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Analysis of Farmer Satisfaction with the Performance of Agricultural Extension in Simpanggambir Village, Linggabayu District, Mandailing Natal Regency

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A B S T R A C T

This study aims to analyze the level of farmers' satisfaction with the performance of agricultural extension services in Simpanggambir Village, Linggabayu District, Mandailing Natal Regency. The research employed a descriptive method with a quantitative approach. The study location was determined purposively. The population consisted of 108 farmers who were members of farmer groups, with a sample of 31 respondents selected using the Slovin formula. Data collection techniques included interviews, observations, and questionnaires. Data analysis was conducted using a Likert scale with a scoring method. The results show that the level of farmers' satisfaction with the performance of agricultural extension services falls into the good category. The dimensions of satisfaction, including reliability, responsiveness, empathy, assurance, and tangibles, show relatively high results. However, several constraints remain, such as limited facilities and infrastructure, low farmer participation, and suboptimal human resource quality. Therefore, improving the quality of extension services is necessary to support sustainable agricultural development

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INTRODUCTION

The agricultural sector plays a crucial role in economic development, particularly in developing countries like Indonesia (Ministry of Agriculture, 2020). In addition to providing food, this sector is also a primary source of livelihood for rural communities. Agricultural extension is a strategy to increase farmer productivity and capacity through a continuous learning process (Lestari, 2011). Agricultural extension workers act as facilitators, educators, and motivators in helping farmers adopt agricultural technology innovations (Rusdianto, 2019). However, in its implementation, extension activities still face various obstacles, such as limited human resources, inadequate infrastructure, and low farmer participation (Adijaya, 2024). These conditions can impact farmer satisfaction with extension services. Mandailing Natal Regency is a center for the agricultural sector. The agricultural sector is a key driver of the economy. This sector plays a crucial role in driving the economy in Mandailing Natal Regency.

LITERATURE REVIEW

Simpanggambir Village is one of the villages located in Mandailing Natal Regency. The community's primary livelihood is farming, making this sector the largest contributor to income. This village has one Agricultural Extension Center (BPP) and seven Farmer Groups. Based on the identification of agricultural extension needs, the identification of work area conditions, and the situation of farmers/farmer groups, when linked to the situation analysis, it can be seen that the participation of Farmer Group Administrators and Members in each extension activity is still very minimal, infrastructure is still limited, capital is limited, human resources are still low, and production is suboptimal.

Farmer satisfaction with extension activities is one parameter of extension success. Farmer satisfaction influences farmers' discipline in accepting and using recommended technologies. The widespread implementation of technology results in increased farm productivity, thereby improving farmer welfare. Farmer satisfaction with extension services is primarily determined by the extent to which existing extension services meet their needs and increase their capacity (Haris Simatupang, 2017).

Farmer satisfaction is an important indicator in assessing the quality of extension services. According to Kriyantono (2006), satisfaction levels can be measured through respondents' perceptions of the quality of services provided. Therefore, this study was conducted to analyze farmers' satisfaction levels with the performance of agricultural extension services.

METHODOLOGY

This research was conducted in Panyabungan Timur District, Mandailing Natal Regency, in May 2025. The location was selected purposively, considering that the area had farmer group dynamics relevant to the study. The population in this study consisted of 70 farmer group members. The Slovin formula was used to determine the minimum sample size, resulting in a total of 41 respondents (Umar, 2002). The sampling technique used was purposive sampling, based on the researcher's considerations to ensure it aligns with the research objectives

(Rozaini, 2003). Furthermore, the sample size was distributed proportionally among each farmer group (Sugiarto, 2003).

The data used consisted of primary and secondary data. Primary data were obtained through interviews using a structured questionnaire, direct field observation, and documentation (Daniel, 2002; Adimiharja & Hikmat, 2001; Hasan, 2002). Meanwhile, secondary data was obtained from various sources such as literature, journals, and related documents (Sugiyono, 2015). The data analysis methods used were qualitative descriptive analysis and descriptive statistics, which describe and summarize conditions based on data obtained in the field (Winartha, 2006; Sugiyono, 2012). To measure respondents' perceptions, a Likert scale was used, classifying answers into low, medium, and high categories (Kriyantono, 2006). The data was then processed using a scoring method to obtain an average value that reflects respondents' level of assessment of the research variables (Zubaidah, 2011).

RESULTS AND DISCUSSION

Overview of Research Location

Simpanggambir Village is administratively located within the Lingga Bayu District, Mandailing Natal Regency, North Sumatra Province. This village is geographically strategic, situated in a lowland area surrounded by agricultural areas, plantations, and residential areas. The majority of residents in Simpanggambir Village are farmers, cultivating rice, corn, oil palm, and rubber as their primary crops.

The agricultural system remains largely traditional, but is shifting toward more intensive management through agricultural extension programs and assistance with production facilities. Infrastructure-wise, the village has adequate road access, as well as educational facilities and basic public services. Institutionally, several farmer groups actively serve as collaborative platforms for farmers in managing their farms and implementing government agricultural programs.

Farmer Satisfaction with the Role of Agricultural Extension

Reliability (Trustworthiness)

Reliability can be defined as the provision of new information from agricultural extension workers to each member of a farmer group. This trustworthiness refers to the reliability of service delivery (Basri, 2017). Farmer satisfaction with the trustworthiness indicator aims to influence the level of farmer satisfaction with the role of agricultural extension workers, including their trustworthiness and responsiveness in meeting their needs. This trustworthiness can be seen in the table below.

Table 1. Farmer Reliability (trustworthiness) in the Role of Agricultural Extension

No	Indikator	Skor
1	Penyuluh Mengundang Petani untuk menghadiri Pertemuan Kelompok tani	3,81
2	Kehadiran penyuluh pertanian pada kegiatan petani	3,62
3	Kemampuan penyuluh menjalin kemitraan	4,06
	Rata-rata	**3,83**

Based on the research results, farmer satisfaction with agricultural extension services, based on the reliability (trust) indicator, was in the satisfactory category, with an average score of 3.83. This indicates that farmers generally have good confidence in the performance of extension workers. The indicator with the highest score was the ability of extension workers to establish partnerships (4.06), reflecting success in building cooperative relationships with farmers and related parties. Meanwhile, the indicator encouraging farmers to participate in extension activities received a score of 3.81, which is considered good. However, the indicator of extension worker presence in farmer activities received the lowest score (3.62), indicating that the intensity of extension worker presence still needs to be improved. Therefore, although the reliability aspect is considered good, increasing the consistency of extension worker presence is still necessary to strengthen farmer trust.

Responsiveness

Responsiveness is an important dimension in measuring service satisfaction, including in the context of agricultural extension. According to the service quality theory of Parasuraman, Zeithaml, and Berry (SERVQUAL model), responsiveness refers to the willingness and speed with which officers assist and respond to the needs or complaints of service recipients. In the context of extension services, this responsiveness is reflected in extension workers inviting farmers to attend farmer group meetings, the presence of agricultural extension workers at farmer activities, and the ability of extension workers to build partnerships. Farmer responsiveness to the role of agricultural extension services can be seen in the table below.

Table 2. Farmer Responsiveness to the Role of Agricultural Extension Services

No	Indikator	Skor
1	Penyuluh dalam memberikan pelayanan dalam kegiatan pertanian	4,26
2	Frekuensi kehadiran penyuluh dalam kegiatan penyuluhan pertanian	4,16
3	Penyuluh menanyakan masalah yang di hadapi petani dan mencarikan solusinya	4,26
	Rata-rata	**4,23**

Based on the research results, farmer satisfaction with the responsiveness indicator was in the very satisfied category, with an average score of 4.23. This indicates that extension workers responded quickly and appropriately to farmers' needs. The highest indicator was the ability of extension workers to provide services and help resolve farmer problems, with a score of 4.26. Meanwhile, the frequency of extension worker attendance scored 4.16, which, although considered very good, still has room for improvement. Overall, extension workers were deemed responsive in carrying out their roles, thereby increasing farmer trust and comfort.

Empathy

According to Parasuraman, Zeithaml, and Berry (1988), empathy is a dimension that describes the extent to which extension workers demonstrate concern, personal attention, and understanding of farmers' specific conditions and needs. In the context of agricultural extension, empathy is reflected in the extension workers' ability to listen to farmers' concerns, be friendly, approachable, and adapt their communication approach to the farmers' characteristics. Farmer satisfaction with this aspect will increase when extension workers not only provide technical information but also demonstrate emotional involvement and psychological support, especially when farmers face farming challenges such as crop failure, pest attacks, or capital difficulties. If farmers feel that extension workers treat them personally and care about the sustainability of their farming businesses, their trust and satisfaction with extension services will grow stronger. Indicators of farmer empathy toward the role of agricultural extension are shown in the table below.

Table 3. Farmer Empathy toward the Role of Agricultural Extension

No	Indikator	Skor
1	Sikap penyuluh apabila petani mendapat masalah dalam usaha taninya	4,10
2	Penyuluh Menghadiri Pertemuan/Musyawarah yang diselenggarakan oleh Kelompok tani	2,65
3	Mengajarkan berbagai keterampilan usaha tani serta melakukan bimbingan dan penerapannya	4,23
	Rata-rata	**3,66**

Based on the research results, farmer satisfaction with the empathy indicator was in the satisfactory category, with an average score of 3.66. This indicates that extension workers are quite capable of providing attention to farmers, particularly in the form of technical guidance and farming skills development, which received the highest score (4.23). Furthermore, the extension workers' response to farmer concerns was also rated as good, with a score of 4.10. However, the presence of extension workers in farmer group deliberations was still low, with a score of 2.65, indicating a lack of direct social involvement. Therefore, although extension workers' empathy in technical aspects is good, social interaction and attendance at farmer group activities need to be improved.

Assurance

Assurance is an important dimension of service quality according to the SERVQUAL model, reflecting the ability, confidence, and credibility of service providers in providing a sense of security to service recipients (Parasuraman et al., 1988). In the context of agricultural extension, assurance encompasses the extension worker's competence in conveying information, the clarity of the extension material, and a professional attitude that fosters farmer trust in the extension worker as a source of information and agricultural business support. Farmer satisfaction with this dimension will be high if the extension worker demonstrates mastery of the material, consistency in their assistance, and the ability to convince farmers that the technical advice provided is appropriate and can improve their farming yields. The table below provides more clarity on farmer assurance regarding the role of agricultural extension.

Table 4. Farmer Assurance Regarding the Role of Agricultural Extension

No	Indikator	Skor
1	Tingkat kemampuan penyuluh dalam meningkat kan produktivitas komoditi usaha tani padi	4,00
2	Kemampuan penyuluh dalam menyampaikan dan menyiapkan materi penyuluhan kepada petani	3,26
3	Penyuluh dalam meningkatkan pengetahuan dan memecahkan masalah yang di hadapi petani	4,06
	Rata-rata	**3,77**

Based on the research results, farmer satisfaction with the assurance indicator was in the satisfactory category, with an average score of 3.77. This indicates that farmers trust the competence of extension workers in providing knowledge and solutions to agricultural problems. The highest indicator was the ability of extension workers to improve farmer knowledge and solve problems (4.06), as well as to increase rice farming productivity (4.00). However, the ability of extension workers to deliver and prepare extension materials received the lowest score (3.26), indicating a need for improvement in communication and presentation. Overall, extension workers have been able to instill trust in farmers, although improvements in delivery methods are still needed to be more effective.

Tangibles (Direct Evidence)

Tangibles, or direct evidence, is one dimension in the SERVQUAL model developed by Parasuraman, Zeithaml, and Berry (1988). It refers to the physical appearance, facilities, equipment, and appearance of personnel that can be directly seen by service users. In the context of agricultural extension, tangible indicators include things like the professional appearance of the extension worker, the readiness of the extension materials, the completeness of the tools, and the documentation of the extension activities. This dimension is important because it creates a first impression that influences farmer trust and satisfaction with the services provided. Farmer satisfaction with tangible aspects is usually reflected in assessments of the extension worker's readiness when delivering materials, the regularity of the administration of farmer group activities, and the

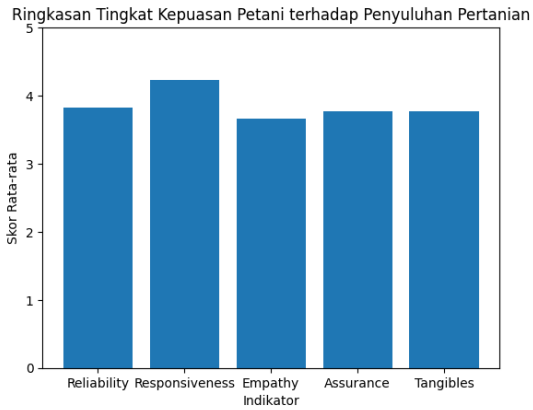
use of extension media such as brochures, modules, or visual aids. When an extension worker appears well-groomed, brings relevant materials, and provides easy-to-understand aids, farmers will feel more confident in the content. Conversely, if an extension worker appears unprepared, arrives without equipment or written materials, this will diminish the impression of professionalism and impact farmer satisfaction. Tangibles (direct evidence) of farmers' perceptions of the role of agricultural extension can be seen in the table below.

Table 5. Tangibles (Direct Evidence) of Farmers' Perceptions of the Role of Agricultural Extension

No	Indikator	Skor
1	Kemampuan penyuluh dalam memberikan penjelasan kepada petani	4,00
2	Kelengkapan dan Kesiapan Alat Peraga Penyuluhan	3,26
3	Kemampuan penyuluh dalam memberikan pengarahan dan pembinaan	4,06
	Rata-rata	**3,77**

Based on the research results, farmer satisfaction with tangible indicators (direct evidence) was in the satisfactory category, with an average score of 3.77. This indicates that the presence and performance of extension workers are quite visible in the field. The highest indicator was the ability of extension workers to provide direction and guidance (4.06) and explain material to farmers (4.00). However, the completeness of extension teaching aids received the lowest score (3.26), indicating suboptimal supporting facilities. Therefore, although tangible aspects are good, improvements to extension facilities and media are needed to make extension activities more effective.

The overall level of farmer satisfaction with the performance of agricultural extension can be seen in the graph below.



Picture 1

The graph shows that the responsiveness indicator scored the highest (4.23), categorized as very satisfied, followed by reliability (3.83), assurance (3.77), and tangibles (3.77), all in the satisfied category. Meanwhile, the empathy indicator scored the lowest (3.66), although still in the satisfied category. This indicates that the extension service's performance is generally good, but empathy and social interaction still need improvement.

The results of the study indicate that the responsiveness dimension scored the highest compared to the other indicators. This indicates that agricultural extension workers are able to respond to farmers' needs quickly and appropriately. This high level of responsiveness is a crucial factor in building farmer trust, as farmers tend to require quick solutions to problems in the field. According to Kriyantono (2006), responsiveness is a key dimension of service quality that directly influences user satisfaction. This also strengthens the role of extension workers as problem solvers in farming activities (Lestari, 2011).

On the other hand, the reliability dimension also showed positive results, particularly in terms of the extension workers' ability to build partnerships. This demonstrates that extension workers not only serve as information providers but also as liaisons between farmers and various related parties. According to Rusdianto (2019), the success of agricultural extension is largely determined by the extension workers' ability to build networks and partnerships that support farming activities. However, the low score for extension worker attendance indicates that continuity of interaction still needs to be improved to strengthen farmer trust.

In the empathy dimension, although generally satisfactory, there is a gap between technical and social aspects. Extension workers are considered good at providing technical guidance, but they are still lacking in involvement in farmer group social activities. This indicates that the relationship between extension workers and farmers still tends to be formal. According to Adijaya (2024), good farmer group dynamics are strongly influenced by social interaction and emotional closeness between members, including extension workers. Therefore, increasing empathy through social involvement is crucial to increasing farmer participation.

The assurance dimension indicates that extension workers have been able to instill a sense of trust in farmers through their competence. This aligns with Hasan's (2002) opinion, which states that service assurance is related to knowledge, skills, and attitudes that can foster user trust. However, weaknesses in material delivery methods indicate that extension workers' communication skills still need to be improved. According to Sugiyono (2015), the effectiveness of information delivery is highly dependent on the communication method used.

Meanwhile, in the tangible dimension, limited facilities and infrastructure are a constraint in extension activities. This indicates that the success of extension services is determined not only by the quality of human resources but also by the availability of facilities. The Ministry of Agriculture (2020) stated that the availability of adequate facilities and infrastructure is a critical factor in increasing the effectiveness of agricultural extension services.

Overall, the results of this study indicate that the performance of agricultural extension services is quite good, but several aspects still need improvement. These improvements include the intensity of extension worker attendance, strengthening social relationships with farmers, enhancing communication skills, and providing adequate facilities and infrastructure. This effort is in line with the goal of sustainable agricultural development which emphasizes the importance of increasing the capacity of farmers and agricultural institutions (Ministry of Agriculture, 2012; United Nations, 2019).

CONCLUSIONS AND RECOMMENDATIONS

Farmer satisfaction with the performance of agricultural extension services in Simpang Gambir Village generally ranges from satisfied to very satisfied. The responsiveness dimension showed the highest score, indicating that extension workers have been responsive in responding to farmers' needs and problems. Meanwhile, the reliability, empathy, assurance, and tangibles dimensions also fell within the satisfactory category, although several weaknesses remained. The main obstacles identified included the lack of frequent presence of extension workers, low involvement in farmer group social activities, limitations in material delivery, and a lack of supporting facilities and infrastructure. Therefore, improvements in the quality of extension services are needed through strengthening the capacity of extension workers, enhancing communication, and providing adequate facilities to support the effectiveness of agricultural extension services.

FURTHER STUDY

This research still has limitations, so it is necessary to conduct further research related to the topic of Analysis of Farmer Satisfaction with the Performance of Agricultural Extension in Simpanggambir Village, Linggabayu District, Mandailing Natal Regency in order to perfect this research and increase insight for readers.

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