.

2.2 Types and Sources of Data

This study employs a quantitative approach using a survey method. The data utilized consist of both primary and secondary data. Primary data were obtained directly from respondents through the distribution of questionnaires to horticultural farmers in Sempajaya Village, Karo Regency. The respondents comprised farmers who were already members of the Merah Putih Village Cooperative and those who were not. The collected primary data covered respondent

characteristics (age, education level, farming experience, land area, commodity type, and cooperative membership status), farmers' perceptions of the cooperative, and their interest in becoming cooperative members.

Secondary data were obtained from various supporting sources, such as Merah Putih Village Cooperative documents, the Sempajaya Village profile, data from relevant agencies, and scientific literature—including journals, books, and other reference materials—relevant to the study.

2.3 Population and Sample

The population for this study consists of all horticultural farmers in Sempajaya Village, Karo Regency. The sample was selected using a purposive sampling technique, whereby respondents were chosen based on specific criteria aligned with the research objectives.

The criteria for respondents in this study are as follows:

Farmers engaged in horticultural farming activities in Sempajaya Village.

Farmers aware of the existence of the Merah Putih Village Cooperative.

Farmers willing to provide information via the research questionnaire.

The sample size for this study comprises 91 horticultural farmers. These respondents were selected to gather information regarding farmers' perceptions of the cooperative and their interest in becoming members of the Merah Putih Village Cooperative.

2.4 Research Variables and Operational Definitions

This study employs two primary variables: the independent (exogenous) variable and the dependent (endogenous) variable. The independent variable is the farmers' perception of the Merah Putih Village Cooperative (X), while the dependent variable is the farmers' interest in cooperative membership (Y).

Farmers' perception is defined as the farmers' assessment, understanding, and views regarding the existence and benefits of the Merah Putih Village Cooperative. This perception variable is measured through four indicators: economic benefits, trust, ease of access to services, and perception of cooperative programs. The economic benefits indicator reflects farmers' perceptions of the cooperative's ability to provide production inputs, assist in marketing agricultural produce, and increase farmers' income. The trust indicator relates to the level of confidence farmers have in the cooperative's management, transparency, and the administrators' organizational capabilities. The ease of access indicator captures farmers' perceptions regarding the ease of obtaining information, services, and facilities provided by the cooperative. Meanwhile, the cooperative program indicator reflects farmers' assessment of how well the cooperative's programs and activities align with the needs of horticultural farmers.

The variable representing farmers' interest in cooperative membership is defined as the farmers' inclination, desire, and readiness to join and participate in the Merah Putih Village Cooperative. This variable is measured using four indicators: interest in becoming a member, desire to join, willingness to participate in cooperative activities, and willingness to recommend the cooperative to other farmers. All indicators for both research variables are measured using a five-point Likert scale, where a score of 1 indicates Strongly Disagree (STS), 2 indicates Disagree (TS), 3 indicates Moderately Agree (CS), 4 indicates Agree (S), and 5 indicates Strongly Agree (SS).

2.5 Data Analysis Technique

Data analysis in this study was conducted using the Structural Equation Modeling–Partial Least Squares (SEM-PLS) method with the aid of SmartPLS 4 software. The SEM-PLS method was selected for its ability to analyze relationships between latent variables and to test the influence of farmers' perceptions on their interest in becoming members of the Merah Putih Village Cooperative. The structural model used in this study is formulated as follows:

$$Y = \beta X + \zeta \quad (1)$$

Where:

Y = Farmers' interest in Merah Putih Village Cooperative membership

X = Farmers' perception of the Merah Putih Village Cooperative

β = Path coefficient indicating the magnitude of the influence between variables

ζ = Residual or model error (error term)

The SEM-PLS analysis stages in this study included descriptive analysis, measurement model evaluation (outer model), and structural model evaluation (inner model). Descriptive analysis was used to describe respondent characteristics and provide an overview of the levels of farmers' perception and interest based on frequency distributions, percentages, and the mean values of respondents' answer scores.

Measurement model evaluation (outer model) was conducted to ensure that the research indicators could measure the latent constructs validly and reliably. Convergent validity testing was performed by examining outer loading values (≥ 0.70) and Average Variance Extracted (AVE)

values (> 0.50). Discriminant validity was assessed to ensure that each construct was sufficiently distinct from the others. Furthermore, construct reliability was tested using Cronbach's Alpha and Composite Reliability values, with a criterion of > 0.70 .

Structural model evaluation (inner model) was conducted to determine the relationships between latent variables in the study. This evaluation involved using the R-square (R^2) value to assess the perception variable's ability to explain the variation in farmers' interest, the path coefficient value to determine the direction and magnitude of the influence of perception on cooperative membership interest, and hypothesis testing using the bootstrapping procedure. The research hypothesis is accepted if the t-statistic value is > 1.96 or the p-value is < 0.05 at a 5% significance level. The hypotheses tested in this study are:

H0: Farmers' perceptions do not have a significant effect on the interest in becoming members of the Merah Putih Village Cooperative.

H1: Farmers' perceptions have a positive and significant effect on the interest in becoming members of the Merah Putih Village Cooperative.

3. RESULTS AND DISCUSSION

3.1 Respondent Characteristics

The study respondents consisted of horticultural farmers in Sempajaya Village, Karo Regency. Respondent characteristics were analyzed to provide an overview of the farmers' socio-economic conditions, which could influence their perceptions of and interest in membership with the Merah Putih Village Cooperative. The characteristics examined included age, education level, farming experience, land area, types of commodities cultivated, and cooperative membership status. Survey results indicate that the majority of respondents fall within the productive age range (25–55 years), suggesting a strong capacity to adopt institutional innovations and pursue new business opportunities. Regarding education, most farmers are high school graduates, indicating sufficient capacity to understand the benefits and operational mechanisms of the cooperative.

Table 1. Distribution of Respondents by Age

Age Group	Percentage (%)	Respondents (Persons)
< 35 years	18	16
36–45 years	35	32
46–55 years	29	26
> 55 t years	18	17
Total	100	91

Source: Processed primary data, 2026.

In terms of farming experience, the majority of respondents have been engaged in farming for over a decade. This indicates that the farmers possess significant experience in navigating various farming challenges, such as price fluctuations and limited market access. Consequently, the cooperative serves as an institutional alternative expected to assist farmers in enhancing operational efficiency and improving family welfare.

Furthermore, the primary commodities cultivated by the farmers include potatoes, cabbage, carrots, tomatoes, and chili peppers—all of which are key horticultural crops in Karo Regency. These characteristics serve as a crucial foundation for developing the Merah Putih Village Cooperative's business programs, ensuring they are tailored to the specific needs of local horticultural farmers.

Age Distribution of Respondents
Percentage of Farmers by Age Group (n = 91).

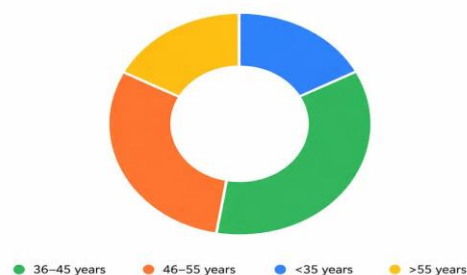


Figure 1. Age Distribution of Respondents

The research results indicate that the majority of respondents are of productive age and possess extensive farming experience. This suggests that farmers in Sempajaya Village have a strong capacity to adopt institutional innovations and participate in cooperative development. Farmers of productive age are generally more open to change and better able to access information and business opportunities compared to older age groups.

These findings align with research by Sari et al. (2019), which states that productive age and higher levels of education positively influence farmer participation in rural economic institutions. Research by Prasetyo and Widodo (2021) also found that farming experience serves as a crucial asset when farmers decide whether to join economic organizations, including agricultural cooperatives.

The fact that the majority of respondents are high school graduates indicates that the farmers possess sufficient ability to understand the benefits and mechanisms of cooperatives. According to research by Putri et al. (2020), formal education contributes to farmers' ability to comprehend institutional innovations, thereby increasing the likelihood of success for cooperative-based empowerment programs.

3.2 Farmers' Perceptions of the Merah Putih Village Cooperative

Farmers' perceptions were analyzed based on four key indicators: economic benefits, trust, ease of access to services, and perceptions of cooperative programs. The research findings indicate that the economic benefits indicator received the highest score compared to the other indicators. This suggests that farmers place greater weight on the tangible benefits derived from the cooperative than on purely institutional aspects.

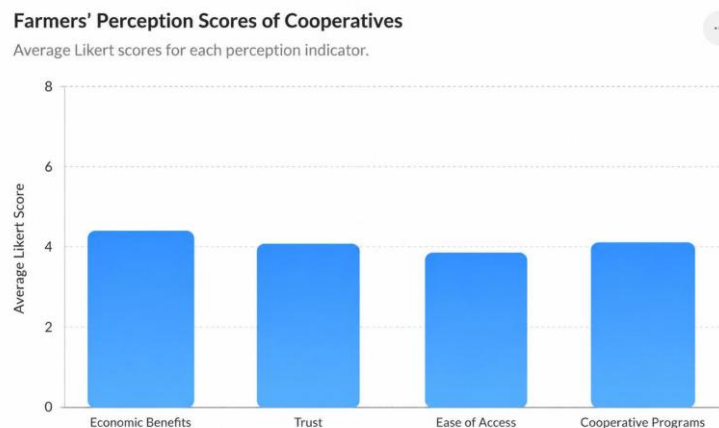


Figure 2. Farmers' Perception Scores of Cooperatives

Table 2. Average Farmer Perception Scores regarding Merah Putih Village Cooperative

No.	Perception Indicator	Average Score	Category
1	Economic benefits	4,35	Very Good
2	Trust	4,12	Good
3	Ease of access	3,98	Good
4	Cooperative programs	4,08	Good
	Overall Average	4,13	Good

Source: Processed primary data, 2026.

Category key: 1,00–1,80 = Very Poor; 1,81–2,60 = Poor; 2,61–3,40 = Fair; 3,41–4,20 = Good; 4,21–5,00 = Very Good

A high score for economic benefits indicates that farmers expect cooperatives to play a role in supplying production inputs, marketing agricultural produce, and increasing farm income. Meanwhile, the "ease of access" indicator received the lowest score, although it still fell within the "good" category. This highlights the need for improved outreach and service delivery by cooperatives to the community.

These findings support the research of Haryanto et al. (2018), which states that the perception of economic benefits is a dominant factor determining the success of agricultural cooperatives. The greater the benefits perceived by farmers, the higher their level of acceptance of the cooperative.

Research by Wulandari et al. (2022) also found that cooperatives capable of providing production inputs and assisting with the marketing of agricultural produce garnered higher levels of member trust compared to cooperatives that functioned solely as savings and loan institutions.

Regarding trust, the results indicate that farmers have a reasonably high level of confidence in cooperative management. This aligns with the study by Nuryanti and Swastika (2017), which identifies trust as a key form of social capital in the development of farmer institutions. Without trust, it is difficult to boost member participation, even if the cooperative offers various attractive programs.

Furthermore, the results indicate that ease of access to services is a crucial factor in shaping farmers' perceptions. Research by Rahman et al. (2023) found that easy access to information and prompt service delivery can enhance the community's positive perception of village cooperatives.

3.3 Farmers' Interest in Cooperative Membership

Farmers' interest in cooperative membership was analyzed based on indicators such as level of interest, desire to join, willingness to participate, and likelihood of recommending membership to other farmers. The research findings indicate that the majority of respondents possess a high level of interest in becoming cooperative members.



Figure 3. Cooperative Interest Level Category

Table 3. Farmers' Level of Interest in Becoming Members of the Merah Putih Village Cooperative

No.	Interest Category	Percentage (%)	Number of Respondents (People)
1	Very High	42	38
2	High	37	34
3	Moderate	15	14
4	Low	6	5
	Total	100	91

Source: Processed primary data, 2026.

A total of 79% of respondents fell into the high and very high categories. These findings indicate that farmers have a significant interest in the Merah Putih Village Cooperative. This high level of interest is driven by farmers' expectations regarding the economic benefits they could gain from cooperative membership.

These findings align with research by Sutrisno et al. (2020), which states that economic benefits are the primary motivation for farmers when deciding whether to join a cooperative. Farmers are inclined to join when they perceive opportunities for increased income and improved farming efficiency.

Research by Yuliana et al. (2021) also demonstrates that a cooperative's success in delivering direct benefits to its members influences the growth of its membership base. This suggests that the most effective form of promotion for a cooperative is its own success in providing benefits to its members.

The farmers' high willingness to participate in cooperative activities also reflects the presence of strong social capital at the village level. According to research by Arifin et al. (2018), active community participation is a crucial factor in ensuring the sustainability of community-based economic institutions.

Furthermore, the farmers' strong desire to recommend the cooperative to others indicates potential for membership expansion through the farmer group (*Poktan*) approach. These results support the findings of Firmansyah et al. (2024), which state that social networks among farmers play a significant role in expanding cooperative membership in rural areas.

3.4 The Influence of Perception on Membership Interest

An analysis of the relationship between perception and membership interest reveals a positive influence between the two variables. The more favorable the farmers' perception of the cooperative, the greater their interest in becoming members. SEM-PLS analysis results indicate that the perception variable has a direct influence on membership interest, with a path coefficient of 0.72. This value signifies a strong relationship between perception and the farmers' interest.

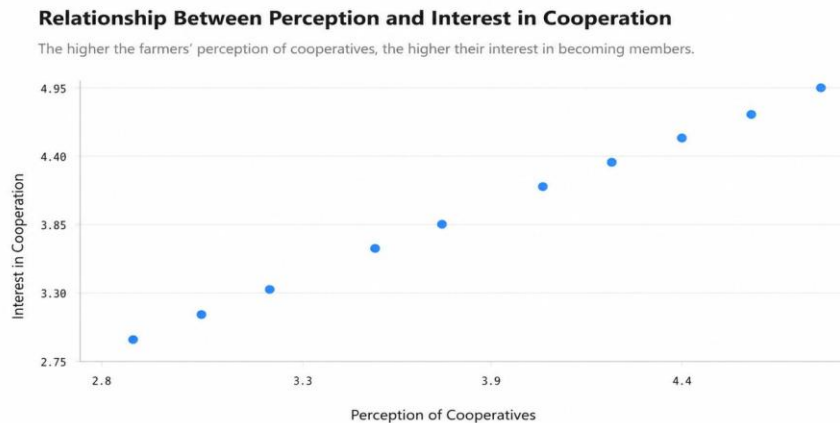


Figure 4. Relationship Between Perception and Interest in Cooperation

Based on these results, it is evident that perception is a primary factor influencing farmers' decisions to join the cooperative. Therefore, the development strategy for the Merah Putih Village Cooperative should focus on enhancing economic benefits, management transparency, and service quality for members; this will foster increasingly positive public perception and drive growth in cooperative membership.

Table 4. Relationship between Farmers' Perceptions and Interest in Merah Putih Village Cooperative Membership

No.	Perception Score (X)	Interest Score (Y)
1	2,8	2,9
2	3,0	3,1
3	3,2	3,3
4	3,5	3,6
5	3,7	3,8
6	4,0	4,1
7	4,2	4,3
8	4,4	4,5
9	4,6	4,7
10	4,8	4,9

Source: Processed primary data, 2026.

These research findings also support the study by Kurniawan et al. (2019), which found that the perceived benefits of a cooperative significantly influence the public's decision to become members. That study identified economic benefits and trust as key determinants in shaping interest in membership.

Research conducted by Mulyani et al. (2022) similarly found that positive perception boosts public willingness to participate in various cooperative activities. Their results indicate that any increase in positive perception is accompanied by a rise in member interest and participation.

In the context of Sempajaya Village, these findings suggest that strategies to increase membership in the Merah Putih Village Cooperative should prioritize fostering positive public perception by providing tangible economic benefits, strengthening management transparency, and developing business units that align with the needs of horticultural farmers. Consequently, improving perception will not only heighten interest in joining but also reinforce the cooperative's sustainability as a village economic institution.

4. CONCLUSION

The results of this study conclude that horticultural farmers in Sempajaya Village have a good perception of the Merah Putih Village Cooperative, with an overall perception score of 4.13. The economic benefit indicator obtained the highest score, indicating that farmers consider the cooperative's role in providing production inputs, marketing support, and improving farm income as the main benefit. Farmers' interest in becoming cooperative members was categorized as high, with 79% of respondents included in the high and very high categories. SEM-PLS analysis showed that farmers' perceptions had a positive influence on membership interest, with a path coefficient of 0.72. This indicates that improving farmers' perceptions through increased economic benefits, service accessibility, and transparent cooperative management can encourage greater participation in cooperative membership. Therefore, strengthening the role and performance of the Merah Putih Village Cooperative is essential to increase farmer participation and support the sustainability of village-based economic institutions in Sempajaya Village, Karo Regency.

The management of the Merah Putih Village Cooperative is advised to improve service quality, strengthen management transparency, and develop business units that provide direct economic benefits to farmers. Effective cooperative performance will increase farmers' trust and encourage greater participation in membership. Furthermore, village governments and related institutions should support cooperative institutional strengthening through continuous training, guidance, and assistance to ensure that the cooperative develops into an independent and sustainable village economic institution. Future research is recommended to incorporate other factors that may influence farmers' interest in cooperative membership.

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