Factors Affecting The Economic Impact of Livestock Assistance in Palopo City, Indonesia

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Abstract. With assistance to the community, both in the form of livestock and infrastructure, it can improve economic levels through additional income from the livestock they manage. With the main function of agricultural extension officers, characteristics of the suitability of assistance received are expected to be a guideline for the Palopo City government. This research was conducted with descriptive quantitative explanatory techniques, and then the data collected using a questionnaire was processed using Excel Microsoft and processed using variant-based statistical analysis, namely SEM PLS. The results of this study with SEM analysis found that the group of breeders who received assistance from the Palopo City government showed the influence of agricultural extension officers on the effectiveness of the sustainability of the economic impact of the results obtained by 16.8%, the influence of aid characteristics on the effectiveness of the sustainability of the economic impact of the results obtained by 5%, the influence of group dynamics on the effectiveness of the sustainability of the economic impact of the results obtained by 84.4%, while the overall influence of variables on the effectiveness of the sustainability of the economic impact of the results obtained by 90.2%.
Keywords: Agricultural Extension Officers, Aid Quality, Environmentally Sound, Superior Seeds

1   Introduction

Development in the livestock sector is an important and strategic activity inseparable from the main function of agricultural extension [1]. Development of the agricultural and livestock sectors, extension activities are a bridge that connects the practices carried out by livestock farmers with livestock knowledge and technology that is always developing [2]. Implementing extension activities will be successful and requires support from the extension officers. An agricultural extension worker must be able to prepare a work plan

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and carry out extension services based on community needs as a target. To achieve this, an extension worker must have competence and be able to perform well [3].

Agricultural extension officers in modernization must be able to act as innovators, facilitators, consultants, and communicators because extension officers are the spearhead of agricultural development in Indonesia [4]. Extension officers influence the success of agriculture because extension officers interact directly with farmers. This will make programs programmed by the government through the Agriculture Office can be directly implemented or delivered to farmers [5]. In addition to delivering development programs, more advanced extension officers encourage farmers to have broad insight and be market-oriented. This is inseparable from agricultural extension officers' main function as motivators for farmers in their target areas [6].

Innovation in the livestock sector to increase production and productivity in Indonesia with limited funds [7]. So that investment activities in farmer households must be managed and well understood [8]. Therefore, extension officers as motivators, educators, dynamic actors, organizers, communicators, and farmers' advisors can appropriately influence their roles [9]. According to [10], agricultural extension officers are expected to receive something new from farmers, adopting their duties. If farmers can apply the livestock production technology taught by extension officers, there will be an increase in the production of the livestock business they run [11][12].

Very serious problems faced by livestock farmers as developed by [13], solutions that can be provided to overcome various problems in implementing extension programs is to provide an understanding of the importance and benefits of planting appropriate grass, registering farms for the existence His livestock, improved skills, access and use market and price information to increase income, inform farmers about their rights and obligations in earning a higher income in the long run.

Table 1. Data on groups receiving livestock assistance

No	Subdistrict	Number of Livestock Groups	Sample
1	Sendana	38	8
2	Mungkajang	21	4
3	Wara	7	1
4	South Wara	10	2
5	East Wara	1	0
6	West Wara	31	6
7	North Wara	5	1
8	Bara	13	3
9	Telluwanua	128	26
	Jumlah	254	51

This study aims to analyze the factors affecting the economic impact of livestock assistance using agricultural extension variables, group dynamics, and the character of assistance the Palopo City government has distributed to farmer groups over the past five years. Livestock rock data distributed by the Palopo City Government for the last five years can be seen in Table 1.

2   Research methods

This study involved as many as 51 livestock farmer groups as respondents who had received assistance from the Palopo City government over the past five years, expected to represent

as much as 20% of the sample, according to the respondents [14]. The data collection technique is a questionnaire conducted in April 2023. The design of this study is descriptive and explanatory with a quantitative approach. Quantitative research can explain the events obtained by researchers that occur at the research site [15][16][17][18]. Researchers also do this to study and analyze the influence that occurs between independent variables on dependent variables. The independent variable consists of agricultural extension officers (X1), aid characteristics (X2), group dynamics (X3), and dependent variables, namely economic impact (Y).

The variance-based Structural Equation Modeling (SEM) technique was used as an imperative statistical analysis, namely the Smart PLS program. SEM measures multiple regression when there are specific problems with variance-based data, small research samples, missing values, and multicollinearity [19][20]. Descriptive statistical analysis in this study used EXCEL and SPSS programs. This research was conducted to explore each of the variables studied and analyze the main function of agricultural extension officers, aid character, and group dynamics on the economic impact of aid farming on the Palopo City Government.

From various previous research literature, research conducted by [21], with the research title The Influence of interpersonal skills, work experience, integrity, and work engagement on the Performance of agricultural extension officers. The research resulted in the following conclusions: (1) interpersonal skills play a significant role in Performance, (2) extension officers' Performance was not significantly influenced by work experience, (3) integrity has a significant effect on the extension officers' Performance, (4) the extension officers performance gets a role from work engagement. While other research was conducted [22], the results showed that the innovation variable significantly influenced yields, the reduced fertilizer variable showed a decrease in agricultural productivity, and the use of pesticides and irrigation practices increased agricultural productivity by 0.08 and 0, respectively. 0005.

Therefore, it is important to study the economic impact on the families of farmer groups who have received livestock assistance using Palopo City Local Government grants. According to research, the case of farmers in Baluchistan, Pakistan, conducted by [23], extension services due to the combined effect of several factors maced that farmers in the study area have poor access. The extension officers and their lack of knowledge on how to deal with date-specific problems such as the Dubash pest, which has affected around 90% of the trees, and a lack of irrigation water for around 90% of farmers, causing a reduction of 65% in production dates.

This research model is to see the hypothesis of each variable. The first hypothesis is the influence of agricultural extension officers (X1) on economic impact (Y), the second hypothesis is the effect of aid characteristics (X2) on economic impact (Y), the third hypothesis is the influence of group dynamics (X3) on economic impact (Y). Further, clarify the research framework can be seen in Figure 1 as follows:
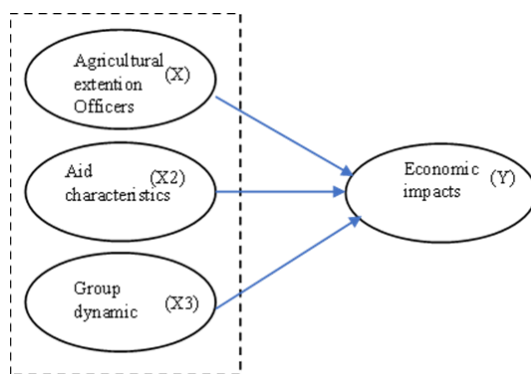
Fig. 1. The research framework

3   Results and discussion Imperatival statistical analysis

The analysis results were obtained using the Smart PLS program using the help of the PLS Algorithm procedure. The resulting output is the Outer Model Test, which assesses a research model's validity and reliability. The result is seen in Figure 2. This model test is used to specify between latent variables and their indicators relationship. Looking at the value of the loading factor in the latent variable with its indicators by test convergent validity, see Table 2.
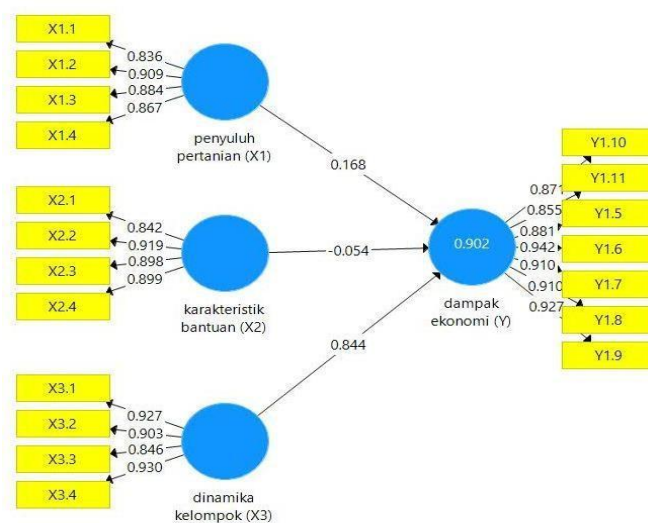
Fig. 2. Outer Model

Table 2. Outer Loading (Convergent Validity)

Indicators	Economic impacts (Y)	Group dynamic (X3)	Aid characteristics (X2)	Agricultural extension (X1)
X1.1 Intensity				0,836
X1.2 Participation				0,909
X1.3 Material suitability				0,884
X1.4 Perceived benefits				0,867
X2.1 Rules			0,842	
X2.2 Interaction			0,919	
X2.3 Cohesiveness			0,898	
X2.4 Conflict resolution			0,899	

X3.1 Conformity to needs		0,927		
X3.2 Sufficiency level		0,903		
X3.3 Quality		0,846		
X3.4 Innovation level		0,930		
Y1.1 Change in income	0,881			
Y1.2 Change in livelihood sources	0,942			
Y1.3 Economic capability	0,910			
Y1.4 Ability to access resources	0,910			
Y1.5 Ability to partner	0,927			
Y1.6 Ability to manage assets	0,871			
Y1.7 Ability to develop business	0,855			

The outer loading value of all indicators of each variable is by the validity value, which is > 0.7, then declared valid. The outer loading value is presented in Table 2. The level of validity of the indicator in the reflective model, which is the size value is Average Variance Extracted (AVE). The AVE value is > 0.5. Table 3 shows the AVE value of each variable indicator of this study is > 0.5, and it can be concluded that all indicators of the SEM model variable analyzed are declared valid. The level of reliability is determined by looking at the Composite Reliability (CR) and Cronbach Alpha (CA) values, which serve to obtain the level of internal reliability of the variable indicator. The reliable value is > 0.6, while the standard value CR is > 0.7. Table 3 shows the results of all variables with a value of CA > 0.6 and a value CR of > 0.7, and it can be concluded that the analysis of the SEM model used has been reliable.

Table 3. R-square value of each variable

Variable	CA	CR	AVE
Economic impacts (Y)	0.961	0.968	0.810
Group dynamic (X3)	0.923	0.946	0.814
Aid characteristics (X2)	0.912	0.938	0.792
The agricultural extension (X1)	0.897	0.928	0.764
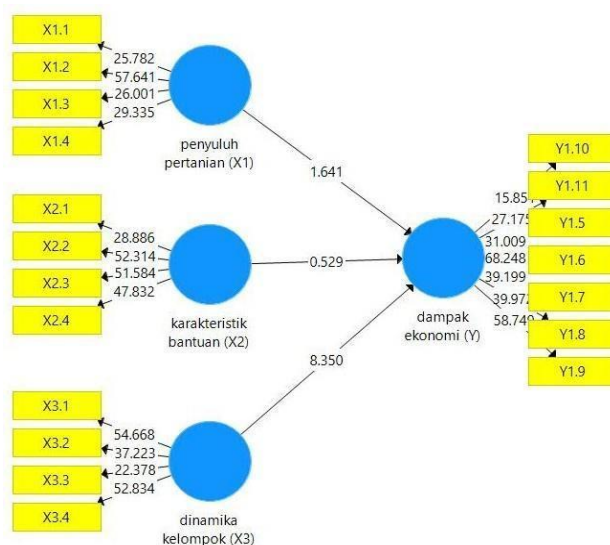
Fig. 3. *Inner Model*

Table 4. T-count values the independent variable on the dependent variable

Variable	T Table	T Count	P Values
Group dynamic (X3) -> Economic impacts (Y)	1.984	8.384	0.000
Aid characteristics (X2) -> Economic impacts (Y)	1.984	0.525	0.600
Agricultural extension officer (X1) -> Economic impacts (Y)	1.984	1.678	0.094

Analysis structural testing is also called the inner model. The meters used in this test in smart PLS are the determinant coefficient R-square and T-count. T-count analysis is used to determine how much influence between variables is used. If $T_{count} > T_{table}$ and P Value < 0.05 (as alpha or cut-off value), then the effect of the resulting variable is significant. The inner test of the SEM model can see the magnitude of the T-count value and P Value which is a measure of the strength of the influence of the independent variable on the dependent variable. Bootstrapping is a rare thing done on Smart PLS to get the inner testing value of the model. The R-Square value of each independent variable is obtained by agricultural extension officers at 1,641, assistance characteristics by 0,529, while group dynamics variables are 8,350, this identifies that the model is strong and moderate. The result is shown in Figure 3. Based on the results of the T-count analysis, as shown in Table 4, the hypothesis test of the independent variable against the dependent variable can be stated as follows:

1.1 The effect of agricultural extension officers (X1) on economic impact (Y)

The analysis of respondents' responses to the Palopo City Government's group of livestock recipients showed a low average for agricultural extension officers. In the results of the SEM analysis in Table 4, the results obtained are T_{count} value = 1.641 < T_{table} value = 1.984 and P Values = 1.101 > α = 0.05. This indicates that agricultural extension officers do not have a positive and significant effect on the economic impact of the ranch rocks of the Palopo City Government. This happens because agricultural extension officers lack the intensity to visit the field. It can also happen because agricultural extension officers lack knowledge about how to raise livestock properly. After all, in Palopo City, agricultural extension officers are agricultural graduates.

The results of the research obtained are not in line with research [24][25][26][27],[27] which produces agricultural extension officers that have a very high effect on the economic impact of agriculture. The SEM analysis also found that participation was the indicator of agricultural extension officers who contributed the highest, namely 90.9%. In comparison, the indicator of agricultural extension officers that provides the lowest contribution is intensity, which is 83.6%.

1.2 Effect of aid characteristics (X2) on economic impact (Y)

The analysis of respondents' responses to the group of farmers receiving ranch rocks from the Palopo City Government showed a low average of assistance characteristics. In the results of the SEM analysis in Table 4, the results obtained are T_{count} value = 0.529 < T_{table} value = 1.984 and P Values = 0.597 > α = 0.05. This indicates that the characteristics of the aid do not have a positive and significant effect on the economic impact of the Palopo City

Government's livestock rocks. This is possible because the assistance provided by the government is sometimes not following the wishes of all members of the breeder group, the livestock seed assistance they receive is not of high quality, so the assistance they receive dies before breeding, usually also because it is not maintained properly or even, they consider that government assistance is only limited to government projects, so the next period will assume they will get back assistance.

The results obtained are not in line with research [28][29][30][31],[31], which produces a very high character of assistance on the economic impact of agriculture. The SEM analysis also found that the indicator of assistance characteristics that contributed the highest, namely 91.9%, was the level of adequacy. At the same time, the indicator of assistance characteristics that provide the lowest contribution is Conformity with needs, which is 84.2%.

1.3   Effect of aid characteristics (X2) on economic impact (Y)

The analysis of respondents' responses to the group of farmers receiving ranch rocks from the Palopo City Government showed a high average of group dynamics. In the results of the SEM analysis in Table 4, the results obtained are T_{count} value = 8,350 > T_{table} value = 1,984 and P Values = 0.000 < α = 0.05. This indicates that group dynamics positively and significantly affect the economic impact on Palopo City Government livestock rocks. This is possible because groups of beneficiaries are formed based on common needs. After they receive assistance, members will usually follow their group's rules, which is possible because of the high level of close supervision from the government, in this case, the Palopo City Government.

The results obtained are in line with research [32][33][34],[34], which results in group dynamics having a very high effect on the economic impact of agriculture. The SEM analysis also found that conflict resolution contributed the highest group dynamics indicator, 90%. At the same time, the group dynamics indicator that provides the lowest contribution is cohesiveness, which is 84.6%.

2   Conclusion

The results of this study with SEM analysis found that the group of farmers who received assistance from the Palopo City government showed the influence of agricultural extension officers on the economic impact of the analysis results obtained agricultural extension officers do not have a positive and significant, the influence of assistance characteristics on the economic impact of the analysis results obtained indicates that the characteristics of the aid do not have a positive and significant, the influence of group dynamics on the economic impact of the analysis results obtained indicates that group dynamics positively and significantly. The research results show that the Palopo City government must increase the influence of economic impact on the families of farmer groups by maximizing the role and presence of agricultural extension officers in the community. It is necessary to pay attention to each type of assistance that will be provided so that it follows their needs and benefits and provides a significant economic impact for livestock farmers.

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