



Analysis of The Determining Factors on The Performance of Extension Officers For The Transfer of Livestock Feed Technology

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Received 12 July 2017; Accepted 30 September 2017;

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ABSTRACT

The study aimed to analyze the determining factors that affected the performance of extension officers for the transfer of livestock feed technology in grass-root livestock enterprises. Variables of the study consist of independent and dependent variables. The independent variables (X) consist of age of livestock owners, current formal education of livestock owners, extension experience of extension officers, amount of livestock owners who gain extension services, competence, motivation and self-management of extension officers. The dependent variable (Y) was the performance of extension officers for the transfer of livestock feed technology to livestock owners. Multiple linear regression model was used in this study to estimate the determining factors that affected the performance of extension officers for the transfer of livestock feed technology to livestock owners. Results of the study revealed that the independent variables that consist of age of livestock owners, current formal education of livestock owners, extension experience of extension officers, amount of livestock owners who gain extension services competence, motivation and self-management of extension officers showed simultaneously significant effect ($P < 0.05$) on their performance for the transfer of livestock feed technology to livestock owners. The value of coefficient of determination (R^2) was 0.74. It was concluded that the independent variables gave simultaneously significant effect amounted to 74.0 % on the performance of extension officers for the transfer of livestock feed technology to livestock owners.

KEY WORDS

the performance of extension officers, transfer of technology, livestock feed, beef cattle

INTRODUCTION

Paradigm farm development was the realization of a healthy society and productive and creative through a tough farm based on local resources. To achieve this paradigm performed a variety of missions, namely: (1) provide food from cattle, (2) empower human resource farms, (3) increase the income of farmers, (4) create jobs livestock, and (5) to preserve and utilize natural resources, which as a whole in line with agricultural development programs that build food security and developing the agribusiness sector[1]. As the population still continue to grow, a large proportion of the high rates of urbanization and the rise of people's income and the awareness for the need of healthy nutrient, the necessity to boost sustainable livestock enterprises is considered as a pivotal thing. Despite the domestic livestock enterprises gain significant achievement including grass-root livestock enterprises, there are current and future problems concerning domestic production of livestock, particularly beef cattle, that include: (1) supply of meat production is not compatible to the raising needs of people, (2) efforts to raise and to gain reasonable distribution of income among livestock owners, (3) efforts to increase productivity, efficiency and competitive ability for ruminant products, in this case beef cattle, and (4) expansion of labors and enterprises to fulfill domestic needs especially beef cattle considering to the fact that the domestic demand for beef cattle still depend upon import products. Recently, the demand for beef has increased dramatically. This has happened because there has been an increase in both the population and in the

per capita income in Indonesia. The existing beef supply is not enough to fulfill the demand for beef. Therefore, livestock development is directed at improving the quantity and quality of beef production, increasing revenue, expanding employment and providing opportunities for rural communities. Ranch farming requires hard work, perseverance, and the strong will of farmers to reach their goals [2, 3]

The government still depends on import-oriented livestock products to fulfill domestic needs, and it is an ironic fact as this nation of more than 200 million populations still continue depends on import livestock products to fulfill the domestic needs [4]. That agriculture sector including animal husbandry sector is in fact can be utilized to formulate and implement the right policy strategies for economic recovery as the basis for the development of real sector. This is concerning to the evidence that animal husbandry sector has high tenacity as other economic sectors decline. Animal husbandry sector is intensive-labor with ownership of resources and low skill as well as inappropriate of support of social networks in the modern economics systems [5]

One of the efforts to develop better social and economic networks is the strengthening of institution as this aspect is not maximally boosted leading to adverse impact to the low productivity and income among livestock owners including the performance of extension officers. Empirical evidence shows the unsuitable performance of extension officers in fulfilling the needs of livestock owners, particularly for the transfer of livestock feed technology [6]. The achievement of extension services to accelerate the transfer of livestock feed technology is not maximally as hoped. Extension services are only conducted in the form of formal services (projects) according to the theme of a certain project. Concerning to this, it is necessary to increase the transfer of livestock feed technology through the increase of performance of extension officers by determining factors that affect the performance of extension officers for the transfer of livestock feed technology to livestock owners. Cattle ranching in an area can make optimal use of local resources and by-products such as rice straw from rice plants and the joint production of rice bran that can be utilized by cattle as cattle feed. Feed is a major component for the success of the cattle business [7]

Methods of The Study:

The study was conducted in Bulukumba Regency, South Sulawesi Province. This study was survey study and it was conducted to analyze the determining factors that affected the performance of extension officers for the transfer of livestock feed technology in grass-root livestock enterprises.

Variables of the study consist of independent and dependent variables. The independent variables (X) consist of age of livestock owners, current formal education of livestock owners, extension experience of extension officers, amount of livestock owners who gain extension services, competence, motivation and self-management of extension officers. The dependent variable (Y) was the performance of extension officers for the transfer of livestock feed technology to livestock owners. Description of the operational definitions for each independent variable of the research model is as follows:

- a. Age is the age of livestock owners dated since their births until to be the respondents in this study.
- b. Current formal education is the level of current formal education of respondents as the livestock owners.
- c. Extension experience is the experience of extension officers in conducting extension services to livestock owners.
- d. Amount of livestock owners under extension services is the amount of livestock owners under the extension service given by extension officers within their working areas.
- e. Competence is the ability of extension officers to demonstrate knowledge and technical skills, the aptitude to plan extension programs, and the ability to show leadership.
- f. Motivation is the awareness of extension officers to deliver higher level of performance, efforts to raise remuneration and promotion and gaining an approved praise among livestock owners.
- g. Self-management is the ability of extension officers to address various problems concerning to livestock issues, conducting interactions with other individuals and having economic self-sufficiency.

Multiple linear regression model was used to analyze the determining factors that affected the performance of extension officers for the transfer of livestock feed technology. The independent variables were statistically analyzed in the research model to determine their simultaneous effect on the dependent variable using F-test at 95% confidence level.

RESULTS AND DISCUSSION

The determining factors that affected the performance of extension officers for the transfer of livestock feed technology were analyzed based on results of the survey study. The measured independent variables (X) consist of age of livestock owners, amount of livestock owners who gain extension services, current formal education of livestock owners, extension experience, competence, motivation and self-management of extension officers. The dependent variable (Y) was the performance of extension officers for the transfer of livestock feed technology.

Results of the analysis of multiple regression in Table 1 indicated that the independent variables that consist of age of livestock owners, amount of livestock owners who gain extension services, current formal education of livestock owners, extension experience, competence, motivation and self-management of extension officers showed simultaneously significant effect ($P < 0.05$) on their performance for the transfer of livestock feed technology. The value of coefficient of determination (R^2) was 0.74. It means that the independent variables give 74.0 % simultaneously contribution on the performance of extension officers for the transfer of livestock feed technology.

Table 1: Results of the statistical analysis of the determining factors on the performance of extension officers for the transfer of livestock feed technology.

Independent Variables	Regression Coefficient	Standard Error	t-value	Significant
Constant	-1.96	2.034	-0.966	0.337
Age of livestock owners	0.000	0.030	0.012	0.991
Amount of livestock owners who gain extension services	0.005	0.002	0.042	0.967
Current formal education of livestock owners	0.436	0.206	2.113	0.037
Extension experience	-0.022	0.020	-1.065	0.290
Competence of extension officers	0.134	0.049	2.749	0.007
Motivation of extension officers	0.386	0.099	3.884	0.000
Self-management of extension officers	0.262	0.076	3.426	0.001
Coefficient of determination (R^2)	0.74			

Current formal education of livestock owners:

In Table 1, the regression coefficient value for current formal education of livestock owners was 0.436 and it showed significant effect ($P < 0.05$) on the performance of extension officers for the transfer of livestock feed technology to livestock owners. It means that current formal education of livestock owners gives significant effect on the performance for the transfer of livestock feed technology. This is coincide with the study of [8] that higher education of livestock owners give better responsiveness to conduct creativity in increasing the transfer of transfer of technology to livestock owners, whereas lower level of education of livestock owners could be the constraining factor in improving the performance of extension officers for the transfer of livestock feed technology.

Competence of extension officers:

The value of regression coefficient for the competence of animal husbandry extension officers was 0.134 and it had significant effect ($P < 0.05$) on their performance for the transfer of livestock feed technology. It means that the increase of competence of animal husbandry extension officers could increase the performance of animal husbandry extension officers the transfer of livestock feed technology. Competence dimension of animal husbandry extension officers in this study consist of the ability to plan programs of livestock services that include the ability to address various problems of livestock owner, the knowledge and skills to conduct extension services and to evaluate results of given extension services. Theoretically, results of the analysis of competence in this study is compatible with the study of [9] who state that competence is defined in terms of underlying characteristics of people that are causally related to effective or superior performance in a job, generalizing across situations, and enduring for a reasonably long period of time. Results of this study could be used as the recommendation for the involved instansi in formulating and implementing appropriate policies to improve the performance of animal husbandry extension officers by increasing their competence through training programs that related with livestock feed technology.

Motivation of extension officers:

The value of regression coefficient for the motivation variable of extension officers was 0.386. It means that higher motivation of extension officers tend to increase their performance for the transfer of livestock feed technology in which results of statistical test showed that motivation of extension officers showed significant effect ($P < 0.05$) on the performance of extension officers for the transfer of livestock feed technology. Theoretically, results of the analysis of motivation in this study is in line with the study of [10] in which the determining factors that affect the performance of individual are expressed in the formula $P = M \times K \times T$, where P is performance, M is motivation, K is leadership and T is the right job. This view is based on the concept of right people on the right job and the right time can increase remuneration and promotion that motivate individuals to increase their performance by improving their job productivity.

Self-management of extension officers:

Self-management variable of extension officers gave significant effect ($P < 0.05$) on their performance for the transfer of livestock feed technology with the regression coefficient value was 0.262. It means that higher self management of extension officers lead to performance of extension officers for the transfer of livestock feed

technology. The dimensions of self-management of animal husbandry extension officers that relate with their performance include: (1) the ability to plan livestock service programs, (2) the ability to conduct interactions with other individuals, and the ability to address various problems and economic self-sufficiency. Theoretically, results of the analysis of self-management variable in this study are compatible with the study of [11] who state self-management includes the ability to create initiative, the capability to address constraints/problems, self-confidence without assistance of other individuals.

Based on results of the analysis of self-management variable, the self-management of extension officers shows the ability of extension officers to address various problems of livestock owners based on their own knowledge and skills, and the ability to perform interactions with livestock owners, public figures, the government and non government organizations without depend upon the reactions of other individuals in conducting programs of extension services in increasing the transfer of livestock feed technology.

Besides the independent variables as the observed variables in this study that consist of age of livestock owners, current formal education of livestock owners, extension experience of extension officers, competence, motivation and self-management of extension officers, there were also other unobserved variables or other unexplained factors that partially affected the dependent variable, in this case the performance of extension officers for the transfer of livestock feed technology to livestock owners, although the observed variables in this study showed simultaneously significant effect on the dependent variable. It means the performance of extension officers for the transfer of livestock feed technology could be explained in detail if the observed variables in this study and other unobserved variables are combined in the formulation of research model.

Conclusion And Suggestions:

Based on results and discussion as stated in this study, it was concluded that age of livestock owners, current education of livestock owners, extension experience, amount of livestock owners who gain extension services, competence, motivation and self-management of extension officers gave simultaneously significant effect ($P < 0.05$) on their performance for the transfer of livestock feed technology. The value of coefficient of determination (R^2) was 0.74. It means that the independent variables show simultaneously significant contribution amounted to 74.0 % on their performance for the transfer of livestock feed technology.

It is suggested to formulate and implement the right policy strategies for grass-root livestock enterprises through improving the performance of extension officers for the transfer of livestock feed technology, to formulate the right development of animal husbandry sector by more focusing the availability of capital for the extension services of extension officers and strengthening of various infrastructure and support services to increase positive impact on the performance of extension officers to improve the transfer of livestock feed technology to improve productivity and income to raise standard of living of livestock owners.

ACKNOWLEDGMENT

The authors express sincere gratitude to the Rector of Hasanuddin University and the Institute for Public Service and Policy Research (IPSPR) Hasanuddin University for funding this study through the Research Program Project Grant of Hasanuddin University within the Fiscal Year 2017.

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