Factors Affecting The Income of PE Kaligesing Goat Farming in Kaligesing District Purworejo Regency

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Abstract The aim of this study was to analyze the income of goat farming and the factors affecting the income of PE Kaligesing goat farming. These factors are the cost of forage, the number of goat sold, experience in farming and the number of goat owned. This research was conducted in Kaligesing District, Purworejo Regency. Research using survey method. Respondents are PE Kaligesing goat farmer's. Collecting data using interview techniques. Data analysis used quantitative descriptive analysis. Quantitative analysis using multiple linear regression analysis. The results showed that the characteristics of the respondents were that 80% of the respondents were of productive age, 73.33% of the respondents' education was secondary education and the average owner of 14 goats. An average production cost of IDR 10,672,862/year/14 heads, an average revenue of IDR 27,322,600/year/14 heads and an average income of IDR 16,649,738/year/14 heads. The results of multiple linear regression analysis showed that the cost of forage and the number of goat sold had a very significant effect ($p<0.01$) on the income of Kaligesing PE goat farming, while the experience in farming and the number of goat owned had no effect ($p>0.05$) on the income of PE Kaligesing goat farming.

1. Introduction

Goat livestock is one of the livestock commodities that has an important role in making a direct contribution to society. Goats are livestock that have a good ability to live with various climatic conditions and can live in land with various topography, both lowlands and highlands [1]. Goats have long been known by the community as a source of additional income in farming, especially in rural areas. One of the goat breeds kept by the community is the Peranakan Etawa (PE) goat. The PE goat is the result of a cross between a local Indonesian goat (Kambing Kacang) and an Etawa goat. Etawa goats were imported from India by the Dutch government around the 1930s. The Etawa goat is known as a fairly good milk-producing livestock. The results of these crosses resulted in PE goats which have the potential to produce milk and produce meat. The advantages of PE goats include good adaptation to the environment, including dual-purpose type goats and having a reproduction index of 1.65 lamb per birth per year [2].

PE Kaligesing Goat is an icon of Purworejo Regency. The Government of Purworejo Regency carried out a development program for the PE Kaligesing goat by creating a source of rural seeds for PE Kalgesing goats outside the Kaligesing District which has the same topography as the Kaligesing District. It is hoped that PE Kaligesing goats can be maintained and preserved. The population of goats in Kaligesing District, Purworejo Regency from 2020-2022 is said to be 53,720 heads, 53,720 heads and 45,537 heads respectively. The goat livestock population will decrease in 2022. The development of the goat farming business is associated with an increase in farmer income. Increased income will provide motivation to do better. The success and failure of a livestock business is influenced by the ability of the livestock to produce, the price of production inputs and the output produced. This situation is closely related to the ability of breeders to manage their business and the maximum level of income achieved. Farmers with a large number of livestock have the opportunity to earn higher incomes. A larger number of livestock owners will generally be more efficient in terms of labor and production costs. Goats are small ruminants, therefore their productivity depends on the availability of forage. An integrated system is one way to overcome the availability of forage, namely utilizing naturally growing vegetation or plant waste as a source of forage [3].

Business analysis is generally used to evaluate a business that is running profitably or not. Increasing production, reducing production costs and income are important aspects that need attention in the development of livestock business. Production costs incurred to produce a certain product, as well as business revenue is the value or result of selling products produced from a business [4][5]. Based on this, the aim of this study was to analyze the income of goat farming and the factors affecting the income of PE Kaligesing goat farming.

2. Material and Methods

The research was conducted in Kaligesing District, Purworejo Regency. The research location was determined by purposive sampling. Consideration of taking a location in Kaligesing District because there is the largest population of PE goats in Purworejo Regency. Purworejo Regency Central Bureau of Statistics for 2019 showed that the goat population in Kaligesing District is 49,780 heads [6]. The method of determining respondents was carried out by purposive sampling, namely as many as 90 breeders of PE Kaligesing goats. The research method uses a quantitative descriptive method. Data collection techniques with interviews and observations. The data needed in this study are primary data and secondary data. Primary data was obtained by conducting interviews with respondents based on the questionnaire. Secondary data is supporting data for primary data obtained from related agencies. Data analysis were used income analysis and multiple linear regression analysis. Multiple linear regression analysis was used to analyze the factors that affect income. The income formula is as follows:

Income is calculated by the formula [7]:

$$Pd = TR - TC$$

Description : Pd = income
TR = total revenue (total revenue)
TC = total cost (total cost)

The multiple linear regression equation model is as follows:

$$Y = a + b1X1 + b2X2 + b3X3 + b4X4 + e$$

Description: Y = income (IDR/year)
a = constant
b1-b4 = regression coefficient
X1 = forage feed costs (IDR/year)
X2 = number of livestock sold (heads/year)
X3 = farming experience (years)
X4 = total livestock ownership (heads/year)

3. Result and Discussion

Respondent Identity

The results showed that the respondents in this study had an age range of 26-79 years. 80% of respondents are included in the productive age. The productive age according to the Indonesian Central Bureau of Statistics [8] is 15-64 years old. These results differ from Hasan's research [9] which states that 100% of respondents are in the productive age range. The age of a breeder can affect their work productivity in livestock business activities. Age is also related to the farmer's mindset in determining the management system that will be applied in livestock business activities. Productive age breeders can affect their ability and work performance both physically and mentally [10].

Most of the respondents' formal education was secondary school, which was 73.33%. This shows that most of the respondents' formal education is included in secondary education. The higher a person's education level, the higher the absorption of technology and the faster they are able to accept innovations that come from outside. The level of education affects the ability of breeders to apply technology [11]. If education is low, the thinking power is narrow and the ability to make sense of a new innovation will be limited, so that the insight to progress is lower compared to breeders with higher education. According to Mulyadi in Setiani et al, stated that education is a means of increasing intelligence and skills so that a higher level of education will have an influence which is positive for productivity and

will have an impact on high income [12]. The number of owned indicates the number of goats owned by the respondent. The average number of owned goat are 14 heads. The average number of owned goat is higher when compared to the results of research in Tamalatea District, Jeneponto Regency, namely the average ownership of goats are 12 heads [13].

Income

Production costs are the total costs incurred in an effort to obtain products, production costs consist of fixed costs and variable costs. average production cost of IDR 10,672,862/year/14 heads. The average production cost is higher when compared to the results of Posumah's research, which is IDR 1,117,327.59/year/5 heads [14]. Goat livestock business revenue is the total yield obtained by farmers for one year. Revenue is obtained from the sale of livestock, milk and manure. The average PE Kaligesing goat business revenue is IDR 27,322,600/year/14 heads. The average acceptance is higher than the results of the Posumah research, which is IDR 3,653,344.82/year/5 heads [14]. Income is the difference between income and production costs. The average income is IDR 16,649,738/year/14 heads. This average income is higher than the results of Posumah's research, which is IDR 2,518,017.24/year/5 heads [14].

Factors affecting the income of goat farming

The influence of the factors on the income of PE Kaligesing goat farming was used by means of multiple linear regression analysis. The results of multiple linear regression analysis are presented in Table 1.

Table 1. The result of multiple linear regression analysis

Variable	Coeffisient	Sig
constant	9761896.05	0.312
Forage cost (X1)	-21.80	0.000
Number of goat sold l (X2)	4714484.73	0.000
Experience in farming (X3)	170746.56	0.661
number of goat owned X4	-512129.22	0.341
R^2 0.720		
F 0.000		

The regression equation model is based on Table 1 as follows :

$$Y = 9761896.047 - 21.797\ X1 + 4714484.728\ X2 + 4714484.728\ X3 - 512129.220\ X4$$

Table 1 showed that the R^2 value is 0.720. This value indicates that the variable cost of forage feed, the number of cattle sold, the experience of raising livestock and the amount of livestock ownership is able to explain the income variable for PE Kaligesing goats by 72% and the remaining 28% is explained by variables outside the model. The variable costs of forage, the number of goat sold, the experience in farming and the number of goat owned jointly have a very significant effect on the income of PE Kaligesing goat farming ($p < 0.01$). The variable cost of forage and the number of goat sold partially had a very significant effect on the income of PE Kaligesing goat farming ($p < 0.01$). The variables of farming experience and the number of goat owned partially did not affect the income of PE Kaligesing goat farming ($p > 0.05$). The regression coefficient value of the feed cost variable is -21.80. The value of the regression coefficient is negative, so the cost of forage has a negative effect on the income of PE Kaligesing goat farming. This means that every forage cost increases by IDR 1/year, farming income will decrease by IDR 21.80/year. Feed is the biggest price component issued by breeders. If the costs incurred for forage are greater, it will reduce the income of the PE Kaligesing goat farming. These results are in accordance with the results of Welerubun's research that the forage price variable has a negative and significant effect on the income of Kisar sheep farmers on Kisar Island, Southwest Maluku Regency [15].

The variable coefficient value of the number of goat sold was 4714484.73. This value means that for every number of goat sold increases by 1 head/year, the PE Kaligesing goat farming income will increase by IDR 4,714,484.73/year. The results of this study are in accordance with Posumah's research that the number of goats sold has a positive and significant effect on the income of goat farming in Posumaen District, Southeast Minahasa Regency [14].

4. Conclusion

The conclusion were an average production cost of IDR 10,672,862/year/14 heads, an average revenue of IDR 27,322,600/year/14 heads and an average income of IDR 16,649,738/year/14 heads. The results of multiple linear regression analysis showed that the cost of forage and the number of goat sold had a very significant effect ($p<0.01$) on the income of Kaligesing PE goat farming, while the experience in farming and the number of goat owned had no effect ($p>0.05$) on the income of PE Kaligesing goat farming

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