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Financial Performance of Small Scale Layer Farming In Malang Regency Indonesia

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ABSTRACT: The research was conducted at Malang Regency, East Java, Indonesia to know the amount of small-scale income obtained by layer' farmer. The study began on January 6 to February 7, 2017. The method used was a survey method. The total sample was 109 respondents determined by purposive sampling method with the consideration of farmers who breed laying a layer of 1000-5000 for at least 3 years. The collection of research data consisted of primary data and secondary data. Data were analyzed using an input-output approach and descriptive analysis. The result shows that the average production cost of small-scale laying layer was IDR. 105,333,267 per month while the average revenue is IDR. 113,953,351 per month. The average income obtained by small-scale layer chicken farmers is IDR. 8,620,084.
KEYWORDS: *income, layer, small-scale*

I. INTRODUCTION

In line with the national economy increases, the consumption of livestock products as sources of animal protein has increased significantly. This condition can be seen in the increase in per capita consumption along with the increasing income of the Indonesian people. Dirjennakkeswan (2017) detailed that national egg consumption in 2017 reached 6.309 kg/ capita/year, followed by fresh meat consumption of 3.963 kg/capita/year and milk by 0.156 liters/ capita/year. Based on these statistics, eggs are the most widely derived commodity of livestock products compared to other commodities.

The egg is one of the livestock product that is nutritious, useful as a source of animal protein, easy to digest and can be processed into various food products. Primaditya, et al (2015) revealed that eggs are one of the food products from the livestock that has potential to be developed optimally because it is cheaper than other animal proteins and egg management is relatively easy. Almost all types of society can consume this type of food as a source of animal protein because the egg is one of food that is easily obtained and easy to process.

The production of broiler eggs in Malang Regency has high potential, in 2017 it reached 43,452 tons, grew an average of 12.37% over the period from 2012 to 2016 (BPS Malang Regency, 2017). Layer farming in Malang Regency mostly issmall-scale farms with a population less than 7000 layers. A limited development from small-scale farms to larger scale was because of the factor of business capital, access to input and its market availability. Almost All Livestock-raising usesystems independent pattern, so the farmers do not have a contract that they are bound to sell their products to nucleus companies. Farmers often neglect the factors of production in the livestock business so that the profits earned are not proportional to the amount of input provided. Based on these conditions, it is important to conduct a study that examines the income of smallholder chicken breeders in the district of Malang.

II. RESEARCH METHODOLOGY

The research was conducted from January 6 to February 7, 2017. The research location in Malang regency with the consideration that the area is one of the centers of development of laying chicken farm. Based on data from the Animal Husbandry Department of Malang Regency, the population of the layer in Malang Regency in 2017 was 5,765,796 tails as presented in Table 1 below:

Table 1 Population of the layer in Malang regency (bird)

No	Sub-district	Amount
1	Tumpang	1.463.720
2	Singosari	723.973
3	Lawang	624.083
4	Turen	418.801
5	Poncokusumo	348.087
6	Wajak	279.827
7	Dampit	206.661
8	Kalipare	181.574
9	Jabung	168.413
10	Pakis	122.962

III. DATA COLLECTION

The research was conducted by survey method consisted of 2 stages, namely pre-survey and survey. The pre-survey stage was conducted to determine the general condition of the study and the whereabouts of the respondents. Determination of respondents was done by a purposive random sampling of farmers who have layer' farms with a population of 1000 - 5000 and run their business for at least 4 years. The survey stage was carried out by collecting primary and secondary data. Primary data was obtained directly from breeders as respondents through interviews using the help of questionnaires, while secondary data was obtained from relevant agencies such as BPS and the Livestock Service Office of Malang Regency.

1. **Data analysis**

Data were analyzed using input-output and descriptive analysis. Descriptive analysis was used to explain the facts and findings of the survey results while the input-output analysis was used to calculate the income of laying layer farmers with the following formula:

Total production costs

TC = FC + VC

where:

TC = Total Production Costs (IDR/month).

FC = Fixed Cost (IDR./month).

VC = Variable Cost (IDR/month).

Revenue

TR = Pq x Q

where:

TR = Total Revenue (IDR/ month).

Q = quantity (litre./ month).

Pq = The price (IDR/ month).

Income or profit

π = TR - TC

where:

π = Income (IDR/ month).

TR = Total Revenue (IDR/ month).

TC = Total Production (IDR/ month).

$\pi > 0$: Businesses experience profits

$\pi < 0$: Businesses experience losses

π = TC: The business done is not profit or loss (breakeven)

IV. RESULTS AND DISCUSSION

1. Overview of Research Sites

Malang Regency is located at an altitude between 0-2000 m above sea level. The total area of Malang Regency is 3,238.26 km2 or 353.486 ha. Topographical conditions in Malang Regency are highland areas surrounded by several mountains and lowlands or valley areas at an altitude of 250-500 m above sea level located in the central part of Malang Regency. The upland area is a limestone hilly area (*Kendeng* Mountain) in the south at an altitude of 0-650 m above sea level, the *Tengger Semeru*Mountainslope in the eastern part

extends from north to south at an altitude of 500-3600 m above sea level and the *Kawi* and *Arjuno* Mountain slopes in the west at an altitude of 500-3.300 m above sea level.

Topographical conditions of the mountains and hills make Malang Regency as a cool and much sought after area as a place of residence and resting place. The average air temperature ranges from 22º C to 26.8º C. The average air humidity ranges from 66 percent to 91 percent and the average rainfall ranges from 15.3 mm to 417.4 mm. The lowest average rainfall occurred in June and the highest in December. The structure of land use includes settlements of 2.41%, rice fields 15.74%, gardens 31.31%, plantations 6.21%, forests 22.80% and other remaining 21.52%.

2. Characteristics of Respondents

The success rate of livestock business is inseparable from the characteristics of the farmers. Characteristics are the factors that influence the business of farmers. Characteristics of respondents observed in the study included age, education, occupation, breeding experience and a number of family members.

2.1 Age

Age is one indicator for the success of a business, a younger age or productive age encourages farmers to strive optimally to obtain higher profits and to be more responsive to changes.

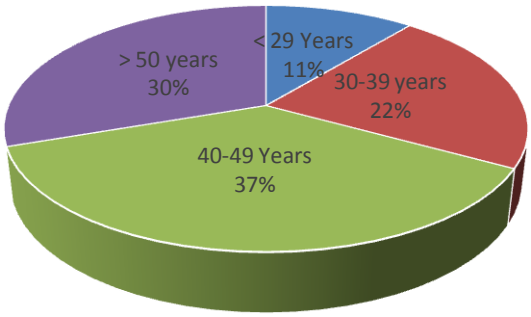

Figure 1. Farmers' Age

Based on Figure 1, small-scale layer chicken farms in Malang Regency are mostly managed by farmers aged 40-49 years as much as 36.7%. This number indicates that laying chicken business is managed by farmers who are young and productive. At the productive age, the farmers tend to have strong and healthy physical states in managing the business, so they are farmers stronger compared to the age of the older farmers. In addition, productive age are merely risk taker in trying new innovations, because they have a sense of curiosity about new knowledge and interest in adopting technology are stronger.

2.2 Occupation

Occupation is an activity undertaken by farmers to meet their needs. Occupation in this research was divided into, the main job and the side job. The main job is a routine job preferred by the respondents with the assumption that the main job earns more income compared to the side job (in terms of nominal). While the side job is assumed as supported activities to increase the income of respondents. Occupation determines the direction of prosperity, both in terms of household, economic, social and health.

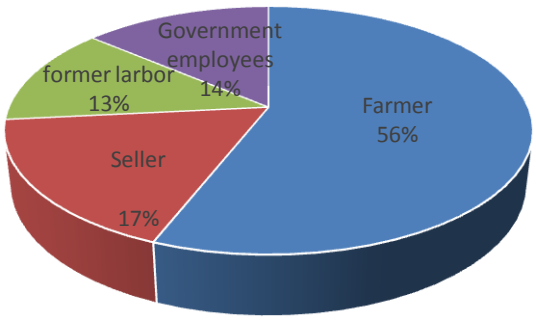

Figure 2 Types of Occupation

Based on Figure 2 it is known that the majority of respondents' occupation areas farmers as much as 56%. The topography and tropical climate of Malang Regency are very supportive for agriculture and livestock. The presence of abundant natural resources causes the livelihood of most of the respondents to be farmers and done for generations.

2.3 Farming Experience

Farming experience shows the length of time the farmer carried out his business. Experience is knowledge gained through the routine of daily activities. Farmers, who have more experience in managing their business, have better knowledge, attitudes,and skills when compared to new breeders.

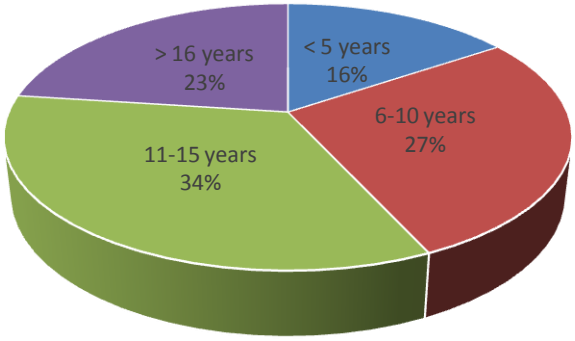

Figure 3 Farming Experience

Figure 3 shows that the majority of farmers who have experience breeding for 11-15 years as much as 34%. It indicates that the loyalty of respondents in raising livestock is very high because income through laying layer breeding is able to meet all daily needs. The majority of farmers have long enough business experience in raising livestock. This experience can affect livestock production and make it easier for farmers to accept and to choose the right technology.

2.4 Number of Family Members

The number of family members is an important factor in the livestock business. Family members as assets of human resources, especially those who are in of productive age and contribute to farming activities, otherwise family members can become a burden on their families if they are not actively working.

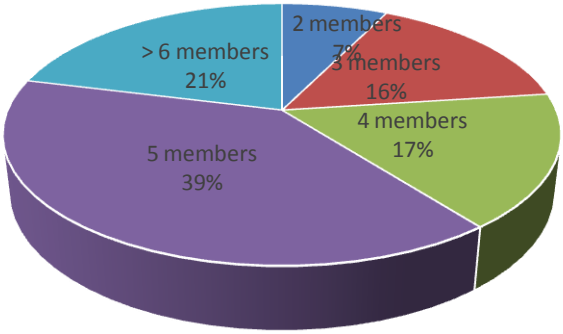

Figure 4 Number of Family Members

The majority of respondents who have a total of 4 family members as much as 39%. The average age of breeders are still in productive age and some children from the family come together as their parents. The number of family members who have a lot of positive values is that there are many workers available to help work, on the contrary, the negative aspect of a large number of family members is that family expenses and dependents will be greater.

3. Production costs

The production costs of layer' farms are classified into 2 parts, they are fixed costs andvariable costs. The production costs of laying layer in Malang Regency can be seen in table 2 below:

Table 2 Production costs for small-scale laying layer

Production Costs	Small Scale (IDR/month)	(%)
Fixed cost		
Depreciation Cages	11,168,831	10.60
Warehouse Depreciation	1,246,753	1.18
Depreciation Equipment	6,701,299	6.36
Animal Depreciation	9,385,540	8.91
Total	28,502,423	
Variable cost		
Feed	70,130,844	66.58
Drug	1,500,000	1.42
vaccine	1,340,260	1.27
Vitamin	1,611,688	1.53
Employee salary	1,577,922	1.50
Electricity	670,130	0.64
Total	76,830,844	
Total Production Costs	105,333,267	100

Table 2 shows that the total production costs of a small-scale layer chicken farm are IDR. 105,333,267 per monthwhich is divided into fixed costs and variablecosts. The fixed cost of IDR. 28,502,423 consists of shrinkage of cages, warehouses, equipment, and livestock. Cage depreciation occupies the largest percentage of fixed costs of 10.60%. Depreciation sometimes is the initial value of making a cage in cash minus the final value of the cage after it is no longer used and then divided with the cage's durability. The variable cost of IDR. 76,830,844 consists of feed, medicine, vaccines, vitamins, employee salaries, electricity. Feed is the largest cost of all production costs. The cost of feed in a month is IDR. 70,130,844 or 66.58% of the total production costs. The magnitude of the percentage of the cost of feed in production costs because every day need feed to produce and to survive as mention as Maspique and Sawe (2011), the ideal use of feed is 60-80 percent of the total costs incurred from the production process.

4. Revenue

The revenue of livestock business is all farmers' income from production which is stated in rupiah. Revenue is calculated in cash received by farmers from the sale proceeds (Dewanti and Sihombing, 2012). The results obtained from layer farms are eggs, abnormal eggs, manure and culling chicken (table 3).

Table 3 Revenue of small-scale layer farms (IDR/month)

Revenue	Amount
Egg	107,220,779
Abnormal Egg	1,742,338
Manure	558,442
Culling chicken	4,431,792
Total revenue	113,953,351

Table 3 shows that the income from small-scale layer farming is IDR. 113,953,351. The largest proportion of revenue comes from the sale of eggs IDR. 107,220,779 followed by culling chicken at IDR. 4,431,792 abnormal eggs IDR. 1,742,338 and the smallest gain is from manure sales is IDR. 558,442. Large and balanced production costs with the business scale cause the level of farmer acceptance will be even greater if the management system is carried out optimally (Triana et al., 2007).

5. Income

Farmers income results from the sum of revenue an production cost. Farming scale affects the farmer's income. The benefits of layer farming can be seen in table 4.

Table 4 Income of small-scale layer farming (IDR/month)

Description	Amount
Revenue	113,953,351
Production costs	105,333,267
Income	8,620,084

Table 4 shows the total income of small-scale layer farming in Malang regency for IDR. 8,620,084. The size of the farmer's income is caused by the number of business scales. This is clarified with Saediman (2012) that the difference in the income of laying chicken farming is influenced by the scale of business and the number of costs incurred affect the size of income.

V. CONCLUSION

Income that obtained by small scale layer farmers in Malang Regency is IDR. 8,620,084 per month, using production costsIDR 105,333,267 and revenueIDR 113,953,351.

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