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Effect of Extension Worker's Qualifications on The Performance of Agricultural Extension Workers in Agricultural Extension in Kendari City

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This research analyzed the state of extension worker's qualifications, the state of extension worker's performance, and the effect of qualifications on the performance of extension workers in Kendari City. The research was carried out in Kendari City, Southeast Sulawesi Province from March to June 2023. The population or research analysis unit this research was 63 people who were State Civil Apparatus (ASN) that agricultural extension workers in Kendari City. In this research, the exogenous variable is the instructor's qualifications (X) which include communication skills of extension workers (X1), attitudes extension workers (X2), knowledge extension workers (X3), and introduction to the socio-culture of farmers (X4). The endogenous variables in the research are agricultural instructor performance (Y) which includes performance in planning (Y1), performance in implementation (Y2), and performance in extension evaluation (Y3). In describing the condition of qualifications and performance of extension workers in Kendari City, descriptive statistical analysis was used. Meanwhile, in analyzing the effect of qualifications on the performance of instructors in Kendari City, inferential statistical analysis, namely structural equation modeling (SEM) - Partial least squares (PLS), was used. The results of this research show that the qualifications and performance of extension workers in Kendari City are in the good category. The results of this research also showed that extension worker's qualifications have a significant positive influence on the performance of extension workers in Kendari City. The results of this research indicate that increasing the qualifications of extension workers will improve the performance of extension workers. Therefore, efforts are needed to improve the qualifications of extension workers towards being very good so that the performance of extension workers will also increase towards being very good as well.

Keywords: Extension worker's qualifications, extension worker's performance, agricultural, agricultural extension, extension worker's communication skills..

INTRODUCTION

Agricultural extension has a very important and strategic position in supporting the success of agricultural development. Agricultural extension workers are the spearhead of agricultural development. The success of agricultural development is largely determined by the qualifications and performance of agricultural extension workers. Agricultural extension workers who have good qualifications will support the performance of extension workers in carrying out their duties and roles. Extension agents who have excellent qualifications and performance are very important in realizing the professionalism of agricultural extension workers. Shah *et al.* (2013) reported that skilled extension workers are very important to support the success of agricultural extension. Skilled extension workers will accelerate change in agricultural extension. Khalid and Sherzad (2019) observed that there is a positive correlation between the professional quality of extension workers in the field and the success of agricultural extension. Successful implementation of extension can be achieved if it is carried out by professional extension workers. Professional extension workers are extension workers who are oriented towards meeting farmers' needs and solving problems or challenges faced by farmers. Extension agents are agents of change for society. Professional extension workers will be effective agents of change. Professional extension workers are extension workers who have high personal qualities and performance. Saleh *et al.* (2016) reported that extension agents must have certain qualifications to be able to fulfill and carry out their responsibilities as instructors well. This is because extension workers have an important task in helping

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farmers improve their farming performance. Ayansina and Adeogun (2017) suggested that professional extension workers must have standard competencies as required as professional extension workers. Professional instructors are extension workers who have high performance.

The way in which agricultural extension workers execute their jobs will serve as an indicator of their level of professionalism. The exceptional performance of the agricultural extension workers in the fulfilment of their duties and responsibilities is proof of their professionalism. According to Listiana *et al.* (2019) an extension worker's behavior demonstrates their professionalism and high-performance level. According to Ghimire and Suvedi (2017) professionalism is a must for extension workers. Professionally speaking, extension agents should be able to demonstrate a solid grasp of farmers and their social structures as well as strong production (cultivation) process expertise. There are still issues with the way agricultural extension workers in Indonesia perform, particularly the way they perform in Kendari City. According to Prasetyo *et al.* (2020) agricultural extension workers' performance was deemed moderate since they have not fully integrated the components of agricultural extension performance. According to Jamil *et al.* (2023) there is a lack of extension workers and restrictions on agricultural extension in Indonesia. Agricultural extension must continue to play a bigger role in helping farmers in resolving their personal issues, especially those pertaining to the various facets of their farming operations as a whole, given the current state in which many farmers are still bound by poverty. Harahap (2023) suggested that all agricultural stakeholders must work together to raise extension agents' performance to an even higher level. Professional agricultural extension workers are essential to the effective execution of agricultural extension. If agricultural extension workers have the qualifications necessary to perform their jobs, then the utilization of agricultural extension workers can be achieved. The qualifications of individuals engaged in agricultural extension significantly affect the challenges faced by agricultural extension workers. Issues stemming from the qualifications of agricultural extension agents can hinder their effectiveness and performance in executing their responsibilities. Consequently, this study aims to examine the impact of agricultural extension workers' qualifications on their effectiveness in delivering agricultural extension services in Kendari. Agricultural extension workers in Kendari City generally have a wide working area because each agricultural extension worker's in Kendari City handles 1 to 2 sub-districts. This causes agricultural extension workers in Kendari City to handle several jobs at once, making it difficult for agricultural extension workers to divide their time and focus on their main tasks because agricultural extension workers in Kendari City carry out workloads that do not match their abilities and capacities. Sapar and Bustami (2017) said that extension workers will work optimally when the workload is in accordance with the ability and capacity of the extension agent himself, when an extension agent has to handle several jobs at once, or handle more than one target area, he will definitely find it difficult to maximize his work. It is difficult to divide time and not focus on the main task as an instructor. The performance of an extension agent with one assisted/assisted area will be different from the performance of an extension agent with more than one assisted area. Instructors who have more than one assisted area or have multiple duties in the office will find it difficult to divide their time to accompany farmers in their business, especially for extension agents who are domiciled. outside the built area. This research aimed to: (1) determine the qualifications of agricultural extension workers in agricultural extension in Kendari City; (2) knowing the performance of agricultural extension workers in agricultural extension in Kendari City; (3) What is the influence of agricultural extension worker's qualifications on the performance of agricultural extension workers in agricultural extension in Kendari City.

MATERIALS AND METHODS

***Time and location*:** From March to June 2023, the study was carried out at Kendari City, Southeast Sulawesi Province. Determining the research location was carried out purposively with the following considerations:

1. Agricultural extension in Kendari City is considered active.
2. Research has not been conducted on the same topic in Kendari City.

***Population and sample*:** The 63 State Civil Apparatuses (ASN) working in agricultural extension in Kendari Regency served as the population or unit of analysis for the study. According to the population is a generalized area made up of things or people with particular attributes and traits that are used by researchers to study before conclusions are made. Shukla (2020) described that the population is the unit of analysis that is the focus of the researcher's analysis in a study. The sampling method in this research is to use the census method. The entire population of this study, totaling 63 agricultural extension workers in Kendari City, was determined as the research sample. Etikan *et al.* (2016) concluded that the research sampling method using the census method is also usually called a saturated sample. The saturated sample method or census method is used for research that takes the entire population as the unit of research analysis.

***Research variables*:** This research variable consists of an independent variable and a dependent variable. Independent variables are also called exogenous variables and dependent variables are also called endogenous variables. The independent variable or exogenous variable in this research is the extension worker's qualifications (X) which include

extension worker's communication skills (X1), extension workers attitudes (X2), extension workers knowledge (X3), and introduction to the socio-culture of farmers (X4). The dependent variable or endogenous variable in this research is the performance of extension workers (Y) which includes performance in planning (Y1), performance in implementation (Y2), and performance in extension evaluation (Y3).

***Data analysis*:** Data collection in this research used the Likert Scale technique. In the Likert Scale, a statement instrument was prepared for research respondents to answer using five alternative answers. The alternative answers on the Likert Scale in this study are (1) strongly disagree; (2) disagree; (3) doubtful; (4) agree; and (5) strongly agree. Joshi *et al.* (2015) said that the Likert scale is a tool for collecting research data. The Likert scale generally functions to measure a person's attitude or opinion towards the issues being studied.

In describing the condition of qualifications and performance of extension workers in Kendari City, descriptive statistical analysis was used. Meanwhile, in analyzing the effect of qualifications on the performance of instructors in Kendari City, inferential statistical analysis, namely structural equation modelling (SEM) - Partial least squares (PLS), was used. Kaur *et al.* (2018) found that the inferential statistical data analysis technique uses Partial Least Square (PLS) which is a Structural Equation Modeling (SEM) equation model with an approach based on variance or component-based structural equation modelling. PLS-SEM functions in developing theory or building theory (prediction orientation). PLS functions in analyzing the relationship between latent variables (prediction). According to Sarstedt *et al.* (2021) the PLS-SEM analysis method is an inferential statistical analysis in developing theories with a predictive focus. Besides that, PLS-SEM also functions to determine whether or not there is a relationship between latent (predicted) variables.

PLS-SEM analysis is a measurement model that shows how each indicator block is related to its latent variable. In PLS-SEM, evaluation of the measurement model is carried out using confirmatory factor analysis, namely testing convergent and discriminant validity. The reliability test in PLS-SEM is carried out in two ways, namely with Cronbach's Alpha and Composite Reliability. Sadidi *et al.* (2018) examined that PLS-SEM analysis is a measurement model that shows how each indicator block is related to its latent variable. In PLS-SEM, evaluation of the measurement model is carried out using confirmatory factor analysis, namely testing convergent and discriminant validity. The reliability test in PLS-SEM is carried out in two ways, namely with Cronbach's Alpha and Composite Reliability. Benitez *et al.* (2020) reported PLS-SEM is a model analysis that focuses on understanding the relationship between latent variables. PLS-SEM is a structural model in the development of substantive theory, also functions to describe the robustness of the relationship between latent or conceptual variables. Ghozali and Latan (2015) found that testing the inner model in PLS-SEM, analyzes several measurements, including Path Coefficient, R-Square (R^2) measurements, and hypothesis testing.

RESULTS AND DISCUSSION

***The extension worker's qualifications*:** Extension workers' qualifications are the abilities that extension workers must have in carrying out their duties. In this research, the extension workers' qualifications include four aspects studied, the extension worker's communication skills, the extension worker's attitude, the extension worker's knowledge, and social and cultural introduction to farmers. An overview of the state of the extension worker's communication skills, extension workers' attitude, extension worker's knowledge, and introduction to farmer's social culture, which are parts of the extension worker's qualifications, can be seen in Table 1.

Table 1. Condition of extension worker's qualifications in Kendari City.

No.	Indicator	Average	Category
1	Communication skills	4,40	High
2	Attitude	4,39	High
3	Knowledge	4,26	High
4	Social culture	4,16	High
Average		4,30	High

Source: Processed Primary Data, 2023

Table 1 demonstrates that Kendari City's agricultural extension workers have highly qualified backgrounds. This demonstrated that the agricultural extension workers in Kendari City possess all the necessary qualifications, including extension worker's communication skills, extension worker's attitude, extension worker's knowledge, and the social culture of agricultural extension workers, to perform their duties as high category agricultural workers.

***Extension worker's communication skills*:** The communication skills of extension workers in the results of this research show that Kendari City extension workers have high communication skills. The extension worker's mastery of high communication skills is very important in supporting the extension worker's high performance. The results of this research also show that agricultural extension workers in Kendari City have mastered the components of communication skills very well, namely: verbal and non-verbal communication skills, message clarity, timeliness and accuracy in communication.

***Extension worker's attitude*:** The study's findings demonstrated that Kendari City's agricultural extension agents have a very positive attitude. This demonstrated that Kendari City's agricultural extension workers possess all the attitude components necessary for them to do their responsibilities in a high-caliber manner, including

maintaining a presentable look, being trustworthy, disciplined, open, and objective.

***Extension worker's knowledge*:** Extension knowledge from the results of this research shows that Kendari City agricultural extension workers have a high level of knowledge. Knowledge is very important for extension workers in carrying out their duties because agricultural extension is non-formal education to change farmer behavior. The results of this research also show that Kendari City extension workers have high knowledge of the aspects needed to complete their duties as extension agents, such as knowledge in analyzing regional potential, assessing the condition of farmers, materials, media and extension techniques.

***Social and culture*:** The results of this research show that the social and cultural introduction of farmers by extension workers is in the high category. The introduction of socio-culture in agricultural extension is very important. By introducing social culture, extension workers can develop extension programs according to the socio-cultural conditions of farmers. Extension programs that suit farmers' socio-cultural conditions will be easily accepted and implemented by farmers. Introduction to farmers' social culture includes: knowing and adapting to farmers' social culture, interacting and collaborating with farmers, and being tolerant of farmers' social culture.

***Extension worker's performance*:** The performance of the extension workers is the work achievement of the extension workers in carrying out his duties and roles as an agricultural extension worker. The performance of these extension workers is very important in increasing the productivity of farmers' businesses (Wulandari *et al.*, 2021). The state of the extension worker's performance in this research can be seen in Table 2.

Table 2. Condition extension worker's performance in Kendari City.

No.	Indicator	Average	Category
1	The performance in planning	4,40	High
2	The performance in implementation	4,23	High
3	The performance in evaluation	4,18	High
Average		4,27	High

Source: Processed Primary Data, 2023

The performance of the extension workers in this research showed that it was in the high category. The high performance of extension workers in carrying out their duties is an implementation of extension worker's professionalism. This is because the high performance of the extension workers shows that the extension workers have achievements in carrying out their duties. Table 2 shows that the performance of extension agents has been high in planning, implementation and evaluation of extension services. Baruwadi *et al.* (2020), that good performance of extension workers can increase farmers' ability to increase farming productivity. The performance of instructors can be achieved by effectively implementing the extension role. Extension workers who have high performance are extension workers who can solve farming problems faced by farmers and are even able to increase farming productivity. Dewi (2021) reported that performance is the achievement of a person's work results or a person's work performance in carrying out the tasks given within a certain period.

***The extension workers' performance in planning*:** The performance of extension workers in planning extension services is in the high category. This shows that agricultural extension workers in Kendari City have carried out extension planning very well. Extension planning in this research includes the work of extension workers in producing regional and agroecosystem potential data, the work of extension workers in preparing permanent plans for farmer groups, the work of extension workers in preparing agricultural extension programs in villages and sub-districts, as well as the work of extension workers in preparing annual work plans for agricultural extension workers.

***The extension worker's performance in implementation*:** The performance of instructors in the implementation of extension training is in the high category. This shows that the agricultural instructors in Kendari City have carried out counselling very well. The implementation of extension is a very important aspect of the performance of extension workers because the implementation of extension is the implementation of extension planning. Implementation of the extension includes: implementation of dissemination of innovations that suit farmers' needs, application of extension materials, increasing farmers' ability to access market information, technology, infrastructure and funding, growing and developing farmer institutions, and increasing farming productivity.

***The extension worker's performance in evaluation*:** Evaluation of extension in the research area is in the high category. Evaluation in extension has an important role because with the evaluation carried out, an extension agent can identify and correct weaknesses or deficiencies in the implementation of extension to immediately make appropriate improvements. In this research, extension evaluation includes: monitoring and evaluating extension programs, making reports on the results of monitoring and evaluation of programs carried out, preparing program plans for improvements or improvements to programs that have been carried out, and carrying out program improvements.

***Research result data analysis*:** Analysis of the influence of instructor qualifications on instructor performance in this research was analyzed using structural equation modeling (SEM) - Partial least squares (PLS) analysis. Garson (2016) reported that data analysis uses structural equation modeling (SEM) - Partial least squares (PLS). used to predict or develop

previously existing theories. Hair *et al.* (2014) found that in structural equation modeling (SEM) - Partial least squares (PLS) analysis, there are several steps, namely: (1) Developing a structural model theory, (2) Testing the external model, (3) Testing the internal model, and (4) Testing the hypothesis.

***Structural model theory formulation*:** The structural model in this research includes independent variables or exogenous variables and dependent variables or endogenous and external variables. The independent variable or exogenous variable is the extension worker's qualifications which include: extension worker's communication skills (X1) which include 5 indicators (X1.1 – X1.5); extension worker's attitude (X2) which include 5 indicators (X2.1 – X2.5); extension worker's knowledge (X3) which include 5 indicators (X3.1 – X3.5); and introduction to the social culture of farmers (X4) which include 5 indicators (X4.1 – X4.5). The dependent variable or endogenous variable is the performance of agricultural advisors (Y) is composed of three endogenous variables in this study: performance in planning (Y1) which includes five indicators (Y1.1 - Y1.5); performance in implementation (Y2) which includes five indicators (Y2.1 - Y2.5); and performance in evaluating agricultural advisory services (Y3) which includes five indicators (Y3.1 – Y3.5). An image of the search structure model's formulation may be found below:

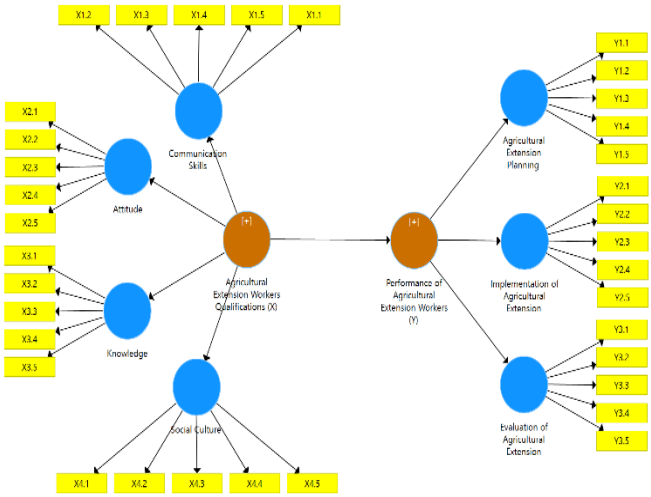

Figure 1. Formulation of the structural model theory.

***Outer model analysis*:** Measurement of the external model in the measurement model in this research was carried out by analyzing the attachment of indicators to each variable studied. The assessment of this measuring model includes tests for convergent and discriminant validity conducted by confirmatory factor analysis. Reliability assessments are conducted using two methods: Composite Reliability and Cronbach's Alpha (Purwanto and Sudargini, 2021). Parameters including convergent validity, discriminant validity, composite reliability, and Cronbach's Alpha are employed to evaluate construct validity and the reliability of the measurement model. These criteria evaluate the predicted accuracy of the model (Janadari, *et al.*, 2016). Figure 2 illustrates the outcomes of outer model processing.

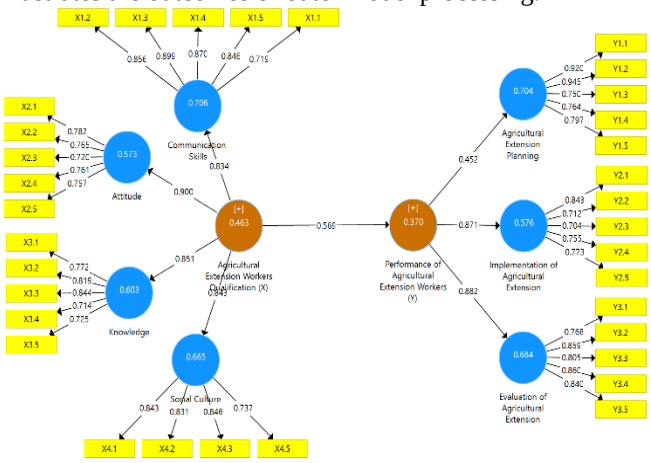

Figure 2. Outer model data processing results.

Figure 2 demonstrated that there is only one invalid instrument in the agricultural extension worker's qualification variable (X), which is instrument X4.4 in the socio-cultural dimension. There are no invalid instruments for the agricultural instructor performance variable (Y). The research instrument was purged of invalid research instruments (outer loading value <0.5). Chan and Idris (2017), a loading factor of 0.50 to 0.60 is deemed adequate for studies that are still in the process of creating a measurement scale. According to Kamis *et al.* (2020) 0.5 to 0.6 as the outer loading value can be deemed enough for meeting the conditions of convergent validity. According to Pervan *et al.* (2017) an outer loading value of 0.5 to 0.6 is thought to be adequate to satisfy the convergent validity requirements.

The loading factor limit employed in this investigation was 0.5. There exist alternative approaches to ascertain the cross loading value, one of which is to examine the average variant extracted (AVE) value. According to Anekawati *et al.* (2017) a latent variable is considered to have strong discriminant validity if the indicator's correlation with it is greater than its correlation with other latent variables. The ideal AVE value for this study is > 0.5.

The composite reliability test, supported by Cronbach's Alpha, was used to test the reliability of the model. The component used to evaluate the consistency of indicators against a variable is called composite reliability. By using the Cronbach's Alpha value, the reliability test through composite reliability can be strengthened. According to Hair *et al.* (2014) a variable with a Cronbach's alpha value greater than 0.6 can be deemed dependable or to satisfy Cronbach's alpha. If the composite reliability value of latent variables is higher than 0.6, then it can be considered that they have strong reliability. Although 0.6 is acceptable, the composite reliability coefficient needs to be better than 0.7. According to Mohajan (2017) if construct validity has been satisfied, there is no need to do the internal consistency test because a trustworthy construct does not always imply validity. According to Sarstedt *et al.* (2021) a strong reliability score is defined as having a composite reliability value between 0.6 and 0.7 and a Cronbach's alpha value greater than 0.7.

Due to their compliance with the necessary convergent validity, which is demonstrated by an outer loading greater than 0.5, Figure 2 illustrates the validity of all study variable instruments. The results of testing the measurement model, also known as the outer model, are reported here. The measurements include Cronbach's Alpha, composite reliability, convergent validity, and discriminant validity based on the performance and qualification variables of agricultural extension workers. Tables 3 and 4 display the outer model variables and instruments for agricultural extension workers' qualifications and performance in Kendari City.

Table 3. Outer model for variable qualifications of agricultural extension workers.

Variable	Dimensions	Indicator	*Factor loading*	*Composite reliability*	Crombach's alpha	AVE
Qualifications of agricultural extension workers (X)	Communication skills (X1)	X1.1	0,719	0,923	0,894	0,706
		X1.2	0,856			
		X1.3	0,899			
		X1.4	0,870			
		X1.5	0,846			
	Attitude (X2)	X2.1	0,782	0,870	0,814	0,573
		X2.2	0,765			
		X2.3	0,720			
		X2.4	0,761			
		X2.5	0,757			
	Knowledge (X3)	X3.1	0,772	0,883	0,834	0,603
		X3.2	0,819			
		X3.3	0,844			
		X3.4	0,714			
		X3.5	0,725			
	Social culture (X4)	X4.1	0,843	0,888	0,833	0,665
		X4.2	0,831			
		X4.3	0,846			
		X4.5	0,737			

Source: Processed Primary Data, 2023

Table 4. Outer model for variable performance of agricultural extension workers.

Variable	Dimensions	Indicator	*Factor loading*	*Composite reliability*	Crombach's alpha	AVE
Performance of Agricultural Extension Workers (Y)	Agricultural Extension Planning (Y1)	Y1.1	0,920	0,922	0,893	0,704
		Y1.2	0,945			
		Y1.3	0,750			
		Y1.4	0,764			
		Y1.5	0,797			
	Implementation of Agricultural Extension (Y2)	Y2.1	0,843	0,871	0,815	0,576
		Y2.2	0,712			
		Y2.3	0,704			
		Y2.4	0,755			
		Y2.5	0,773			
	Evaluation of Agricultural Extension (Y3)	Y3.1	0,768	0,915	0,884	0,684
		Y3.2	0,859			
		Y3.3	0,805			
		Y3.4	0,860			
		Y3.5	0,840			

Source: Processed Primary Data, 2022

The instruments for each of the relevant qualifying characteristics for agricultural extension workers were displayed in Table 3. The following are valid instruments for measuring communication abilities: X1.1 for verbal communication skills; X1.2 for non-verbal communication skills; X1.3 for message clarity; X1.4 for timeliness of communication; and X1.5 for accuracy in using communication tools. The following are valid tools for measuring attitude: (X2.1) Be presentable; (X2.2) Honest; (X2.3) Discipline; (X2.4) Be transparent; and (X2.5) Be impartial. The regional potential analysis (X3.1), the farmers' conditions analysis (X3.2), the mastering counseling material (X3.3), the mastering extension methods and techniques (X3.4), and the mastering extension media (X3.5) are valid tools in the knowledge dimension. Understanding farmer culture (X4.1), adapting to farmer culture (X4.2), interacting with farmer culture (X4.3), and having tolerance for farmer culture (X4.5) are the valid instruments in the communication dimension.

Valid agricultural extension workers' performance variable instruments were displayed in Table 4. The following is a valid instrument to measure the performance of agricultural extension workers in extension planning: (Y1.1) Extension workers compile data related to regional potential; (Y1.2) Extension workers generate data on agro-ecosystems; (Y1.3) Extension workers assist in the preparation of the RDKK; (Y1.4) Extension workers prepare agricultural extension programs for villages and sub-districts; and (Y1.5) Extension workers create an annual work plan. Y2.1: Extension workers distribute extension materials in accordance with farmers' needs; Y2.2: Extension workers apply agricultural extension methods in the target area; Y2.3: Extension workers increase farmers' capacity to access market information, technology, infrastructure, and financing; Y2.4: Extension workers grow and develop farmer institutions; Y2.5: Extension workers increase farming productivity. These are valid instruments on the performance of agricultural extension worker's dimensions in implementing extension. Y3.1: Extension workers monitor extension activities; Y3.2: Extension instructors' performance in extension evaluation includes (KEV.1) Extension workers evaluate extension activities; Y3.3: Extension workers prepare a report on extension activities; Y3.4: Extension workers prepare activity improvement plans; and Y3.5: Extension workers improve extension activities are the valid instruments on the dimensions for performance of agricultural extension workers in extension evaluation.

***Inner model analysis*:** Inner model analysis is a test conducted after the outer model, or measurement model, in Smart PLS analysis. The concept or variable being tested meets the criteria for data validity and reliability based on an examination of the measurement model (outer model). The results of the inner model (model structure test) conducted using the Bootstrapping Test in the Smart PLS application are as follows.

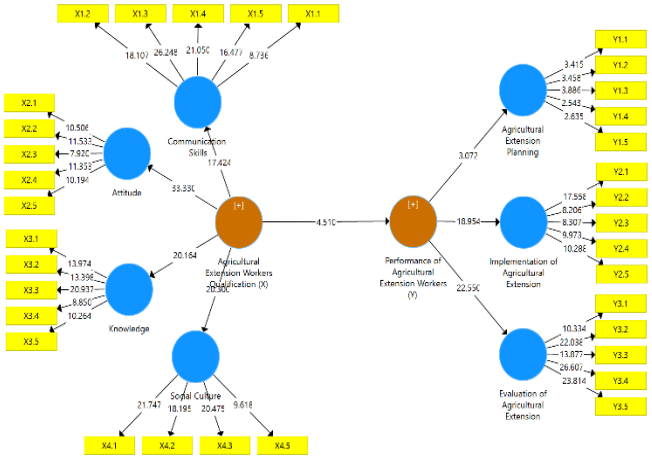

Figure 3. Results of structural model evaluation.

The structural model is assessed in the inner model analysis. Path Coefficient, R-Square (R^2), and hypothesis testing are examples of inner model analysis, or evaluation, of the structural model used in this study.

***Path coefficient test*:** The direction of the independent variable's Effect on the dependent variable is shown through the evaluation of the path coefficient. According to Purwanto *et al.* (2021) if the path coefficient value is positive, there will be a unidirectional influence between the dependent variable and the independent variable. On the other hand, if the value of the Ruta coefficient is negative, the independent variable's effect on the dependent variable is inversely correlated. In research, the path coefficient test is used to analyze the magnitude and direction of the influence of the independent variable on the dependent variable. The results of measuring the path coefficient in this study can be seen in Table 5.

Table 5. Path coefficient values of research dependent variables.

Construct	Performance of Agricultural Extension Workers (Y)
Qualifications of Agricultural Extension Workers (X)	0.569

Source: Processed Primary Data, 2023

Table 5 showed that the path coefficient in this study is positive, namely: 0.569. This shows that the direction of influence or relationship between extension workers qualification variables on extension workers performance is in a positive direction.

***R- square*:** In research, the R-Square value is used in the Variance Analysis test to assess the level of influence of each extension worker's qualification variable on the extension worker's performance variable. Suhan *et al.* (2018) reported that R-Square is a test or analysis in analyzing the influence of the independent variable on the dependent variable in a study. The prediction model of the proposed research improves as the R-Square value increases. Table 6 presents the R-Square (R^2) value, an essential metric for assessing the Effect of a certain endogenous variable.

Table 6. R-Square value.

Construct	R Square	R Square Adjusted
Performance of Agricultural Extension Workers (Y)	0.353	0.342

Source: Processed Primary Data, 2023

Table 6 demonstrates that the R-Square for the performance of agricultural extension worker's variable is 0.353, indicating a 35.3% effect of agricultural extension workers' credentials on the performance of agricultural extension agents. The R-Square from the research data indicates that the credentials of agricultural extension workers effect their performance in the medium category in Kendari City. Ghozali and Latan (2015) assert that endogenous latent variables in the structural model with R-Square values of 0.67 or higher demonstrate that exogenous variables effect and affect endogenous variables categorized as excellent. The R-Square value categorizes as weak if it ranges from 0.19 to 0.33, and as medium if it falls between 0.33 and 0.67.

A robust model is represented by an R-Square of 0.75, a moderate model by an R-Square ranging from 0.50 to 0.75, and a weak model by an R-Square between 0.25 and 0.50 (Rachel *et al*., 2022). Ghozali and Latan (2015) delineate three methods for assessing R-Square: (1) a value of 0.75 or above signifies a strong effect between the constructs; (2) a value ranging from 0.50 to 0.75 denotes a moderate effect; and (3) a value between 0.25 and 0.50 reflects a weak effect.

***Hypothesis testing*:** The analysis of original sample estimates (O), t-statistics (T), and P-values (P) assesses the relationship between the variables and its significance. Sarstedt *et al.* (2017) contend that original sample values nearing +1 denote a positive correlation, whereas numbers approximating -1 imply a negative correlation. A significant connection between variables is suggested by a P-value below the significance threshold (<0.05) or a t-statistic greater than 1.96.

Table 7. Effect of independent variables on dependent variables.

Construct	Original sample (O)	Sample mean (M)	t Statistics (|O/STDEV|)	P values
Qualifications of Agricultural Extension Workers (X) -> Performance of Agricultural Extension Workers (Y)	0,569	0,566	4,544	0,000

Source: Processed Primary Data, 2023.

According to Table 7, the hypotheses of this investigation are accepted as each hypothesis has a P-value less than 0.05. Table 9 indicates that the efficacy of agricultural extension workers in Kendari Regency is greatly enhanced by the qualifications of the extension personnel. The table indicates a P-value of 0.0000, which is less than 0.05. The effectiveness of agricultural extension personnel is significant in Kendari City is directly and considerably affected by their qualifications. The credentials of agricultural extension workers can positively affect the organization, implementation, and assessment of extension operations, hence enhancing their performance.

***Conclusion*:** The results of the study showed that both the qualifications and performance of the agricultural extension workers were high, meaning they are doing well. The good or adequate group was indicated by the model of the relationship between agricultural extension workers' qualifications and their performance. The performance of agricultural extension workers is positively impacted by their qualifications in a considerable way. Planning, carrying out, and assessing agricultural extension will be carried out more effectively by agricultural extension workers thanks to their growing qualifications, which include social skills, knowledge, attitudes, and communication abilities. In order to improve the performance of agricultural extension workers in agricultural extension, it is recommended that the government implement various policies and programs to improve the qualifications of agricultural extension workers.

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***Informed consent*:** Informed consent was obtained from all participants regarding publishing their data.

***SDGs addressed*:** No poverty and Zero Hunger, Quality Education, Decent Work and Economic Growth, Reduced Inequality, Responsible Consumption and Production.

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