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Does the Laying Hen Assistance Program Improve the Farmer's Economy? Study in Palopo City Government

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ABSTRAK

Penelitian ini dilakukan untuk menganalisis dengan tujuan mendapatkan informasi yang lebih akurat terhadap bagaimana pengaruh peran penyuluh pertanian dan bantuan ayam petelur yang telah diberikan pemerintah kepada kelompok Tani ternak dapat memberikan manfaat ekonomi bagi anggotanya. Penelitian ini dilakukan di Palopo pada Dinas Pertanian, Peternakan dan Perkebunan mulai dari bulan November s/d Desember 2023 terhadap kelompok peternak ayam petelur yang telah menerima bantuan di Kota Palopo selama lima tahun terakhir. Metode deskriptif dengan pendekatan kuantitatif digunakan pada penelitian ini. data diolah menggunakan teknik SEM. Data sekunder dikumpulan menggunakan kuesioner yang dibagikan kepada 60 anggota kelompok yang telah mendapatkan pendampingan, yaitu satu pengurus dan satu anggota kelompok. Hasil analisis statistik terhadap pengaruh masing-masing variabel penelitian dinyatakan bahwa dari 10 hipotesis yang diteliti, terdapat dua hipotesis yang diterima (positif dan siknifikan), yaitu Hipotesis 5 dan Hipotesis 6, sedangkan hipotesis lain dalam analisis statistik ditemukan ditolak (tidak berpengaruh positif dan siknifikan). Sedangkan secara keseluruhan pengaruh variabel inovasi dan adopsi teknologi, efektifitas bantuan dan fungsi penyuluh pertanian secara bersama sama mempengaruhi variabel peningkatan ekonomi petani sebesar 74,9% termasuk kriteria kuat, sedangkan pengaruh variabel inovasi dan adopsi teknologi, efektifitas bantuan dan fungsi penyuluh pertanian secara bersama-sama variabel program bantuan ayam petelur sebesar 24,2% termasuk kriteria lemah.

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ABSTRACT

This study was conducted to analyze with the aim of obtaining more accurate information on how the influence of the role of agricultural extension workers and laying hen assistance that the government has provided to livestock farmer groups can provide economic benefits for their members. This research was conducted in Palopo at the Department of Agriculture, Livestock and Plantations starting from November to December 2023 on a group of laying hen farmers who have received assistance in Palopo City for the past five years. A descriptive method with a quantitative approach used in this study. The data processed using SEM techniques. Secondary data was collected using a questionnaire that was distributed to 60 group members who had received assistance, namely one administrator and one group member. The results of statistical analysis on the influence of each research variable stated that of the 10 hypotheses studied, there were two hypotheses that were accepted (positive and positive), namely Hypothesis 5 and Hypothesis 6, while other hypotheses in statistical analysis were found to be rejected (no positive and negative effect). Meanwhile, the overall influence of the variables of innovation and technology adoption, the effectiveness of assistance and the function of agricultural extension workers together affect the variables of farmers' economic improvement by 74.9%, including strong criteria, while the influence of the variables of innovation and technology adoption, the effectiveness of assistance and the function of agricultural extension workers together are 24.2% of the variables of the laying hen assistance program including weak criteria.

INTRODUCTION

Agricultural extension plays a crucial and essential role in the development of the livestock and agriculture industries. Extension efforts play a crucial role in the agricultural sector's development by acting as a link between farmers' practices and the constantly evolving agricultural knowledge and technology (Saputri *et al*., 2016). It is imperative that the extension workers themselves provide their assistance for the proper implementation of counseling activities. An agricultural extension worker needs to be competent and able to demonstrate good performance in order to be able to create a work plan and carry out extension with the requirements of the community as his goal (Sunartomo, 2016).

Since agricultural extension workers are the driving force behind agricultural development in Indonesia, they must possess the skills of inventors, facilitators, advisors, and communicators (Purwatiningsih *et al*., 2018). The success of agriculture is significantly impacted by extension workers as they directly engage with farmers, ensuring that all government-led programs through the Agriculture Office are directly implemented for the benefit of farmers. Extension workers not only provide development programs, but also promote farmers to enhance their knowledge, broaden their perspectives, and adopt a market-oriented approach. The role of agricultural extension workers as motivators for farmers in assisted areas is inseparable (Berhanu & Poulton, 2014).

Agricultural Extension Officers are officers of the Agriculture Service whose main task is to help farmers run farming businesses (Darmawan & Mardikaningsih, 2021). Extension workers employ extension methodologies, such as establishing learning centers for farmers and agricultural entrepreneurs, to provide assistance in effectively managing diverse information pertaining to markets, capital, technology, and resources. The aim is to enhance business efficiency, boost productivity, improve welfare

and income, and, crucially, raise awareness about environmental conservation (Ardita *et al*., 2017).

Agriculture and livestock are two sectors that have an important role in meeting food needs, economic income, and maintaining a country's food security (Mulyaningsih *et al*., 2020). Livestock assistance is one of the approaches used by governments and non-governmental organizations to improve the productivity and welfare of farmers (Budisatria & Udo, 2013). This assistance model covers various aspects, ranging from the provision of quality livestock seeds, livestock training, access to markets, to business capital assistance. Rocks are all kinds of ways provided by the government and support community business activities, both individuals and groups (Zali, 2019). This assistance can be in the form of innovations that often involve significant changes in the way things are done or presenting more effective and efficient solutions (Belton *et al*., 2021). The provision of assistance budgeted by the government can help the community's economy. The government strongly supports and prioritizes livestock assistance programs to reduce poverty experienced by the community. One form of assistance provided to the community is livestock assistance (Wijayanto *et al*., 2022).

Socioeconomic life is economic behavior and interaction from society related to income and its use (Bawono *et al*., 2020). So socio-economic means also discussing needs when talking about life, and the use of the economic results obtained. Socio-economic life in question is a strategy applied by someone, in this case a farmer group in fulfilling the needs of daily life. For this improvement, an innovation is needed, innovation is the process of creating and integrating new ideas, concepts, or products that have added value, both in the context of business, technology, and in society (Fabiani *et al*., 2020). Innovation often involves significant changes in the way things are done or presenting more effective and efficient solutions (Belton *et al*., 2021). Information technology can address the existing deficiency in agricultural innovation and information by providing access to market information, production inputs, consumer trends, marketing strategies, disease and pest management for livestock and crops, market opportunities, and market prices. Law No. 16 of 2006 concerning the Agriculture, Fisheries and Forestry Extension System (SP3K) article 4b states that the social function of extension is to seek easy access for main actors and business actors to information, technology and other resources so that they can develop their businesses. Furthermore, article 15 paragraph 1c also mandates that the Extension Center is obliged to provide and disseminate information about technology, means of production, financing and markets (Elian *et al*., 2014).

Technology Adoption, on the other hand, refers to the acceptance and use of new technologies by individuals, organizations, or societies. Technology adoption includes various stages, from awareness of the technology, then understanding how it works, to integrating it into daily activities (Wahyuni, 2021). To increase their knowledge, innovations are provided by the government, by

providing them with assistance in the form of livestock tools and machinery.

According Anwas (2013) with research that aims to evaluate the competence of Agricultural Extension Workers where in the study it was found that in carrying out their duties as agricultural extension workers, it is hoped that there will be acceptance of something new by farmers called adoption, acceptance by farmers means not only knowing, but until they can actually apply it and even apply it well and appreciate it in running their agricultural business. Applying agricultural production technology instructed by extension workers can increase the productivity of farmer agricultural companies.

Literatur Review

Studies on the socio-economic consequences of government aid, such as those carried out by Wati *et al*. (2020), the effect of agricultural extension on socio-economic and technology behavior rice farmers in Sutojayan Sub-District, Blitar Regency. Attained outcomes concurrently, the impact of agricultural extension workers (the ability of extension workers to motivate, extension workers as facilitators and extension workers as educators) has an effect on the socio-economic and technological behavior of rice farmers in Sutojayan District, Blitar Regency:

1. Partially, the ability of extension workers to motivate affects the socio-economic and technological behavior of rice farmers in Sutojayan District, Blitar Regency;
2. Partially, extension workers as facilitators have an effect on the socio-economic and technological behavior of rice farmers in Sutojayan District, Blitar Regency;
3. Partially, extension workers as educators have an effect on the socio-economic and technological behavior of rice farmers in Sutojayan District, Blitar Regency.

This study will examine the impact of agricultural extension workers and government-provided laying hen assistance on the economic benefits of beneficiary livestock groups. Identify changes in farmers' incomes, their access to resources and markets, and broader economic impacts. The direct assistance model is expected to positively influence the income and welfare of the farming community. Moreover, enhancing the efficiency and excellence of livestock goods can also create broader market prospects, consequently augmenting the earning potential of farmers.

This study studies the variables observed descriptively and analyzes the influence that occurs between dependent variables on independent variables. The dependent variables consisted of the improving the farmer economy (Y), while the independent variables consisted of innovation and technology adoption (X1), the effectiveness of assistance (X2), the role of agricultural extension workers (X3), and the laying hen assistance program (Z). In table 1, each variable and indicator used can be seen, while in figure 1 it can be seen the conceptual aspects of this study.

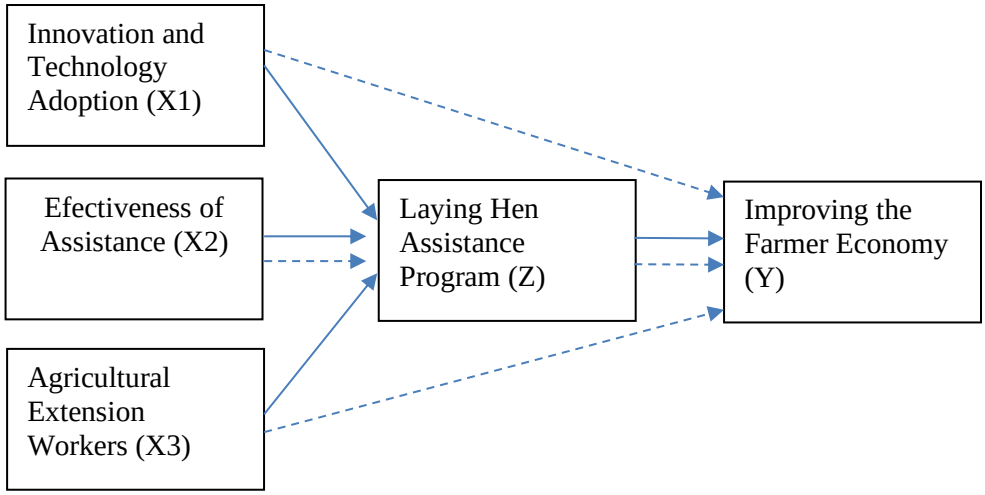

Figure 1. Conceptual framework of the research

Table 1. Research Variables and Indicators

No	Variable	Operational Definition of Variables	Indicator	Scale
1	Improving the Farmer Economy (Y)	The increase in economic opinion obtained by Petrnak directly from the laying hen business activities he carried out.	(y1) Changes in income; (y2) Changes in livelihood sources; (y3) Economic capability; (y4) Ability to manage assets; (y5) Ability to develop a business (Harahap *et al*., 2023).	Likert
2	Laying hen assistance program (Z)	Laying hen assistance provided by the Palopo City government to reduce the number of poverty rates in a sustainable manner	(z1) Proposal for assistance; (z2) Recommendations; (z3) Cooperation between members; Z4) Ownership of cage land (Anas & Azwar, 2019)	Likert
3	Technology innovation and adoption (X1)	Willing to wholeheartedly accept new technology and apply it to its poultry farming activities.	(x1.1) The level of technology use; (x1.2) User satisfaction level; (x1.3) Implementation time; (x1.4) Efficiency and productivity; (x1.5) Training and support levels; (x1.6) Error rate and problems (Wahyuni, 2021).	Likert
4	Effectiveness of assistance (X2)	The effectiveness of the assistance and makes the laying hen business activities easy to do.	(x2.1) Suitability to needs; (x2.2) Adequacy level; (x2.3) Quality; (x2.4) Innovation rate (García *et al*., 2012).	Likert

No	Variable	Operational Definition of Variables	Indicator	Scale
5	The function of agricultural extension workers (X3)	Agricultural extension workers are government officials responsible for providing guidance and support to farmers and breeders in their respective areas of work.	(x3.1) Intensive; (x3.2) Participation; (x3.3) Material suitability; (x3.4) Perceived benefits (Berhanu & Poulton, 2014).	Likert

METHODS

This research was conducted at the Palopo City Agriculture, Livestock and Plantation Office, Animal Husbandry, during the research period from November to December 2023 on a group of laying hen farmers who have received livestock assistance in Palopo City for the past five years. Data collection technique in this study is a questionnaire distributed to 60 members of the laying hen farmer group who have received assistance, namely one administrator and one group member in Palopo City for the last five years, considering the representativeness of the population and the type of research which is a descriptive research with a quantitative approach, the number of samples is determined to be 20% of the population, namely 300 × 20% = 60 members of the farmer group. Data collection was conducted through a structured interview technique utilizing a questionnaire that employed the Likert scale. The size of the research sample was determined to be 20% of the population with the aim of making it easier to collect data and can already represent the number of the research population. The determination of this sample is based on opinion (Gay *et al*., 2012).

This study is designed as descriptive research with an explanatory quantitative approach. Explanatory quantitative research is research that explains the phenomenon that occurs at an interconnected research site (Budhiasa, 2016) The data analysis technique employed in this study is an explanatory descriptive statistical technique with a quantitative approach and inferential statistical analysis. Descriptive statistical analysis is a method used to examine the structure of data and determine if there is a correlation between the values of a variable that is distributed, whereas inferential statistical analysis is used to infer results derived from a sample in relation to the population. A distinction is also made between the number of variables considered in relation to each other (Darwin & Reynalda, 2021). In this study, imperative statistical analysis uses variance-based *Structural Equation Modeling* (SEM) techniques. The analysis tool used is smart PLS 3.0. PLS is one of the variant-based SEM statistical methods designed to solve multiple regressions when specific problems occur in the data, such as small research sample size, missing value, and multicollinearity (Solling & Anwar, 2019).

RESULTS AND DISCUSSIONS

Distribution of Respondents Based on Innovation and Technology Adoption (X1)

The distribution of the research respondents' perception of the innovation and technology adoption variable (X1) by summing the answer values using the Liker scale (scale 1-5), then the frequency was analyzed using the SPSS application, the results are presented in table 2 as follows:

Table 2. Distribution of Respondents Based on Innovation and Technology Adoption (X1)

Category (Scale 1-5)	Frequency	Percent
Low (<47)	8	13.3
Keep (48-72)	35	58.3
Tall (>73)	17	28.3
Sum	60	100
Average	2.15	

Based on table 2 above, the majority of the influence of innovation and technology adoption (X1) is in the high category, which is 28.3% and the medium category is 58.3% and 13.3% is in the low category. Overall, the average influence of service quality is 2.15 on a scale of 1 to 5.

Distribution of Respondents Based on Assistance Efficiency (X2)

The distribution of the research respondents' response to the variable of assistance efficiency (X2) by summing the answer values using the Liker scale (scale 1-5), then the frequency was analyzed using the SPSS application, the results were presented in table 3 as follows.

Table 3. Distribution of Respondents Based on Assistance Efficiency (X2)

Category (Scale 1-5)	Frequency	Percent
Low (<35)	45	75
Keep (36-57)	0	0
Tall (>58)	15	25
Sum	60	100,0
Average	1.5	

Based on table 3 above, it shows that the majority of assistance efficiency (X2) is in the high category, which is 25%, the medium category is 0% and 45% is low. Overall, the average assistance efficiency is 1.5 on a scale of 1 to 5.

Distribution of Respondents Based on The Role of Agricultural Extension Workers (X3)

The distribution of the research respondents' response to the variable of the role of agricultural extension workers (X3) by summing the answer values using the Liker scale (scale 1-5), then the frequency was analyzed using the SPSS application, the results were presented in table 4 as follows.

Table 4. Distribution of Respondents Based on The Role of Agricultural Extension Workers (X3)

Category (Scale 1-5)	Frequency	Percent
Low (<38)	2	3.3
Keep (39-64)	35	58.3
Tall (>65)	23	38.3
Sum	60	100,0
Average	2,35	

Based on the results of table 4 above, the role of agricultural extension workers (X3) is in the high category, which is 38.3%, the medium category is 58.3% and 3.3% is relatively low. Overall, the average role of agricultural extension workers is 2.35 on a scale of 1 to 5.

Distribution of Respondents Based on The Improvement of The Farmer Economy (Y)

The distribution of the research respondents' perception of the variable of improving the farmer's economy (Y) by summing the answer values using the Liker scale (scale 1-5), then the frequency was analyzed using the SPSS application, the results were presented in table 5 as follows:

Table 5. Distribution of Respondents Based on The Improvement of The Farmer Economy (Y)

Category (Scale 1-5)	Frequency	Percent
Low (<49)	6	10
Keep (50-77)	38	63.3
Tall (>78)	16	26.7
Sum	238	100,0
Average	2,17	

Based on the results of table 5 above, it shows that the economic growth of the community (Y) is in the high category, which is 26.7%, the medium category is 63.3% and 10% is relatively low. Overall, the average economic improvement of farmers is 2.17 on a scale of 1 to 5.

Distribution of Respondents Based on The Laying Hen Assistance Program (Z)

The distribution of the research respondents' response to the variables of the laying hen assistance program (Z) by summing the answer values using the Liker scale (scale 1-5), then the frequency was analyzed using the SPSS application, the results were presented in table 6 as follows:

Table 6. Distribution of Respondents Based on The Laying Hen Assistance Program (Z)

Category (Scale 1-5)	Frequency	Percent
Low (<44)	13	21.7
Keep (45-59)	30	50
Tall (>60)	17	28.3
Sum	60	100,0
Average	2,07	

Based on the results of table 5 above, the laying hen assistance program (Z) is in the high category, which is 28.3%, the medium category is 50% and 21.7% is low. Overall, the average laying hen assistance program is 2.07 on a scale of 1 to 5.

Outer Model

Figure 2 depicts the term "Outer Model" or "Outer Measurement" is synonymous with the term "measurement model." The primary objective of the outer model test is to precisely define the connection between latent variables and the indicators that represent them. The outer model test uses the help of *the PLS Algorithm procedure* (Setiaman, 2020). Model evaluation is a quantitative assessment of a model's validity and reliability (Setiaman, 2020) The outer model test consists of:

Convergent Validity (Loading Factor)

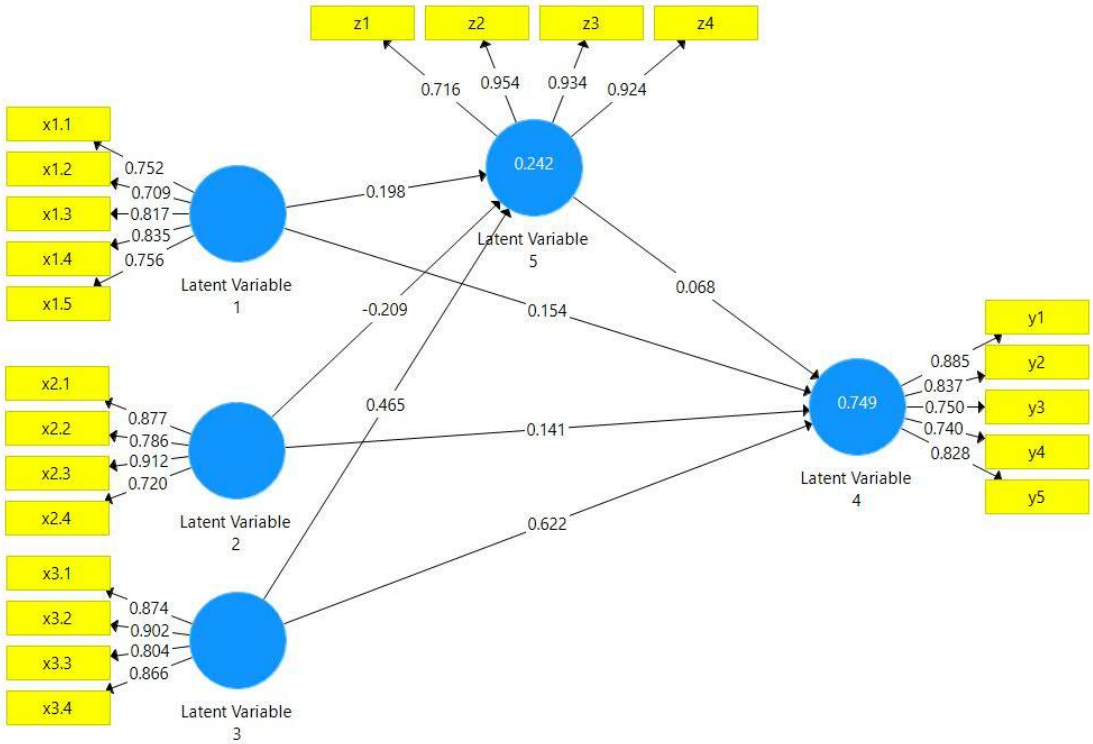

Figure 2. Outer model SEM (Output Smart-PLS)

Table 7. Outer Loading (Convergent Validity)

Indicator	(X1) Technology innovation and adoption	(X2) Accessibility	(X3) The function of agricultural extension workers	(Z) Laying hen assistance program	(Y) Improvement of the economy of farmers
(X1.1) Technology usage rate	0,752				
(X1.2) User satisfaction level	0,709				
(X1.3 Implementation time	0,817				
(X1.4) Efficiency and productivity	0,835				
(X1.5) Level of training and support	0,756				
(X2.1) Adaptability to needs		0,877			
(X2.2) Adequacy level		0,786			
(X2.3) Quality		0,912			
(X2.4) Innovation level		0,720			
(X3.1) Intense			0,874		
(X3.2) Participation			0,902		
(X3.3) Material suitability			0,804		
(X3.4) Benefits felt			0,866		
(Z1) Proposal for assistance				0,716	
(Z2) Recommendations				0,954	
(Z3) Cooperation between members				0,934	
(Z4) Kendang land ownership				0,924	
(Y1) Changes in revenue					0,885
(Y2) Changes in livelihood					0,837

Indicator	(X1) Technology innovation and adoption	(X2) Accessibility	(X3) The function of agricultural extension workers	(Z) Laying hen assistance program	(Y) Improvement of the economy of farmers
sources					
(Y3) Economic capability					0,750
(Y4) Ability to manage assets					0,740
(Y5) Ability to develop a business					0,828

Table 8. Composite Reliability and Cronbach Alpha Values

Variabel	Cronbach's Alpha	Composite Reliability
(X1) Technology innovation and adoption	0,839	0,883
(X2) Effectiveness of assistance	0,844	0,896
(X3) The role of agricultural extension workers	0,885	0,921
(Z) Uanggas livestock assistance program	0,867	0,905
(Y) Improving the community's economy	0,906	0,936

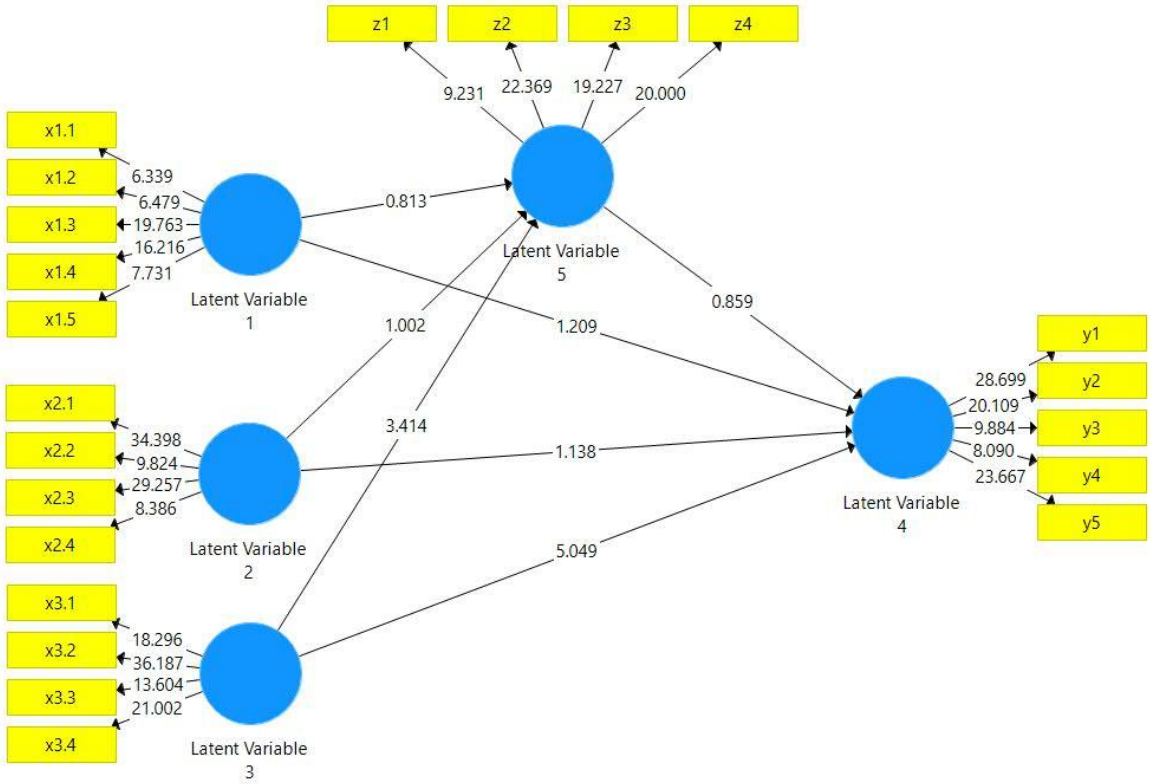

Figure 3. Inner model SEM (Output Smart-PLS)

Table 8. Variable T Value Independent of Dependent Variable

Variable	T Statistics	T Table	P Values	Cut off P Value
(X1) -> (Y)	1,270	2.000	0,205	0,05
(X1) -> (Z)	0,813	2.000	0,417	0,05
(X2) -> (Y)	1,060	2.000	0,290	0,05
(X2) -> (Z)	1,002	2.000	0,317	0,05
(X3) -> (Y)	5,958	2.000	0,000	0,05
(X3) -> (Z)	3,414	2.000	0,001	0,05
(Z) -> (Y)	0,859	2.000	0,391	0,05
(X1) -> (Z) -> (Y)	0,465	2.000	0,642	0,05
(X2) -> (Z) -> (Y)	0,572	2.000	0,568	0,05
X3) -> (Z) -> (Y)	0,793	2.000	0,428	0,05

The Convergent Validity Test assesses the extent to which the loading factors of latent variables align with their corresponding indicators. Table 2 demonstrates that the outer model analysis yielded outer loading values for each variable indicator that surpass the validity threshold of > 0.7. Hence, the aforementioned model is deemed to be valid.

Average Variance Extracted (AVE)

The purpose of this test is to assess the validity of the indicators in the reflective model. The measured value is AVE with an expected value > 0.5. Table 3 indicates that the AVE value for each variable in the study is > 0.5. Therefore, it can be inferred that all variables in the analyzed by SEM are deemed valid.

Reliability Model

Composite Reliability and Cronbach Alpha are utilized to assess the reliability of the SEM model. This form of reliability is used to assess the internal consistency of the variable indicator. A variable is considered reliable when its Cronbach's Alpha value exceeds 0.6, and Composite Reliability is considered reliable when its value exceeds 0.7. Table 11 indicates that all variables in the analyzed SEM model have a Cronbach's Alpha value > 0.6 and a Composite Reliability value > 0.7. Therefore, it can be concluded that the SEM model is reliable.

Inner Model

Figure 3 depicts the Inner Model test, which examines the hypothesized relationship between exogenous and endogenous constructs. The values for this test are generated using the bootstrapping method in Smart PLS. The Inner Model test is also referred to as the structural test (Budhiasa, 2016).

Hypothesis Testing

The purpose of statistical T analysis is to quantify the extent of the impact between variables. The Statistical T Value > T table demonstrates a strong and statistically significant impact of variables, as indicated by their P-values < 0.05. The purpose of SEM inner model analysis is to assess the magnitude of the Statistical T value and P Value, which are indicators of the strength of the influence that independent variables have on dependent variables. The hypothesis test of the independent variable against the dependent

variable can be formulated based on the results of the statistical T analysis presented in Table 5.

Hypothesis 1: (Y) is predicted to be positively and significantly influenced by (X1). The SEM analysis yielded the results. The calculated T statistic = 1.270, which is less than the critical T value = 2.000. The corresponding p-value = 0.205. Significance level = 0.05. Therefore, it can be concluded that variable (X1) has neither a positive not a significant impact on (Y), leading to the rejection of hypothesis 1.

Hypothesis 2: (X1) is predicted to have a positive and substantial impact on (Z). The results of the SEM analysis were statistically significant T statistics = 0.813 < T table = 2.000 with a P Value = 0.417 > *a Cut off Value* of 0.05. Therefore, it can be concluded that variable (X1) does not have a statistically significant positive effect on (Z), leading to the rejection of hypothesis 2.

Hypothesis 3: (Y) is predicted to be positively and significantly influenced by (X2). The SEM analysis yielded T statistics as the results = 1.060 < T table = 2.000 with P Value = 0.290 > *Cut off Value* of 0.05. Consequently, it can be inferred that the variable (X2) lacks a positive and statistically significant impact on (Y), leading to the rejection of hypothesis 3.

Hypothesis 4: (Z) is predicted to be positively and significantly influenced by (X2). The SEM analysis yielded T statistics for the results = 1.002 < T table = 2.000 with P Value = 0.317 > *Cut off Value* of 0.05. Therefore, it can be concluded that variable (X2) has neither a positive nor a significant impact on (Y), leading to the rejection of hypothesis 4.

Hypothesis 5: (Y) is predicted to be positively and significantly influenced by (X3). The results of SEM analysis obtained T statistics = 5.958 > T table = 2.000 with P Value = 0.000 < *Cut off Value* of 0.05. Therefore, it can be concluded that the variable (X2) has a statistically significant positive impact on (Y), thus supporting the acceptance of hypothesis 5.

Hypothesis 6: (Z) is predicted to be positively and significantly influenced by (X3). The results of the SEM analysis obtained T Statistics = 3.414 > T table = 2,000 with P Value = 0.001 < *Cut off Value* of 0.05. Therefore, it can be concluded that the variable (X2) has a statistically significant positive impact on (Y), leading to the acceptance of hypothesis 6.

Hypothesis 7: (Z) is predicted to have a positive and substantial impact on (Y). The results of the SEM analysis were obtained T statistics = 0.859 < T table = 2.000 with P Value = 0.391 > *Cut off Value* of 0.05. Consequently, it can be inferred that the variable (Z) lacks a positive and statistically significant impact on (Y), leading to the rejection of hypothesis 7.

Hypothesis 8: (X1) is predicted to have a positive and substantial impact on (Y) by means of (Z) acting as an intermediary variable. The results of the SEM analysis obtained T statistics = 0.465 > T table = 2.000 with the P Value = 0.642 > *the Cut off Value* of 0.05. Therefore, it can be concluded that hypothesis 8 is rejected because the variable (X1) does not have a positive and significant impact on (Y) through (Z) as an intervening variable.

Hypothesis 9: (X2) is hypothesized to have a positive and statistically significant impact on (Y) by means of (Z) acting as an intervening

variable. The results of the SEM analysis obtained T statistics = 0.572 > T table = 2,000 with a P Value = 0.568 > *Cut off Value* of 0.05. Therefore, it can be concluded that variable (X2) does not exert a positive and statistically significant influence on (Y) through (Z) as an intervening variable, leading to the rejection of hypothesis 9.

Hypothesis 10: (X3) is hypothesized to have a positive and significant impact on (Y) by means of (Z) acting as an intervening variable. The results of SEM analysis were obtained T statistical = 0.793 > T table = 2.000 with P Value = 0.428 > *Cut off Value* of 0.05. Consequently, it can be concluded that the variable (X3) does not exert a positive and statistically significant influence on (Y) through (Z) as an intermediate variable, thereby leading to the rejection of hypothesis 10.

Determinant Analysis Results (*R Square*)

The purpose of determinant analysis, also known as R Square, is to measure the collective impact of independent variables on dependent variables based on specific criteria (Awang *et al*., 2015) stating that *the R square* value of 0.75 is included in the strong category, the *R square* value of 0.50 is included in the moderate category and *the R square* value 0.25 is in the weak category. The results of determinant analysis on the SEM Model are presented in the following table 6, it can be seen that the variables (X1), (X2) and (X3) together affect (Y) by 74.9%, which can be said to be a strong criterion. For the variables (X1), (X2) and (X3) affecting (Z) by 24.2%, it can be said that the criteria are weak.

Table 6. Results of Determinant Analysis of Variable Independent

Variabel	R Square	R Square Adjusted
(Y) Peningkatan ekonomi masyarakat	0,749	0,731
(Z) Program bantuan ternak unggas	0,242	0,202

DISCUSSION

The Influence of Innovation and Technology Adoption (X1) on Community Economic Improvement (Y)

The analysis of respondent responses revealed that, on average, respondents provided a negative response to innovation and technology adoption, which had no significant positive impact on the improvement of the community's economy. The significance value is 0.205 > from a value of α = 0.05. This suggests that the impact of innovation and technology adoption on enhancing the community's economy is neither positive nor significant. The findings of this study are incongruent with the research carried out by Agustin & Habib (2023) with the title "The Role of Laying Breed Chicken Farming in Improving the Economy in the Community of Pucung Lor Village, Ngantru District, Tulungagung Regency", The study findings indicated that the implementation of innovative practices and the adoption of technology have a

positive impact on enhancing the local economy.

The Influence of Innovation and Technology Adoption (X1) on Poultry Assistance Programs (Z)

The analysis of respondent responses revealed that the average respondent had a low inclination towards innovation and technology adoption. Consequently, this lack of interest did not have a positive and significant impact on the improvement of the community's economy, as indicated by the significance value of 0.417 > from the value of α = 0.05. This suggests that the impact of innovation and technology adoption on enhancing the community's economy is neither positive nor significant. This research does not align with the study titled "Stakeholder Attitudes Towards Innovation, Implications, and Impacts of the Use of Biotechnology in Dairy Farming Business." The findings of the study specifically discuss the effects of innovation and adoption on livestock farming (Amam *et al*., 2018).

Effect of Aid Effectiveness (X2) on Community Economic Improvement (Y)

The analysis of the respondents' responses revealed that they provided a negative response regarding the effectiveness of the assistance, which had no positive impact and was statistically significant in terms of improving the community's economy, as indicated by the significance value of 0.290 > from the value of α = 0.05. This implies that the efficacy of the aid has no impact on the enhancement of the local economy. This is feasible because all government aid is implemented in a manner that prioritizes grassroots efforts, without assessing the actual impact of the assistance on the community.

The study's findings are inconsistent with the submitted research Saragih *et al*. (2020). The study affirms that the efficacy of aid has a direct and substantial impact on the enhancement of the local economy. In a study conducted by Yanti *et al*. (2023), titled "The Effectiveness of the Beef Cattle Assistance Program as a Poverty Alleviation Strategy in Padang Pariaman Regency," it was found that providing assistance effectively increases the economic income of the community. This demonstrates the necessity of government-provided resources for the community, as exemplified by the provision of rocks.

Effect of Effectiveness of Assistance (X2) Poultry Assistance Program (Z)

The analysis of the respondents' responses revealed that they rated the effectiveness of the assistance provided by the cash and gas livestock assistance program as low. This lack of positive and significant impact was confirmed by the significance value of 0.317 > from the value of α = 0.05. The findings of the study do not align with the research presented by Darmawati (2018). This study contradicts the findings of a previous study titled "Analysis of the Effectiveness of the Rural Agribusiness Business Program (PUAP) and its Impact on Farmers' Income Levels (Case Study on the Bina Sejati Farmer Group Association)" which found that the effectiveness variable had a positive and significant impact on income levels (Rizal *et al*., 2022).

The Influence of the Role of Agricultural Extension Workers (X3) on the Improvement of the Community's Economy (Y)

The analysis of respondents' responses revealed that agricultural extension workers played a crucial role in improving the community's economy. The respondents gave a high response to this role, indicating a positive and significant effect of 0.000 < of the value of α = 0.05. Agricultural extension workers have a significant impact on the enhancement of the community's economy. The findings of the study align with the research conducted by Anwarudin *et al.* (2020) and Zainal & Prakoso (2019) which concluded that agricultural extension variables have a direct and significant positive impact on economic advancement through enhanced productivity. This demonstrates a positive correlation between the level of responsibility held by agricultural farmers and their productivity, leading to an overall boost in the local economy.

The Influence of the Role of Agricultural Extension Workers (X3) on the Poultry Assistance Program (Z)

The analysis of the respondents' responses revealed that they highly valued the role of agricultural extension workers, which had a positive and significant impact on the poultry assistance program. The significance value is 0.000 < from the value of α = 0.05. Agricultural extension workers have a direct impact on the success rate of poultry assistance programs. The study's findings align with the research conducted by Elias *et al.* (2016) and Ningsih 2(018), which concluded that agricultural extension workers play a crucial and impactful role in the poultry assistance program, with a direct positive effect. This demonstrates the necessity of agricultural extension workers in supporting the poultry rock program. Specifically, all aid provided to the community will be accompanied by agricultural extension workers who will fulfill their duties and responsibilities.

The Effect of The Poultry Assistance Program (Z) on The Improvement of The Community's Economy (Y)

The analysis of respondents' responses revealed that the poultry assistance program received a low response. Furthermore, it was found that this program did not have a positive and significant impact on the improvement of the community's economy, as indicated by the significance value of 0.391 > from a value of α = 0.05. The findings of the study are incongruent with the research presented by Vaskin *et al.* (2021). This research is inconsistent with another study titled "The Effectiveness of the Beef Cattle Assistance Program as a Strategy for Poverty Alleviation in Padang Pariaman Regency" conducted by Yanti *et al.* (2023).

The Influence of Innovation and Technology Adoption (X1) on Improving The Community's Economy (Y) Through The Poultry Assistance Program (Z)

The analysis of respondents' responses revealed that there was a low level of innovation and technology adoption among the respondents. This lack of adoption had a negative and insignificant impact on the improvement of the community's economy

through the poultry assistance program, as indicated by the significance value of 0.642 > a value of α = 0.05. This implies that the community's economy does not experience any positive impact from poultry assistance programs as a result of innovation and technology adoption.

The findings of the study are inconsistent with the research conducted by Suvedi *et al.* (2017) and Takahashi *et al.* (2020), which indicated that innovation and technology adoption have a direct and substantial impact on the enhancement of the local economy. This demonstrates the considerable challenge in gaining community acceptance for the adoption of technology in poultry assistance in Palopo City, with the aim of enhancing the perception of the poultry farming industry.

The Effect of The Effectiveness of Assistance (X2) on Improving the Community's Economy (Y) Through the Poultry Assistance Program (Z)

The analysis of respondents' responses revealed that the respondents had a low perception of the innovation and effectiveness of the assistance provided. This lack of positive and significant impact on the community's economy was observed in the poultry assistance program, as indicated by the significance value of 0.568 > a value of α = 0.05. Therefore, the efficacy of the aid has no impact on the enhancement of the community's economy via the poultry assistance program. The findings of the study contradict the research presented by (Agustin & Habib, 2023), which asserts that assistance's effectiveness has a direct and substantial impact on the enhancement of the community's economy. This demonstrates that the community in Palopo City does not effectively manage the acquisition of rocks to enhance the reputation of their poultry farming business.

The Influence of The Role of Agricultural Instructors (X3) on Improving The Community's Economy (Y) Through The Poultry Livestock Assistance Program (Z)

The analysis of the respondents' responses revealed that they expressed a low level of satisfaction with the innovation and effectiveness of the assistance provided. This lack of satisfaction had a negative and insignificant impact on the improvement of the community's economy through the poultry assistance program, as indicated by the significance value of 0.428 > a value of α = 0.05. Therefore, the involvement of agricultural extension workers does not have an impact on the enhancement of the community's economy through the poultry assistance program. The findings of this study indicate that the mediating variable diminishes the impact of agricultural extension workers on enhancing the economic conditions of farmers. The findings of the study do not align with the research conducted by Sunartomo (2016) titled "Agricultural Extension Capacity in Efforts to Enhance Agricultural Productivity in East Java."

CONCLUSIONS AND SUGGESTIONS

Based on this research, in general, farmers who are engaged in the poultry farming business in Palopo City have not had a good selection of innovation and technology, the effectiveness of assistance so that the research

results obtained do not have a positive and significant effect on economic improvement. The role of agriculture is expected to be further improved in order to motivate and provide support for the absorption of innovation and technology as well as to make rocks more precise and effective. It is advisable for the government, specifically the Agriculture, Livestock and Plantation Service of Palopo City, to prioritize the poultry assistance program in order to achieve positive economic outcomes. This requires extensive support from agricultural extension workers and consistent provision of technological assistance to livestock businesses.

CONTRIBUTIONS STATEMENTS

RSN: Coming up with ideas, gathering data, doing formal analysis, writing, reviewing, and getting ready for editing; DMN and AZ: coming up with ideas, acting as advisors and supervisors, and reading the manuscript. BH: helped with advice and supervision and reviewed the manuscript.

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