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Relationship Between Farmer's Characteristics with the Motivation of Goat Milking in the Girikerto Village Turi District Sleman Regency

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ABSTRACT

This research aimed to determine the relationship between farmer characteristics including age, education level, farming experience, side income, number of dependent family member, and farmer's business scale with the motivation of goat milking in Girikerto Village, Turi District, Sleman Regency. The type of this research was quantitative explanatory, that was the type of research explaining the nature of the relationship and examining the relationship between farmer characteristics with milking motivation. The research method used a household survey of farmers with the help of questionnaires. The number of respondent's sample used was 56 goat farmers with provisions using the Slovin formula. Sampling technique used Simple Random Sampling. Data were analyzed by Product Moment correlation. The results showed that the variables of age, farming experience, and business scale had a significant relationship with the motivation of goat milking, while the variables of education, side job and a number of dependents had no significant relationship with the motivation of milking. Farmer's motivation to milk goats could be increased in line with increasing the age and experience of farmers. The motivation of milking goats could also be increased by increasing the number of livestock ownership, especially the ownership of lactating goats.

Keywords: Farmer characteristic, Goat farm, Milking motivation

Introduction

Livestock-based agribusiness is one area of business that is able to provide increased relatively high income of farmers and to create global competitiveness of livestock products. Livestock is a cultivation business that has been hereditary done in society, especially in rural areas. Farming on the southern slopes of Merapi volcano is also one of the sustainable livelihood strategies of farmers post-eruptive of Merapi 2010 (Andarwati *et al*., 2017). One of the common livestock kept on the southern slopes of Merapi is dairy cows and dairy goats. Zulfanita (2011) states that the goat is one of the small ruminansia species that is popular among Indonesian farmers. Goats in Indonesia are commonly kept as life savings, livestock and manure sources. Goat is an important component in people farming bussines because goat farming can help the people's economic subsistence with the utilization of natural resources available in the surrounding environment. Goat animals in addition to meat-producing purposes, some are also kept with the goal as a dairy goat. Dairy goats are developed in various areas among others in Kaligesing and Turi.

Girikerto Village is one of the villages in Turi District of Sleman Regency which has the largest livestock population at the district level, which is 2,830 of the total population of 3,412 head or about 82.94%. Girikerto village also contributes 100% goat milk production in Turi district which is 70,241 liters per year (Central Bureau of Statistics of Sleman Regency, 2017). Milk produced by goat farmers is sold to farmer group to further processed into various kinds of products such as milk powder and milk candy. The farmer group works with investors in milk processing and marketing. The marketing of goat dairy products has even been sold nationally.

Goat farming in Girikerto village is mostly small-scale farming. The low ownership of livestock according to Makatita (2013) might be influenced by several factors: technical factors (limited superior seeds, productive female slaughter, low quality of feed, no mating) and socioeconomic factors (business scale, farmer age, education level, farming experience, the number of dependents of the family, and the level

of regeneration farmers) also contributed in increasing the number of livestock. In addition to the scale of farmer business are still low, and still, there are farmers who have not conducted milking goats are possible because of lack of knowledge and motivation of farmers in milking.

Farmer characteristics are one factor that is very important in the success of the farming business, regarding motivation. Age, education level, farming experience, side income, number of family dependents and business scale are some aspects of the characteristics of an observable individual. The age of a farmer will affect the productivity of work in conducting business activities. Business activity will grow more rapidly if the farmer can adopt an innovation, which is driven by the ability to think creatively that can be obtained through learning and education. Continuous learning activities will also enhance a person's experience and help him not to make mistakes in running a business. The number of family dependent that must be fulfilled is also a factor that can encourage a person to develop his business. The existence of income from side business will help increase the capital to expand the scale of the main business. Based on the background, the researcher is interested in doing research to explore whether there is a characteristic relationship of a farmer with the motivation of goat milking in Girikerto Village, Turi District, Sleman Regency.

This research aimed to determine the relationship between farmer's characteristics including age, education, farming experience, side income, number of family dependent and business scale with goat milking motivation in Girikerto Village, Turi District, Sleman Regency.

The results of this research were expected to be used as consideration for the farmers in Girikerto village in improving the motivation of milking goats kept, the thought for the government or related institutions in determining the policy planning for the development of the people goat farming business, as well as a source of information and comparative study materials for researchers who conducted similar research.

Materials and Methods

The research was conducted in Girikerto Village, Turi District, Sleman Regency from April to October 2017. The research location was chosen by purposive sampling because Girikerto was the highest goat population in Turi district. The majority of goats farmed by farmers were Ettawa Crossbreed (EC).

Material

The materials used in this research were 56 goat farmers in Girikerto Village, Turi District, Sleman Regency. Determination of the number of samples was used Slovin formula as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = Number of samples
N = Number of population
e = Margin of Error

To determine the number of samples obtained so that it could be used the following formula:

$$n = \frac{140}{1 + 140(10\%)^2}$$
$$n = \frac{140}{1 + 1.4}$$
$$n = 53 \text{ orang}$$

Based on the above calculation, it could be concluded that the minimum sample size in this study was as many as 53 respondents. The total number of respondents in this study were 56 goat farmers. Types of data used in the study include qualitative and quantitative data. Qualitative data were data in the form of words, sentences, and responses. Qualitative data consisted of statements about the level of education owned by farmers, the motivation of farmers in the activities of milking, that was whether the farmers had been milking the goats or not yet as well as the aspects that motivated them, and the circumstances of the location in Girikerto Village, Turi District, Sleman Regency. Quantitative data were data in the form of numbers, including age, farming experience, the number of dependents owned by farmers, the number of goats kept and the circumstances of the location in Girikerto Village, Turi District, Sleman Regency. Sources of data used in this study included primary data and secondary data. Primary data were data obtained directly from respondents that sourced from interviews with respondents. Secondary data were data obtained from the literature and related institutions such as the Sleman Central Bureau of *Statistics*.

Method

Sampling technique by Simple Random Sampling which was part of Probability Sampling. The sampling technique was done randomly. Methods of data collection by survey method included observation activities, interviews, data analysis, and literature study. The statistical analysis used to find out the relationship between age, education, farming experience, number of dependents and business scale with goat milking motivation in Girikerto Village, Turi District, Sleman Regency was Pearson's Product Moment correlation with the following formula:

$$r_{xy} = \frac{n\sum x_i y_i - (\sum x_i)(\sum y_i)}{\sqrt{\{n\sum x_i^2 - (\sum x_i)^2\}}\sqrt{\{n\sum y_i^2 - (\sum y_i)^2\}}}$$

Description:
r = Pearson correlative coefficient
N = Number of samples.

Result and Discussion

The result of research that had been done by exploring data from 56 goat farmers in Girikerto Village could be observed in several analysis results including farmer characteristic and farmer motivation in milking goats kept and the relationship between farmer characteristics with milking motivation.

Farmer characteristics

The characteristic factor of farmers analyzed in this study included: age, education, farming experience, number of family dependents and business scale. Another character also observed was the presence or absence of side businesses that provided additional income apart from goat farming activities. Characteristics were the properties or traits possessed by someone displayed through the mindset, attitude patterns and action patterns on the environment. The properties or traits possessed included several factors or elements attached to someone can be regarded as a characteristic. The characteristic factor of farmers was characteristic owned by a farmer could be observed in Table 1.

Age of respondent. The age of respondents by majority according to the Central Bureau of Statistics (2017), included in the productive age category that was 83.93%. Someone who is included in the productive age, in general, has the ability to work and the ability to think well (Manase *et al*., 2011). Increasing age of a person would increase also the ability to consider and to reason as well as to think creatively so that in solving a problem that required reasoning would increase as well (Rogers, 2003). Distribution of aged farmers that dominated by productive age was very beneficial for the implementation of goat farming in Girikerto Village due to goat farming required a lot of strong physical power from farmers, ranging from search and preparation of feed, management of livestock and cage cleanliness, livestock health maintenance and milking activities. Productive age of farmers was expected to support maximum goat dairy farming because farmers tended to be active, move faster, and easy to receive direction.

The higher the age of someone, the less dependent on others or increasingly independent (Chamdi, 2003). Soekartawi (2003) explained that young farmers were usually not fanatical to tradition and easier to grant the insights that could change the way of thinking, how to work and how to live.

The education level of farmers. The level of formal education of farmers who had been educated above primary education (9 years) only reached 37.5% (21 respondents), it was less support the implementation of goat farming in Girikerto Village to more quickly developing and developed. Education by Mardikanto (2009) was a reciprocal process of every human person in adjusting itself to nature, friends and the universe. Formal education was the level of education from the lowest to the highest which was usually held by organized and programmed institutions. Soekartawi (1996) explained further that someone who had the knowledge and skills could utilize the potential inside and outside him better because the higher education level of farmers tended to influence and improve the way of thinking and the level of acceptance of innovation and new technology.

Farming experience. The average farming experience of goat farmer in Girikerto Village was 50% more than 35 years. Farmers who had less than 18 years of farming experience were cumulatively a much, but if further examined from the data distribution of respondent characteristics, there were only 4 beginner farmer with 1-2 years of farming experience. Length of business was an experience that could be taken advantage of so that it could help farmers in his business because of the longer his business, the more experience gained by farmers. The farming experience was a very important role in determining the success of farmers in improving the development of the farming business and at the same time increasing the income of farmers.

Table 1. Characteristics of goat farmers in Girikerto Village

Characteristics variable	Average value	Percentage (%)
Age:	52.59±11.48	
a. < 15 years	0	0.00
b. 15 – 64 years	47	83.93
c. > 64 years	9	16.07
Education:	8.87±3.38	
a. Elementary School	23	41.07
b. Junior High School	12	21.43
c. Senior High School	16	28.57
d. 3-Year Diploma	3	5.36
e. Bachelor Degree	2	3.57
Farming experience:	20.18±13.16	
a. 1 – 17 years	28	50
b. 18 – 35 years	18	32.14
c. 36 – 50 years	10	17.86
The number of dependents family:	3.68±1.24	-
Side job:		
a. Have	54	96.43
b. Do not have	2	3.57

Source: Primary data processed (2018).

The farming experience was a good teacher, with sufficient farming experience, farmers would be more careful in acting and could improve the shortage of the past.

Farmers who had a longer farming would be easier to implement the recommendation of extension instructor advice than beginner farmers, due to more experience so that they could make comparisons in making decisions. Experienced farmers would be easier to apply innovation than beginner farmers. Length of farming for each person was different, therefore the amount of experience could be taken into consideration in order not to make the same mistake so farmer could do good things for the next time, this was in line with the opinion of Soekartawi (2005) who stated that more experienced farmers would more quickly absorb technological innovation compared with the farmers who have not or lack experience. Gunawan *et al*. (2017) stated that the experience and innovation adoption of farmers on a farming technology could be enhanced through extension, as had been done in the practice of using cocoa leaves as one of the nutrient feed ingredients for goats.

Based on the data of the distribution of the respondent's farming experience in Table 1. It was possible that dairy goat farmers in Girikerto Village would be easier to implement innovations and more carefully in decision making related to the management of their farms. The longer farmer experience was expected to be more efficient in running the business so that it could increase their income; this was in accordance with the opinion of Alam *et al*. (2013) who stated that farmers who have long farmed would be more skilled and tended to produce something better than inexperienced farmers.

A number of family dependents. The number of family members who became farmer's dependent in Girikerto Village was 3.68 ± 1.24 people. The number of dependents of family members would affect the farmers in business development, because of the number of the family dependents, the more burden of life that must be borne by a farmer who could encourage him to do business development (Sumbayak, 2006). The number of family members would influence the decision of the farmer in the farming business. The number of the family dependents was one of the economic factors that need to be considered in determining the income to meet their needs.

Side business. Side business or job was an activity or other business outside of the main business. Someone's goal in side business was to earn extra income or earnings to meet daily needs. The side income earned could be directly used to support the needs (Laratmase *et al*., 2014). A total of 54 farmers (96.43%) had businesses outside dairy goat farming as an additional source of income. The condition also reflects that dairy farming, in general, was done in integrated farming with agricultural activities, both snake fruit plantation and other food crop agriculture.

The scale of goat farming business. The business scale was the quantity of business which linearly determines the level of yield obtained by farmers from the physical production to be achieved from the business. The scale of business becomes important to be accounted for in the livestock business activities in order to achieve what was termed an economically advantageous scale of business. Paturochman (2005) stated that the scale of the goat farming business greatly affects the income level, so the higher the scale of ownership business, the greater the income level of farmers. The scale of business in this study was defined as the number of livestock ownership cultivated by the farmers today.

Based on the Decree of the Minister of Agriculture no. 751/kpts/Um/10/1982 on Guidance and Business Development for Increasing Domestic Production, Scale of goat farming business in Girikerto Village from research result showed that 100% farmers included in the scale of business people with the average of livestock ownership 11.36±8.14. Business of farming people, characterized by the ownership of goat as many as ≤300 heads (Local Government of Tanah Bumbu Regency, 2006).

Milking motivation

Goat farmers who did milking goats were 33 farmers (58.93%), while 23 farmers (41.07%) did not milking. Farmers who did milking was based on the economic motivation was to obtain income and to expect a regular income that could be used to meet household needs. The economic motivation of goat farmers in Girikerto Village was in line with the results research of Haryadi *et al*. (2016) who stated that most of the goat farmers on the mount slopes of Merapi had high motivation to maintain their livestock business that one of them was caused by the existence of economic motivation. The results were also in accordance with the opinion of Munandar (2006) who stated that motivation was defined as a process whereby the needs encouraged someone to perform a series of activities that lead to the achievement of a particular goal. Maslow (1993) stated that the actions or behavior of an organism at a certain moment was usually determined by its most urgent needs, in which case the farmer was motivated to milk to meet the demand of life needs. Highly motivated farmers usually had greater participation in livestock and group activities to increase their business (Swasta and Handoko, 2000).

Some farmers who did not milk their goats were caused by several reasons, among others, there was no goat that could be milked because it was still pregnant or the other reason, it was still used for breastfeeding goat kid. Some farmers who did not milk their goats were also due to their business priorities to produce good goat kid with high selling value. In addition to the economic value of milk production, the sale of goat kid and adult livestock, some farmers maintained goats for

social and environmental purposes. The results of this study were in line with the opinion of Kusumastuti (2010), who explained that the goat farm of Ettawa Crossbreed managed in a group in Turi District had economic, environmental and social values.

The relationship between farmer characteristics with milking motivation and business scale

The relationship between farmer characteristics with milking motivation and scale of goat farming in Girkerto Village, Turi District, Sleman Regency could be observed in Table 2. Variable of age, farming experience, and business scale had a significant relationship with goat milking motivation, while variable of education, side job and the number of dependents did not had a significant relationship with the milking motivation. Age and farming experience caused the farmers to have comprehensive knowledge and sufficient experience so that they could decide to do an activity (milking the goat) in a goat farming business that they did. The results were in accordance with Soekartawi's opinion (2003); Manase *et al*. (2011); Rogers (2003); Chamdi (2003).

Sufficient business experience made the farmer careful in making business decisions, having the knowledge and experience and willingness to adopt new technologies in the farm, including in the calculation of the number of livestock that might be kept and provided sufficient results from his livestock business, including from the sale of the milk produced. Farmers who knew and felt the benefit from goat milk sales revenue would tend to increase the number of livestock kept in accordance with its ability. The results were in line with Soekartawi's (2005) and Alam *et al*. (2013).

The scale of the business had a significant relationship with the milking motivation because if the farmer had an increasing number of livestock, most likely would have lactating goat ready to be also milked more and more. Farmers tend to do milking if they had more than one lactation goat mother, related to job effectiveness and availability of milk for goat kid owned. The results of the research were in line with research of Rahmah (2013) who stated that the more livestock kept by farmers, the farmers would be more prosperous because the number of livestock kept could affect the income received. The results were also in accordance with the opinion of Paturochman (2005).

Table 2. The relationship between farmer characteristics with milking motivation and business scale

Characteristics variable		Age	Education	Farming experience	Side job	The number of dependents family	Business scale	Milking motivation
Age	Pearson Correlation	1	-.430**	.267*	.002	.240	-.241	**-.269***
	Sig. (2-tailed)		0.001	0.047	.991	.075	.073	.045
	N	56	56	56	56	56	56	56
Education	Pearson Correlation	-.430**	1	.379**	.164	.031	-.214	-.042
	Sig. (2-tailed)	.001		0.004	.227	.819	.113	.760
	N	56	56	56	56	56	56	56
Farming experience	Pearson Correlation	.267*	-.379**	1	.113	.029	-.283*	**-.273***
	Sig. (2-tailed)	.047	.004		0.406	.833	.035	.042
	N	56	56	56	56	56	56	56
Side job	Pearson Correlation	.002	.164	.113	1	.028	.068	.035
	Sig. (2-tailed)	.991	.227	.406		.838	.618	.798
	N	56	56	56	56	56	56	56
The number of dependents family	Pearson Correlation	-.240	-.031	-.029	.028	1	-.064	.255
	Sig. (2-tailed)	.075	0.819	.833	.838		.638	.058
	N	56	56	56	56	56	56	56
Business scale	Pearson Correlation	-.241	.214	.283*	.068	-.064	1	**.388****
	Sig. (2-tailed)	.073	.113	0.035	.618	.638		.003
	N	56	56	56	56	56	56	56
Milking motivation	Pearson Correlation	-.269*	-.042	-.273*	.035	.255	.388**	1
	Sig. (2-tailed)	.045	.760	.042	.798	.058	.003	
	N	56	56	56	56	56	56	56

**. The correlation was significant at the 0.01 level (2-tailed).
*. Correlation was significant at the 0.05 level (2-tailed).

Conclusions

The result of research showed that farmer characteristic variables include age, farming experience, and business scale have a significant relationship with goat milking motivation, while variable of education, side job and a number of dependents had no significant relationship with the milking motivation. The technical implication that can be suggested from this research is that the motivation of the farmer to milk the goats kept can be improved in line with the increasing of farmer's age and farming experience. The motivation of milking goats can also be increased by increasing the number of livestock ownership, especially the ownership of lactating goat. Still open the breadth of market opportunities for goat milk products also need to continue to be socialized at the level of farmers.

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