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Research Article

The Relationship between Agricultural Extension Workers and Improving the Competence of Rice Farmers in Mangki Village, Cempa District, Pinrang Regency

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ABSTRACT

This research aims to identify the relationship between agricultural extension workers and the improvement of rice farmer competency in Mangki Village, Cempa District, Pinrang Regency. To achieve this goal, the researcher used a quantitative method. This research involved 458 rice farmers, with a sample of 115 people determined through simple random sampling. Data were obtained through documentation, questionnaires, and interviews. The data obtained from this research were then processed. Data analysis was carried out using descriptive statistics, normality tests, and Kendall's Tau-b correlation analysis to determine the relationship between variables. The findings of this research state that the role of agricultural extension workers as dynamists, motivators, facilitators, communicators, and educators does not have a significant correlation with rice farmer competency. This is influenced by the low intensity of the presence and involvement of extension workers in agricultural activities, so that efforts to improve farmer competency are not optimal. Thus, it is necessary to increase the frequency of visits and the active role of extension workers to develop the competency of rice farmers in Mangki Village more optimally.

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1. Introduction

Because the agricultural sector is the foundation of the national economy, Indonesia is known as an agricultural country. To increase exports of high-quality agricultural products, reduce dependence on imported agricultural products, and ensure community food security, the agricultural sector is crucial (Abdullah et al., 2021). One such important and strategic product is paddy rice, which is not only a staple food for Indonesians but also serves as a primary source of income for rural farmers who depend on the agricultural sector. Therefore, farmers' ability to manage their land effectively and efficiently, which in turn increases production and income, is crucial for the success of agricultural development in Indonesia.

However, the reality on the ground shows that agricultural extension still faces several challenges, such as a limited number of extension workers and inadequate facilities and infrastructure (Nursyamsi, 2023). Furthermore, suboptimal interaction between extension workers and farmers has resulted in low farmer participation in extension activities (Amalia, 2022). Consequently, farmer participation is low and the transfer of knowledge and skills needed to increase farm productivity is not optimal. This undoubtedly hampers the progress of the agricultural sector. Pinrang Regency, particularly Mangki Village in Cempa District, is one of the main rice production centers in South Sulawesi. Although the ratio of extension workers is nearly one per village, several obstacles remain, such as limited visiting schedules and ineffective communication with farmers (Arifin et al., 2022). This issue highlights the need for further investigation to identify how the role of agricultural extension workers can influence the competency improvement of rice farmers in Mangki Village, thereby strengthening agricultural development and food security in the region.

This research aims to explore the correlation between the function of agricultural extension workers and the improvement of rice farmer competency. Farmer competency encompasses skills and knowledge in managing agricultural businesses effectively and sustainably (Andriani, 2022). Competency improvement is also influenced by farmers' ability to implement innovations or new technologies that support sustainable practices (Wulandari, 2023). Agricultural extension workers have a multifaceted role as dynamic facilitators, motivators, facilitators, communicators, and educators who support the learning process and farmer empowerment (Abdullah, 2021). This role also includes mentoring farmers in behavioral change and capacity building through extension activities (Putri et al., 2023). Furthermore, the effectiveness of extension workers in improving farmer competency is influenced by their ability to develop communication methods and participatory approaches (Santoso et al., 2024). Knowles' (2018) andragogy theory serves as a theoretical foundation for understanding how adults, such as farmers, learn and develop skills. The andragogy approach is relevant in the extension context because it emphasizes active farmer involvement through discussions, demonstrations, and direct experience.

2. Method

Quantitative methods were used in this study to explore the correlation between the function of agricultural extension workers and the improvement of rice farmer competencies in Mangki Village. The quantitative approach was used to obtain structured and statistically analyzable data, aiming to describe the collected data without drawing general conclusions (Sugiyono, 2019). A sample of 115 respondents was selected using a basic random sampling procedure from a population of 458 rice farmers in this study (Ghozali, 2018). A random sample of 115 farmers, or 25% of the total population of 458 farmers from 10 farmer groups, was selected, ensuring that each member of the population had an equal chance of being selected. A representative sample is a sample that represents 25% of a population greater than 100, according to Arikunto (2006). Using SPSS 30 software, data were collected through surveys, interviews, and documentation. Descriptive statistics, the Shapiro-Wilk normality test, and the Kendall's Tau-b correlation test were then used for analysis. Because the research sample was smaller than 200, the Shapiro-Wilk test was chosen, supporting Ghozali's (2018) assertion that this test works well with small samples. If the significance value is higher than 0.05, the data is considered normally distributed.

To assess the direction and strength of the relationship between ordinal variables, Kendall's Tau-b correlation analysis was used. This method was chosen because the data obtained are ranked (ordinal) and often contain similar values (ties), making Kendall's Tau-b more stable and accurate than other correlation methods. Testing will be conducted using SPSS 30. The Kendall's Tau-b correlation coefficient is needed to measure the level of correlation between the function of agricultural extension workers (X), which consists of five indicators: dynamizer, facilitator, motivator, communicator, and educator, and farmer competency (Y), which is measured based on knowledge and skills (Siregara et al., 2024).

3. Results and discussion

This research finding indicates that the role of agricultural extension workers in Mangki Village is still not optimal. Extension workers play a crucial role in providing guidance and assistance to farmers, but implementation has been suboptimal due to several challenges. One of the most prominent challenges is the unscheduled visits by extension workers. Generally, extension workers only visit farmers' fields when problems such as pest attacks or crop failures occur. This situation results in low levels of interaction between extension workers and farmers, resulting in a lack of sustainable information dissemination and knowledge transfer.

Furthermore, the extension methods used are still limited to face-to-face meetings with verbal delivery. While this approach is effective in building interpersonal relationships between extension workers and farmers, it is still inadequate in terms of broader information dissemination. Extension workers have not utilized technology such as digital media or agricultural applications that could expedite the information dissemination process. These findings align with research by Fadhillah (2022), which emphasizes the need for agricultural extension workers to utilize various methods, including technology and effective communication, to more easily reach farmers and improve learning outcomes.

The extension materials presented are also situational, meaning they are tailored to crop conditions or the problems farmers are currently facing. As a result, farmers' knowledge is limited to short-term technical aspects and does not address modern agricultural innovations oriented towards long-term competency improvement. Extension workers should not only provide solutions to current problems but also provide education on innovation, sustainable land management, and the use of modern agricultural tools, as explained by Abdullah et al. (2021), who argue that agricultural extension workers play a crucial role in improving farmers' abilities to adapt to increasingly advanced agricultural technology.

In terms of farmer competency, research shows that most farmers in Mangki Village have considerable experience in farming, particularly in rice cultivation. They understand basic land preparation, planting, fertilization, and pest control. However, their understanding of sustainable agriculture, the use of organic fertilizers, and the application of modern technology remains low. This indicates the need to improve farmers' capacity so they can adopt new innovations in their farming activities.

Meanwhile, in terms of skills, farmers in Mangki Village still rely on inherited practices for land management. They are not yet fully capable of implementing modern agricultural techniques due to limited knowledge and a lack of ongoing mentoring from extension workers. This situation reinforces the research finding that farmer competence is not solely determined by experience, but also by the direction and active role of extension workers in providing guidance to farmers.

The statistical analysis also showed that the relationship between the role of agricultural extension workers and the improvement of rice farmer competence in Mangki Village was not statistically significant. However, this finding does not imply that extension workers have no influence at all, but rather indicates that other factors contribute to the improvement of farmer competence. These factors include farmers' personal experience, support from farmer groups, and access to agricultural technology and information. This finding aligns with research by Sunandar (2019), which states that the improvement of farmer competence is not solely driven by extension workers, but also by farmer independence and support from the social environment.

Overall, this research finding confirms that although extension workers play a crucial role in the farmer empowerment process, the effectiveness of this role still needs to be improved. More adaptive, sustainable extension strategies that utilize technology are needed so that extension workers can be more effective in helping farmers improve their competence, both in terms of knowledge and skills. In this way, farmers can be better prepared to face challenges and opportunities in their farming activities.

4. Conclusion

Based on the findings of this research on the relationship between the role of agricultural extension workers and the improvement of rice farmer competency in Mangki Village, Cempa District, Pinrang Regency, it can be concluded that the role of agricultural extension workers is still not optimal. Limited unscheduled visits by extension workers, which are only conducted when there are problems in the field, such as pest attacks or crop failures, result in less intensive interaction with farmers. Furthermore, the extension methods used are still limited to direct face-to-face meetings without the use of technology, so that the material presented focuses more on short-term solutions and does not include long-term knowledge development. Meanwhile, farmer competency in terms of knowledge and skills is at a moderate level, where farmers have a basic understanding of rice cultivation but are still lacking in the application of modern agricultural technology and techniques. The results of the Kendall's Tau-b correlation analysis indicate that the correlation between the role of agricultural extension workers and the improvement of farmer competency is not statistically significant, indicating that the improvement of farmer competency is influenced by other factors such as personal experience, support from farmer groups, and access to technology. Therefore, it is necessary to improve the effectiveness of the role of agricultural extension workers to be more active, scheduled, and adaptive in helping farmers develop their abilities and skills in rice cultivation.

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