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Factors influencing the participation of women farmer groups in agricultural extension in Luwu Regency, South Sulawesi

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ABSTRACT

Introduction: *Kelompok Wanita Tani* (KWT) or Women Farmers Group (in English) is a farmer institution consisting of women who are involved in agricultural activities. Increasing KWT participation in agricultural extension activities can encourage agricultural progress and empower women in rural areas. This research aims to analyze the level of KWT participation in counseling activities and the factors that influence it in Luwu Regency, South Sulawesi. **Method**: The study was designed as exploratory, descriptive research with a quantitative approach and analyzed using variance-based Structural Equation Modeling (VB-SEM) with the Smart PLS 3.29 application tool. **Results** The results indicate that KWT participation in agricultural extension activities in Luwu Regency is in the medium category (score 5.43) with an assessment score range of 1 to 10. Participation in the provision and dissemination of innovation is in the low category, while involvement in planning, implementation of extension, and coaching/development of farmer groups are in the medium category. KWT participation in agricultural extension activities is directly influenced by environmental support and indirectly through counseling, personal characteristics, group dynamics, and environmental support influence. **Conclusion**: The study concludes that extension agents are crucial in increasing KWT participation in extension activities. However, extension workers need to use a more specific approach to KWT to increase their participation in extension activities.

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INTRODUCTION

Kelompok Wanita Tani (KWT) or Women Farmers Group (in English) is a farmer institution consisting of women who are involved in agricultural activities. KWT can be crucial in increasing agricultural development and empowering women in the region by participating in extension activities. By participating in these activities, groups of women farmers can acquire new knowledge, skills, and the latest information on sustainable and innovative agricultural practices, which they can apply in their farming activities. Research conducted by Permana *et al.* (2022) shows that KWT plays a significant role in the success of the Sustainable Food Home Area program. Similarly, Suherman *et al.* (2022) found that the level of KWT participation has a strong relationship with the success of empowerment. Widiastuti *et al.* (2022) in their study also indicate that the role of KWT has an impact on increasing family food security, which is influenced by the high level of KWT participation and participation in extension activities. Luwu Regency has KWTs spread throughout all sub-districts and villages. KWTs generally manage land for planting vegetables and fruit, using yard land, and processing agricultural products. Agricultural extension workers assist KWTs in each village, sub-district, and other farmer groups. However, some KWTs are less active and have stopped carrying out activities. The KWTs participating in extension activities generally have active and motivated members. In contrast, less developed KWTs generally need active members. In addition to managerial issues, the lack of extension support also affects the existence of KWT in the Luwu Regency. Based on research by Amisnawati & Syafruddin (2023), KWT's participation in extension activities in Bajo District, Luwu Regency, still needs to be higher. Therefore, studying the factors that influence KWT's participation in extension activities in Luwu Regency is necessary.

Women farmers (KWTs) can benefit significantly from participating in extension activities. By sharing their experiences and knowledge, they can solve common challenges and problems in their farming practices. It increases individual knowledge and strengthens social networks and collaboration within the group. According to Kiernan *et al.* (2012), women participate in extension activities for various reasons, including the opportunity to meet and learn from other women farmers, build partnership networks, and explore the experiences of others. Extension activities allow women farming groups to expand their networks and develop relationships with agricultural experts,

researchers, and related institutions. They can access resources and technical assistance to increase agricultural productivity, reduce losses, and improve family welfare by engaging in extension activities. KWTs can share experiences and learn from each other in extension activities. They can discuss the challenges and problems faced in their farming practices and find solutions together. Thus, the participation of women farmers in extension activities increases individual knowledge and strengthens social networks and collaboration between group members. As explained by Kiernan *et al.* (2012), there are several reasons why women participate in extension activities like men; apart from gaining knowledge through extension materials, they are also motivated to meet other women farmers, they are also interested in building partnerships networks and exploring the experiences of other farmers. Extension activities also allow women farming groups to expand networks and develop relationships with agricultural experts, researchers, and other institutions. They can access resources and technical assistance to increase agricultural productivity, reduce losses, and improve family welfare by engaging in extension activities.

The involvement of women farmer groups in extension activities has a positive impact on gender balance and women's empowerment. By acquiring new knowledge and skills, women farming groups can play an active role in decision-making within their households and communities. This can improve their social and economic status and give them the confidence to participate in local development processes more broadly. Rural women's participation in agricultural activities and the agricultural economy gives them social, economic, and political recognition and decision-making space, as stated by Upreti *et al.* (2018). Furthermore, agricultural extension workers are in a prime position to engage women farmers interested in agriculture, according to Mitchell & Currey (2020). In summary, the participation of women farmer groups in extension activities is a significant step in promoting sustainable agricultural development and women's empowerment in Luwu Regency. Women farming groups can become influential change agents in achieving more productive and inclusive agriculture through increased knowledge, strong social networks, and resource access.

According to Redmore & Tynon (2010), to encourage the participation of women farmers, extension workers must focus on developing two aspects of knowledge centered on women. The first aspect relates to the fact that women have different needs than men when learning new information. This may be due to gender differences in management or knowledge gaps resulting from knowledge transfer from men. The second aspect centered on women is related to transferring knowledge from woman to woman. This aspect is mainly concerned with a horizontal, practically-based division of knowledge that respects all personal experiences, values, and opinions. Powell *et al.* (2019) also highlighted that women value first-hand experience and learning from experts and peers. However, most importantly, they value opportunities to connect with other women in similar situations.

Marshall (2012) suggested that to increase farmer participation, extension workers should assist farmers with limited access to resources such as funding and marketing. Several other obstacles related to women farmers' access to extension services need attention, such as information resources, busyness in domestic or household matters, and the perception that women are less capable than men in carrying out agricultural activities. Kiernan *et al.* (2012) stated that extension workers must consider the agricultural background framework to achieve thriving agriculture. The view that female farmers are less committed than male farmers is a challenge in creating thriving agriculture. Olsen *et al.* (2009) warned that extension workers often fail to recognize critical opportunities to deal with family dynamics during agricultural discussions. Moreover, they approach women about interpersonal issues but fail to connect them to management decisions or bring them back to the rest of the family team.

According to Law No. 16 of 2016 regarding agricultural, fisheries, and forestry extension systems, extension agents have several responsibilities. These include preparing extension programs, conducting extension work in villages and districts, identifying and solving problems, piloting and developing farming models for critical actors and business actors, promoting leadership and entrepreneurship, facilitating consultation activities and technical meetings, providing education and training services, and organizing rural extension forums. Additionally, the Agricultural Extension Center is responsible for developing sub-district level extension programs, providing counseling based on the extension program, disseminating information on technology, production facilities, financing, and markets, fostering institutional development and partnerships, and promoting continuous learning for instructors. The Center also carries out a learning process by piloting and developing farming business models for key and business actors.

Implementing agricultural extension activities in Luwu Regency involves several key steps. First, an agricultural extension program is developed to establish a plan for the upcoming year. This is followed by an outreach program, which is then evaluated to assess its impact. In addition to these activities, extension workers provide regular guidance and support to farmer groups, mainly newly formed ones. This guidance focuses on group management to prevent potential disputes over group assets. One crucial element of successful extension activities is the participation of farmers and farmer groups, including KWTs, in the supported area. Farmer participation is critical in the planning, implementation, and evaluation stages to ensure the program is practical and relevant to the community's needs. As Slamet, (2003) notes, participation can take many forms, including involvement in planning, implementation,

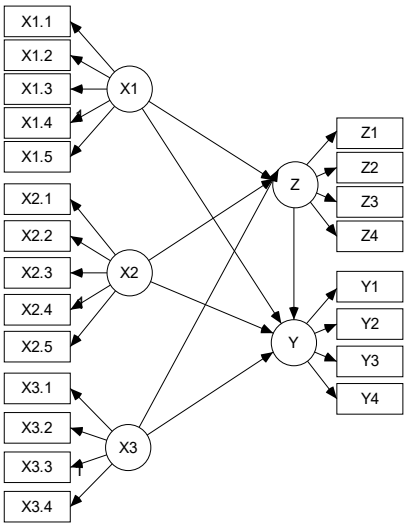
utilization of results, and evaluation of the extension activities. By working with farmers and KWTs, agricultural extension activities can achieve their intended goals and positively impact the local community.

This research aims to provide a detailed and comprehensive analysis of the factors impacting KWT participation in Luwu Regency extension activities. Previous research has yet to explore this area extensively, and it is hoped that the results of this study will inform policymakers and stakeholders on how to support KWT in agricultural extension activities better. Specifically, the research objectives are twofold: (1) to analyze the level of KWT participation in extension activities and (2) to identify the factors that influence this participation in Luwu Regency, South Sulawesi.

METHODS

Research design

The study employed an exploratory, descriptive approach with a quantitative methodology. Its goal was to elucidate the phenomena observed in the study location by descriptively analyzing the relationships between variables. The research incorporated five variables, including three independent variables (personal characteristics (X1), group dynamics (X2), and environmental support (X3)), one intermediate variable (extension (Z)), and one dependent variable (participation (Y)). These variables were drawn from previous research conducted by Nasriati *et al.* (2017), Amisnawati & Syafruddin (2023), Widiastuti *et al.*, (2022), and Falentino & Maulana (2019). The variable analysis model is illustrated in Figure 1.



Notes:
X1.1=age, X1.2= education, X1.3=experience, X1.4=land area, X2.1=activity, X2.2=member rules, X2.3=interaction, X2.4=understanding of group goals, X2.5=group impact; X3.1=family environment, X3.2=social environment, X3.3=accessibility, X3.4=government support; Z1=perception of extension activities, Z2=perception of extension officers, Z3=perception of the importance of extension, Z4=perception of the benefits of extension; Y1=participation in planning, Y2=participation in implementing extension, Y3=participation in providing and disseminating innovation, Y4=participation in coaching and developing farmer groups.

Figure 1. Research analysis model

Population and sample

The study took place from June to December 2022 in Luwu Regency, South Sulawesi, with the research population consisting of all KWT members in the area, including 203 KWT (Ministry of Agriculture, 2023). To ensure the representativeness of the population and minimize error, the number of samples was determined to be 135 farmer groups using the Slovin formula with a 5% margin of error. Two administrators and one member represented each farmer group, totaling 270 respondents. The sampling technique employed was multistage simple random sampling. Both management and members were assumed to understand the group's condition and activities well.

Data and data analysis

The data was collected through a questionnaire that utilized a numerical scale and informant interviews to enhance the quality of the data. To analyze the collected data, descriptive analysis was employed to categorize respondents into low, medium, and high groups. Additionally, inferential analysis was used to examine the impact of independent variables on the dependent variable using variance-based Structural Equation Modeling (VB-SEM). Research has shown that VB-SEM is reliable for estimating the relationship between constructs. To conduct the analysis, the SMART PLS 3.29 tool was utilized.

RESULT AND DISCUSSION

KWT participation

The research focuses on the participation of KWT members in various activities organized by agricultural extension workers. This participation is voluntary and active. The study adheres to the Agricultural, Fisheries, and Forestry

Extension Systems Law of the Republic of Indonesia Number 16 of 2006, which outlines the responsibilities of extension agents. In this context, KWT participation encompasses planning, implementing, disseminating innovations, and coaching/developing farmer groups. Please refer to Table 1 for a detailed presentation of the research findings related to KWT participation in extension activities.

Table 1. KWT participation in counseling

Variable	Category	Frequency	Percentage
Participation in planning	Low	89	32.96
	Medium	105	38.89
	High	76	28.15
Participation in the implementation of counseling	Low	78	28.89
	Medium	106	39.26
	High	86	31.85
Participation in the provision and dissemination of innovation	Low	115	42.59
	Medium	82	30.37
	High	73	27.04
Participation in coaching and developing farmer groups	Low	59	21.85
	Medium	124	45.93
	High	87	32.22

Source: Primary data (processed), 2022
Note: Total mean score = 5.43; Score range 1 – 10
Low = < 4.0; Medium = 4.0 – 7.0; Height = >7.0

According to the data presented in Table 1, KWT's average score for participation in extension activities organized by extension agents falls within the medium category, with a total score of 5.43. It is clear that KWT participation in extension activities needs to be increased, and farmer participation is crucial for the successful implementation of the program. For this reason, extension workers need to adopt a specific approach to encourage and increase KWT participation in extension activities. According to Dauti, (2015), building community trust is essential for fostering participation, which requires holding meetings and building a solid commitment to the community. Sardu *et al.* (2012) also noted that community involvement can be increased by ensuring that all citizens participate and have a say in implementing activities, which gradually allows the public to take a leading role in decisions that affect them.

According to Table 1, most of KWT's participation in extension planning activities falls under the "medium" category. These activities involve creating agricultural extension programs, from analyzing the situation to formulating problems at the farmer, farmer group, and sub-district levels. Farmer participation at this stage is crucial, as the extension activities are tailored to their input and issues. As part of the farmer group, KWT, with the assistance of extension workers, also needs to provide input regarding the challenges they face. KWT has shown active participation in several activities, as noted in studies by Mario *et al.* (2015) and Widiastuti *et al.* (2022). However, this study's findings align with Salim *et al.* (2022) research that indicates KWT's participation in preparing agricultural extension programs for tomato farming is relatively moderate.

The table shows that most of KWT's participation in implementing extension activities is moderate. Extension activities refer to agricultural extension activities carried out by extension agents in their target areas. These activities are carried out on a schedule agreed upon by the extension agent and the farmer and are known to the farmer. In addition to this, extension workers also personally approach farmers to build partnerships aimed at increasing agricultural output. The participation of farmers, including KWT, is crucial in implementing extension services, as it ensures that farmer's problems are resolved collaboratively, thereby providing practical solutions. However, KWT's participation in extension activities could have been higher due to various factors, including busy household activities, activities not directly related to KWT activities, and the dominance of male farmers in extension activities. The majority of KWT activities focus more on the use of yard land and vegetables. Thus, instructors need time to develop KWT separately. Research by Widiastuti *et al.* (2022) shows that KWT's participation in implementing sustainable food house management activities is high. This high participation is due to the benefits felt by KWT in a relatively short period, which are directly related to the family's daily needs. The quality of life of KWT members is also influenced by their participation in sustainable food house activities, as stated by Falentino & Maulana, (2019). Therefore, extension workers must make separate plans to assist KWT because their field of activity is more focused on certain commodities.

Table 1 shows that KWT's involvement in the provision and dissemination of innovation could be much higher due to their limited knowledge of agricultural innovation. While farmers and farmer groups are not tasked with creating innovations, they can do so for their needs. Extension workers can facilitate innovation growth among farmers, ensuring it aligns with their unique needs and characteristics. Although KWT's involvement in innovation may be low,

they have successfully found new ideas to address specific problems. Additionally, KWT has shown enthusiasm for innovative socialization activities led by extension workers, as evidenced by Noviyanti *et al.*'s (2019) research on KWT's participation in land use programs. Instructors must consider the compatibility of innovation with its users' needs and conditions, as emphasized by Orr (2018). Failure to adopt innovation can create doubts and distrust toward extension workers, leading to negative impacts on farmers, the government, and the economy, as Glover *et al.* (2019) warned.

According to Table 1, most coaching and development of farmer groups by KWT falls under the medium category in this research. This refers to the assistance extension workers provide in tasks such as assigning roles to group members, conducting member meetings, establishing rules, and resolving disputes. These findings differ from the research conducted by Jamiatun *et al.* (2018) on functional food processing diversification programs in Jimbaran Village, Margorejo, Pati, where KWT participation was reported to be relatively high. Similarly, Suherman *et al.* (2022) found high participation in KWT empowerment activities. Despite the current level of KWT participation, the groups acknowledged the benefits of extension worker assistance for KWT dynamics. Agricultural extension workers should, therefore, devise individual strategies for coaching and developing KWT, as female farmer groups have different characteristics than male groups. Kiernan *et al.* (2012) emphasized that female farmers participate in extension activities for various reasons, including gaining knowledge through extension materials, meeting other female farmers, building partnership networks, and exploring the experiences of other farmers. Extension activities also allow women farming groups to expand networks and develop relationships with agricultural experts, researchers, and other institutions. Additionally, Redmore & Tynon, (2010) stated that extension workers must understand the knowledge system within women and that knowledge transfer is more effective when conducted according to their gender characteristics. Finally, Powell *et al.* (2019) found that women value hands-on learning experiences and connecting with other women in similar situations.

Validity and reliability of SEM models

Before utilizing the SEM model to ascertain the level of influence between variables, an initial assessment is conducted to ensure the model's validity and reliability. The convergent validity test employed for the model involves examining the outer loading value and the Average Variance Extracted (AVE) value. The SEM model is considered valid if the outer loading value is more significant than 0.7 and the AVE value is greater than 0.5. Reliability was assessed through Cronbach's alpha and composite reliability (CR) for each variable. Cronbach's alpha measures the internal consistency of the indicators within a variable, while CR measures the reliability of the measurement model. These measures determine the level of internal reliability of variable indicators. A variable is deemed reliable if it has a standard Cronbach Alpha value greater than 0.6 and a standard Composite Reliability value greater than 0.7 (Hair *et al.*, 2011). The results from the validity and reliability tests for the SEM model are presented in Table 2.

Based on Table 2, the SEM model has met the validity and reliability criteria. This is indicated by the outer loading value of all indicators >0.7 and the AVE value >0.5. Meanwhile, reliability criteria are determined based on the Cronbach Alpha value for all variables >0.5 and CR value >0.7. Based on these results, it can be concluded that the SEM model exhibits good validity and reliability. The indicators have strong relationships with their respective variables and the measurement model is internally consistent and reliable. Thus, the SEM model can be used to determine the influence of the variables analyzed in this research.

Factors influencing KWT participation

Variance-based Structural Equation Modeling (VB-SEM) is the analytical method utilized to identify the factors impacting KWT participation. Two main factors affect participation, namely direct and indirect influence. Direct influence is tied to personal characteristics variables (X1), group dynamics (X2), and environmental support (X3) on counseling (Z) and participation (Y). Indirect influence, on the other hand, pertains to personal characteristics variables (X1), group dynamics (X2), and environmental support (X3) on participation (Y) through counseling (Z). The SEM model analysis findings are displayed in Figure 2 and Table 3.

According to Table 3, personal characteristics (X1) have no significant direct effect on participation, with an influence coefficient of 0.106 (Figure 2). The analysis reveals that the T-count value (1.430) is lower than the T-table value (1.645), and the P-value (0.153) is higher than the cut-off value (0.05). However, personal characteristics do indirectly affect participation through counseling, with an influence coefficient of 0.131 (as shown in Figure 2). The analysis shows that the T-count value (2.275) is higher than the T-table value (1.645), and the P-value (0.023) is lower than the cut-off value (0.05). The personal characteristics considered in this study include age, education, experience, land area, and training. The findings indicate that personal characteristics do not significantly contribute to increasing KWT participation in extension activities, but they can have an impact through the role of extension workers. The research defines extension as KWT's perception of extension, including perceptions of its implementation, officers, importance, and benefits. The personal characteristic with the most significant contribution is training, with a score of 0.925, while land area has the lowest score at 0.831 (as shown in Figure 2).

Table 2. Test the validity and reliability of the SEM model

Variable	Indicator	Outer Loadings	AVE	Validity	Cronbach's Alpha	CR	Reliability
Personal characteristics (X1)	X1.1	0.876	0.764	valid	0.924	0.942	Reliable
	X1.2	0.874		valid			
	X1.3	0.863		valid			
	X1.4	0.831		valid			
	X1.5	0.925		valid			
Group dynamics (X2)	X2.1	0.954	0.854	valid	0.957	0.967	Reliable
	X2.2	0.952		valid			
	X2.3	0.906		valid			
	X2.4	0.928		valid			
	X2.5	0.879		valid			
Environmental support (X3)	X3.1	0.893	0.883	valid	0.955	0.968	Reliable
	X3.2	0.941		valid			
	Z3.3	0.955		valid			
	X3.4	0.967		valid			
Extension (Z)	Z1	0.830	0.787	valid	0.909	0.936	Reliable
	Z2	0.935		valid			
	Z3	0.858		valid			
	Z4	0.921		valid			
Participation (Y)	Y1	0.950	0.855	valid	0.942	0.959	Reliable
	Y2	0.850		valid			
	Y3	0.943		valid			
	Y4	0.952		valid			

Source: Primary data (processed), 2022

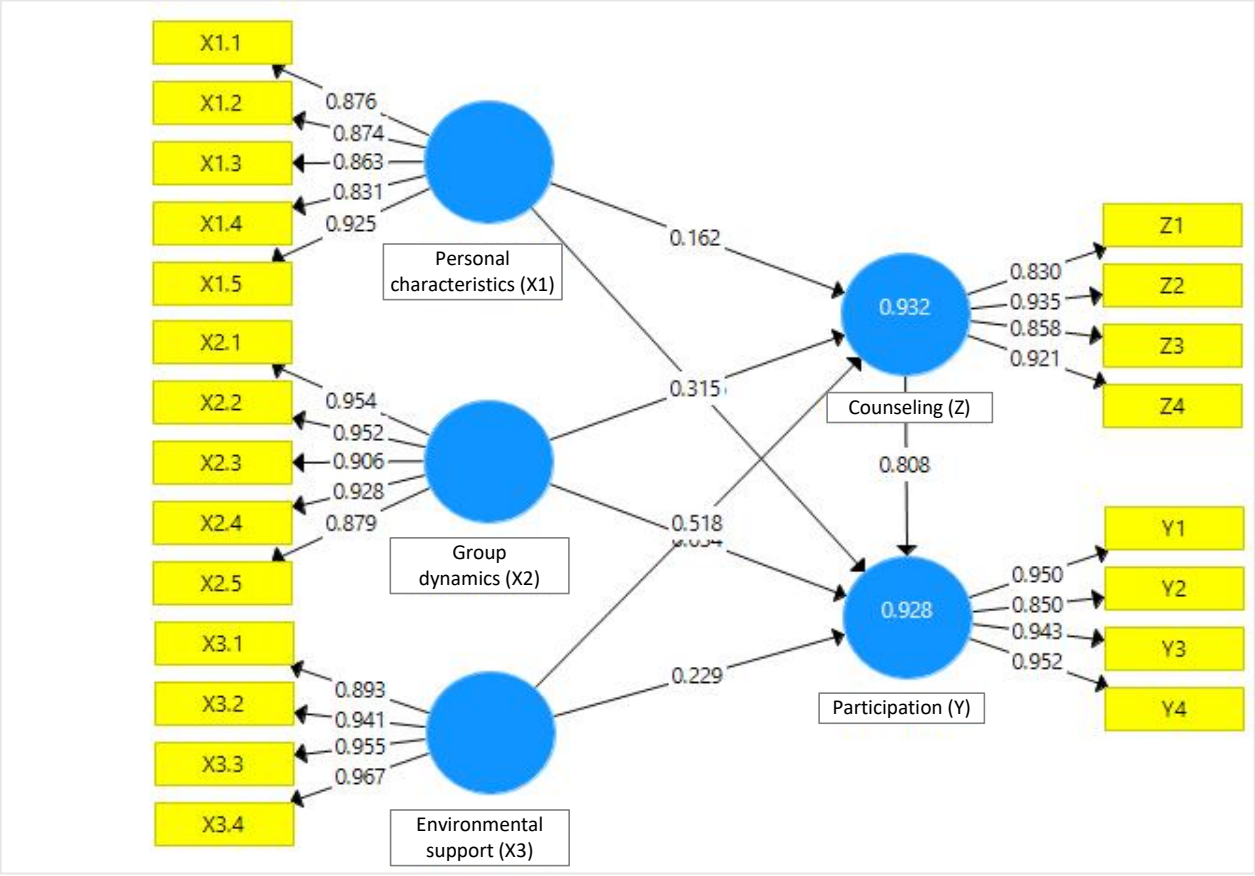


Figure 2. SEM analysis model

Table 3. Factors influencing KWT participation

Influence between variables	T Count	P Values
Direct Influence		
Group dynamics (X2) -> Participation (Y)	0.827	0.409
Group dynamics (X2) -> Extension (Z)	9.291	0.000
Environmental support (X3) -> Participation (Y)	2.174	0.030
Environmental support (X3) -> Extension (Z)	6.458	0.000
Personal characteristics (X1) -> Participation (Y)	1.430	0.153
Personal characteristics (X1) -> Extension (Z)	2.429	0.016
Extension (Z) -> Participation (Y)	9.218	0.000
Indirect influence through Extension		
Group dynamics (X2) -> Extension (Z) -> Participation (Y)	5.476	0.000
Environmental support (X3) -> Extension (Z) -> Participation (Y)	6.067	0.000
Personal characteristics (X1) -> Counseling (Z) -> Participation (Y)	2.275	0.023

Source: Primary data (processed), 2022
Note: T Table=1.654; Cutoff value=0.05

According to research, KWT's participation in extension activities is determined by their perception of extension. Wang *et al.* (2022) noted that personal characteristics, such as education, can provide farmers with valuable insight into agriculture and problem-solving while also offering social capital that allows them to expand their networks. Endwiyatni *et al.* (2022) research found that education and land area are significant factors that influence farmers' responses to agricultural activities. Farmers with larger land areas are more motivated to participate in extension activities, as they require more technical assistance and resources than those with smaller land areas. Observations at the research location indicate that most KWTs focus on growing various types of vegetable plants in relatively small yards. As a result, they may find it less attractive to participate in extension activities with other farmer groups with different land areas and commodities. Extension workers should, therefore, adopt a different approach when working with KWTs to encourage their active participation in every extension activity. The specific commodities that KWTs focus on can serve as a helpful guide for extension workers to provide training that targets those areas. Glover *et al.* (2019) also emphasized the importance of training for farmers, as it can equip them with the skills needed to solve problems encountered in their agricultural activities with the help of extension officers. Extension workers can encourage increased farmer participation in all extension activities by providing relevant training.

Group dynamics (X2) influence on KWT participation is minimal, with an influence coefficient of 0.03, as shown in Figure 2. Data analysis reveals that the T-count value (0.827) is smaller than the T-table value (1.645), and the P-value (0.409) is greater than the cut-off value (0.05). However, counseling shows that group dynamics significantly affect KWT participation, with a coefficient of 0.255, as indicated in Figure 2. The T-count value (5.476) is greater than the T-table value (1.645), and the P-value (0.000) is smaller than the cut-off value (0.05). This implies that group dynamics do not solely determine the level of KWT participation in extension activities, but they can impact it through counseling. The group dynamics observed in this study include activeness, member rules, interaction, understanding of group goals, and group impact. Activeness has the highest contribution to group dynamics at 0.954, while understanding group goals has the most minor contribution at 0.879, as shown in Figure 2.

Instructors play a crucial role in managing groups, as their mediation can establish trust and motivate members to participate in organized activities. Sumardjo, (2016) emphasized the importance of a convergent extension system or approach to farmers, which can enhance the effectiveness of extension and increase farmer capacity. Similarly, Karatepe & Scherrer, (2019) suggested that joint and centralized action, combined with various resources, is necessary for farmer groups to minimize obstacles. Holcomb & Muske, (2000) highlighted the need for Field Agricultural Extension Officers (PPL) to understand financial planning, agricultural business, and group strengthening. A lack of dynamism in farmer groups can lead to a lack of trust among members, according to (Ataei *et al.*, 2021). Wolz *et al.* (2020) stated that unclear group rules can cause members to distrust the group and be reluctant to participate. In such cases, extension agents must mediate to ensure effective group management and encourage participation in every group activity. Additionally, Zulkarnain *et al.* (2022) suggested that extension activities aligned with farmers' expectations can increase trust in extension workers. A farmer's positive perception of extension workers is crucial to encouraging participation, including in KWT activities.

The impact of environmental support (X3) on KWT participation in extension activities is significant, with an influence coefficient of 0.229 (as shown in Figure 1). The data analysis results reveal that the T-count value (2.174) surpasses the T-table value (1.645), and with a P-value of 0.030, it is lower than the cut-off value of 0.05. Moreover, environmental support significantly affects education, with an influence coefficient of 0.418 (as depicted in Figure 2).

The environmental support in the context of this research encompasses the family environment, social environment, accessibility, and government support. The government support indicator, at 0.967, is the most significant contributor to environmental support, while the family environment has the most minor contribution, with a value of 0.893 (as shown in Figure 2).

The research findings highlight the significant contribution of environmental support to KWT's participation in extension activities. This support is crucial in encouraging KWT members to overcome obstacles and participate in such activities. Murray *et al.* (2016) have noted that female farmers often face resource-related challenges, so support from external parties is vital to address these issues. With their expertise, extension agents can provide valuable mentoring and assistance to KWTs in resolving these challenges. The study shows that government support scored highest in environmental support, indicating its importance in promoting the progress of farmer groups and agriculture. Singh (2022) pointed out that government assistance can be a powerful catalyst for economic growth and progress. Furthermore, agricultural equipment support can reduce labor usage and expenses while facilitating faster land processing and enhancing the quality of outputs (Sumardjo, 2014).

According to Mathinya *et al.* (2022), farmer groups engaged in small-scale agriculture require support in agricultural activities to establish a dependable source of livelihood for their members. In addition, favorable environmental conditions are crucial in determining the participation of KWTs in extension activities. For successful implementation, KWTs require a conducive social environment to feel comfortable and confident in participating in extension activities (Lê *et al.*, 2015).

CONCLUSION

Overall, KWT's involvement in agricultural extension activities in Luwu Regency is graded as medium (with a score of 5.43 on a scale of 1 to 10). However, one aspect falls into the low category, which is participation in the provision and dissemination of innovation. On the other hand, other aspects fall into the medium category, including participation in planning, extension implementation, and the coaching/development of farmer groups. Environmental support significantly influences KWT's involvement in agricultural extension activities directly. Meanwhile, personal characteristics, group dynamics, and environmental support indirectly impact KWT's participation through instructors. The need for more KWT involvement in extension activities has a negative effect on the organization's progress in the Luwu District. This issue is due to KWT's lack of interest in counseling that is not specific to the commodities cultivated by KWT. Additionally, KWT has yet to receive intensive extension activities tailored to their needs, leading to male farmers dominating most extension activities. Consequently, KWT's interest in participating in extension activities conducted concurrently with male farmers has declined.

POLICY RECOMMENDATIONS

Based on the research results, policy recommendations to increase KWT participation in participating in agricultural extension activities in Luwu Regency are: (1) Implementing agricultural extension programs that focus more on KWT and their farming businesses, (2) Increasing guidance for KWT development in both organizational and managerial aspects, (3) Providing more intensive training to KWT to improve their ability to innovate, especially in the commodities they cultivate.

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REFERENCES

Amisnawati, B., & Syafruddin. (2023). Factors Influencing the performance of agricultural extension services on women farmer groups in Luwu Regency, Indonesia. *Jurnal Ilmiah Pertanian*, *20*(1).

Ataei, P., Sadighi, H., Aenis, T., Chizari, M., & Abbasi, E. (2021). Challenges of applying conservation agriculture in Iran: An overview on experts and farmers’ perspectives. *Air, Soil and Water Research*, *14*. https://doi.org/10.1177/1178622120980022

Dauti, M. (2015). Outcomes of participatory decision making: Evidence from Albania. *East European Politics and Societies*, *29*(1), 226–247. https://doi.org/10.1177/0888325414536260

Endwiyatni, P., Suminah, & Rusdiyana, E. (2022). Faktor yang mempengaruhi respons petani terhadap program desa pertanian organik (DPO) empon-empon di Kecamatan Jumantono Kabupaten Karanganyar. *Agromix*, *13*(64), 79–88. https://www.jurnal.yudharta.ac.id/v2/index.php/AGROMIX/article/view/2747

Falentino, R., & Maulana, D. (2019). Pengaruh partisipasi kelompok wanita tani terhadap peningkatan kualitas hidup anggota (studi pada program kawasan Rumah Pangan Lestari di Kelompok Wanita Tani Sakinah). *Jurnal Agroscience (Agsci)*, *4*(2), 145–151.

Glover, D., Sumberg, J., Ton, G., Andersson, J., & Badstue, L. (2019). Rethinking technological change in smallholder agriculture. *Outlook on Agriculture*, *48*(3), 169–180. https://doi.org/10.1177/0030727019864978

Hair, J. F., Ringle, C. M., & Sarstedt. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152. https://doi.org/10.2753/MTP1069-6679190202

Holcomb, R., & Muske, G. (2000). The role of extension specialists in helping entrepreneurs develop successful food-based businesses. *Journal of Extension*, *38*(1).

Jamiatun, Nurunnisa, D. P. J. I., Rahmatika, N. W., Mar'ati, A. C., Aribah, S. Al, & Rusdiyana, E. (2018). Dinamika dan partisipasi anggota kelompok wanita tani dalam program diversifikasi olahan pangan fungsional di Desa Jimbaran, Margorejo, Pati. *Journal of Community Empowering and Services*, *2*(2).

Karatepe, I. D., & Scherrer, C. (2019). Collective action as a prerequisite for economic and social upgrading in agricultural production networks. *Agrarian South*, *8*(1–2), 115–135. https://doi.org/10.1177/2277976019838158

Kiernan, N. E., Barbercheck, M., Brasier, K. J., Sachs, C., & Terman, A. R. (2012). Women farmers: Pulling up their educational bootstraps with extensions. *Journal of Extension*, *50*(5).

Lê, Q., Auckland, S., Nguyen, H. B., Murray, S., Long, G., & Terry, D. R. (2015). The socio-economic and physical contributors to food insecurity in a rural community. *SAGE Open*, *5*(1). https://doi.org/10.1177/2158244014567401

Mario, V. K., Olfie, L. B., Sendow, M. M., & Vicky, R. M. (2015). *Partisipasi kelompok tani dalam kegiatan penyuluhan pertanian di Desa Kanonang Lima, Kecamatan Kawangkoan Barat*. *11*(November), 19–32.

Marshall, R. W. (2012). The impact of the extension service on minority-owned small farm operations. *Journal of Extension*, *50*(1), 1–5.

Mathinya, V. N., Franke, A. C., Van De Ven, G. W. J., & Giller, K. E. (2022). Productivity and constraints of small-scale crop farming in the summer rainfall region of South Africa. *Outlook on Agriculture*, *51*(2), 139–154. https://doi.org/10.1177/00307270221091839

Ministry of Agriculture. (2023). *Data kelompok tani Indonesia*. https://app3.pertanian.go.id/simluh/monpetanikec.php

Mitchell, G., & Currey, R. C. D. (2020). Increasing participation of women in agriculture through science, technology, engineering, and math outreach methods. *Journal of Extension*, *58*(2), 1–10.

Murray, U., Gebremedhin, Z., Brychkova, G., & Spillane, C. (2016). Smallholder farmers and climate smart agriculture: technology and labor-productivity constraints amongst women smallholders in Malawi. *Gender, Technology and Development*, *20*(2), 117–148. https://doi.org/10.1177/0971852416640639

Nasriati, Novrianty, E., & Yani, A. (2017). Tingkat partisipasi anggota kelompok wanita tani (KWT) Dalam program model kawasan rumah pangan lestari (M-KRPL) di Desa Sidodadi, Kecamatan Way Lima, Kabupaten Pesawaran. In *Prosiding Seminar Nasional Pengembangan Teknologi Pertanian*, *September*, 236–243.

Noviyanti, R., Syaefuddin, Yuliani, L., & Herwina, W. (2019). Partisipasi kelompok wanita tani dalam meningkatkan program P2WKSS untuk memanfaatkan lahan. *Jurnal Cendekiawan Ilmiah PLS*, *4*(2), 59–70.

Olsen, C. S., Jones, R., Jost, J., & Griffin, C. L. (2009). Integrating economics, management, and human relationship issues into training for successful farm family businesses. *Journal of Extension*, *47*(5), 8–11.

Orr, A. (2018). Markets, institutions, and policies: A perspective on the adoption of agricultural innovations. *Outlook on Agriculture*, *47*(2), 81–86. https://doi.org/10.1177/0030727018776433

Permana, R., Sukmawati, D., & Dasipah, E. (2022). Peranan faktor sosial ekonomi dan partisipasi wanita tani dalam kegiatan kelompok wanita tani (KWT) terhadap keberhasilan program kawasan rumah pangan lestari (KRPL) (Suatu kasus pada kelompok wanita tani (KWT) di kecamatan cianjur kabupaten cianjur). *OrchidAgri*, *2*(1), 8. https://doi.org/10.35138/orchidagri.v2i1.252

Powell, M., Fery, M., Agenbroad, A., & Guzy, M. (2019). Personal connections: What women in sustainable agriculture value in their professional development. *Journal of Extension*, *57*(5), 5FEA5.

Redmore, L. E., & Tynon, J. F. (2010). WOWnet: A communication and networking model for women. *Journal of Extension*, *48*(5), 1–8.

Salim, M., Ullyasniaty, U., & Rayuddin, R. (2022). Participation of farmer group members in designing extension programs on tomato farming. *Agrisurya: Jurnal Agribisnis dan Sumber Daya Pertanian*, *1*(2), 24-34. https://doi.org/10.51454/agrisurya.v1i2.102

Sardu, C., Mereu, A., Sotgiu, A., & Contu, P. (2012). A bottom-up art event gave birth to a process of community empowerment in an Italian village. *Global Health Promotion*, *19*(1), 5–13. https://doi.org/10.1177/1757975911423074

Singh, J. (2022). The Impact of social infrastructure and physical infrastructure on economic growth in Punjab, India. *Journal of Asian and African Studies*, *5*(57), 997–1012. https://doi.org/10.1177/00219096211043913

Slamet, M. (2003). *Pemberdayaan masyarakat. dalam membentuk pola perilaku manusia pembangunan*. IPB Press.

Suherman, E., Faqih, A., & Trisnaningsih, U. (2022). Hubungan Partisipasi anggota kelompok wanita tani dengan tingkat keberhasilan pemberdayaan di bidang pertanian. *Paradigma Agribisnis*, *4*(2), 94. https://doi.org/10.33603/jpa.v4i2.6791

Sumardjo. (2014). *Model pemberdayaan masyarakat dan pengelolaan konflik sosial pada perkebunan kelapa sawit di*

Propinsi Riau. CARE, IPB.

Sumardjo. (2016). Kearifan lokal alternatif menuju modernisasi dalam penyuluhan pembangunan. In *Seminar Nasional Perhimpunan Ahli Penyuluhan Pembangunan disampaikan dalam konfrensi Penyuluhan dan Komunikasi Pembangunan.* Universitas Brawijaya Malang.

Upreti, B. R., Ghale, Y., Shivakoti, S., & Acharya, S. (2018). Feminization of agriculture in the eastern hills of nepal: a study of women in cardamom and ginger farming. *SAGE Open*, *8*(4). https://doi.org/10.1177/2158244018817124

Wang, Y., Qu, W., Zheng, L., & Yao, M. (2022). Multi-dimensional social capital and farmer's willingness to participate in environmental governance. *Tropical Conservation Science*, *15*(485), 1–12. https://doi.org/10.1177/19400829221084562

Widiastuti, A. E. A., Sugihardjo, & Anantanyu, S. (2022). Partisipasi anggota kelompok wanita tani (kwt) dalam mewujudkan ketahanan pangan rumah tangga di Kecamatan Colomadu Kabupaten Karanganyar. *Jurnal Indonesia Sosial Sains*, *3*(7), 1027–1038. https://doi.org/10.36418/jiss.v3i7.644

Wolz, A., Möllers, J., & Micu, M. M. (2020). Options for agricultural service cooperatives in a postsocialist economy: Evidence from Romania. *Outlook on Agriculture*, *49*(1), 57–65. https://doi.org/10.1177/0030727019861973

Zulkarnain, Supriyadi, Karina, E., Rakhmiati, Rakhmiati, & Handayani, E. P. (2022). Tingkat kepuasan kelompok wanita tani terhadap kinerja penyuluh pertanian lapang. *Agromix*, *13*(1), 34–46. https://doi.org/10.35891/agx.v13i1.2842