Socio-economic profile of small-scale laying chicken farmers in Blitar Regency Indonesia

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Abstract. Blitar Regency is one of the centers for livestock production in East Java, especially poultry. Egg production was 75% of the egg demand in East Java. There are many centers for producing eggs in Srengat, Ponggok, and Kademangan. Blitar Regency is selected as a research location with the consideration that it has the largest population of laying hens in Indonesia. The result showed that the number of respondents was 70 chicken farmers selected by purposive sampling. The number of family members about 45.5% has families, 4 people. The age of the farmers was 40–49 years old about 31.8%, while the smallest age was in the range of fewer than 19 years, which was 9.1%. the education of most respondents was junior and senior high school education levels about 31.8%. The breeding experience was 54.5% of respondents who had 1–10 years of farming experience. The livestock population of the largest respondents farmers is the total population of less than 5,000, about 65.2%. The conclusion of this research is the family member of farmers was 4 people, the educational level was senior high school, the age was 40–49, the experience was 1–10 years, livestock population was 5,000.

1. Introduction
Development of livestock sub-sector is part of agricultural sector development, which has a strategic value in fulfilling increasing demand for food due to the increasing population of Indonesia, increasing the average income of the Indonesian population and standard of living. The development will success have an impact on changes in people's consumption, from previously consuming more carbohydrates towards consumption such as meat, eggs, and milk. It is further explained that demand for domestic chicken eggs and meat can be met by local production, but milk and beef still need supplies from abroad.

Various efforts to develop animal husbandry have been attempted by the government in remote areas but there is still a shortage of products that will supply the needs of the Indonesian population for protein and animals.

Eggs are one of the proteins that some nutritional needs because they are full of nutrients that the body needs, easy to digest, and can be processed into various kinds of food products. Hendri et al (2012) stated that eggs are a food source that is easy to obtain and easy to process [1]. The price of eggs is cheaper than other animal proteins, causing almost all levels of society to consume this type of food as a source of animal protein. These conditions make eggs are the food that always needed and widely consumed by the community.

The production of eggs in Indonesia has high potential, in 2016 it reached 1,485,688 tons, growing an average of 8.55% during the period from 2013 to 2016. East Java is one of the largest producers of eggs in Indonesia. Statistical data shows that the population of layer chickens in East Java is around
69.94% of the total population in Indonesia. The population of laying hens for the last 5 years in East Java shows that from 2011 to 2015 has increased. The highest population occurred in 2015 amounting to 43,221,466 chicken and the lowest in 2011 amounting to 37,035,251 chicken, while the population in 2012 was 40,268,631 chicken, in 2013 it was 43,066,361 chicken, in 2014 it was 41,156,842 chicken [2]. The increase in population from year to year indicates that Indonesia is still short of eggs for domestic needs. Therefore, efforts to increase production are wide open and domestic egg production has an opportunity to fill the export market.

Blitar Regency is one of the centers for livestock production in East Java, especially poultry. In 2019, egg production in Blitar Regency was 75% of the egg needs in East Java. There are many centers for producing egg production in Srengat, Ponggok, and Kademangan Districts [2]. Data from the Blitar Poultry Association (2019) quoted, from about 3,000 layer hens in Blitar Regency, 70% of them are small scale breeders/community farms [3]. Farmers usually function as decision-makers who try to make effective and efficient decisions in running and managing their livestock business.

Blitar Regency has enough potential for the development of laying chicken farms, but the potential for livestock in an area not only through data or numbers, this is because the potential for livestock in an area is determined by various aspects that must be known and researched comprehensively through research and scientific approaches. One aspect that needs attention is the socio-economic conditions of the farmers in the area. Based on the background and problems that have been described, problems can be formulated: What are the characteristics of the laying hens in Blitar Regency. Research Objectives Based on the background, this study aims: To identify the characteristics of the laying hens in Blitar Regency.

2. Method

2.1. Time and location
Time of research, which included data collection, data analysis, and report writing, lasted from May to September 2020. The research location was in Blitar Regency. Determination of Blitar Regency as the research location was carried out purposively, with the consideration that Biltar Regency is one of the districts with the largest population of laying hens in Indonesia.

2.2. Sampling method
Determining the minimum number of samples is carried out with consideration that the samples taken are representative of the population. The number of samples was 70 layer chicken breeders who were selected by purposive sampling. All sample breeders are members of farmer groups and have had more than 5 (five) years of breeding experience. To facilitate descriptive analysis that can describe actual conditions, the sample is grouped into 3 (three) scales based on livestock ownership, namely scale I (50 respondents with livestock ownership ≤5,000 head, scale II (Farmers with livestock ownership between 5,000–10,000 heads) as many as 30 respondents and Scale III (breeders with livestock ownership> 10,000 heads) as many as 20 respondents.

2.3. Data collection
The types of data collected are primary and secondary data are directly or indirectly related to the problem and research objectives to be achieved. Primary data includes the number of livestock ownership and cultivated, all types of input and output data related to factors that affect the applied livestock business household economic income. Secondary data includes various data and information available in documents sourced from government technical agencies and non-governmental organizations at the village, sub-district, district, and provincial levels, such as the Animal Husbandry Service, BPS (Central Statistics Agency), and various other relevant agencies that will support the research.
2.4. Data analysis
To describe the business conditions of laying hens in the research area, descriptive analysis was used with tabulation models, table analysis, frequency distribution, and percentage of each variable. Characteristics of the respondents analyzed included the number of family dependents, the age of the breeders, the number of livestock raised, the farming experience, the education level of the breeders, the number of family members involved in raising livestock. All explaining empirical data uses descriptive analysis. This is used for the case description of empirical data, for example, the author will show what percentage of the farmer's household income comes from agricultural activities.

3. Results and discussion

3.1. Profile of respondent
Laying hens are one of the most developed types of poultry in East Java. According to statistical data, the number of livestock business households by region and type of livestock in 2019 is in East Java Province with the largest number of egg-laying chicken farms in the Blitar Regency with a total of 4,321 layer chicken farms. As one of the largest egg production centers in Indonesia, Blitar Regency in East Java Province can meet 70% of the egg needs for East Java and contribute as much as 30% of the National chicken egg requirement. In 2018, the population of laying hens in the Blitar Regency reached 15,365,100 with a total egg production of 155,802 tons. Most of the layer chicken farms are located in Srengat, Ponggok, Kademangan, Wonodadi, Kanigoro, and Udanawu Districts. According to data from the Blitar Poultry Association quoted [4], 70% of the 3,000 layer hens farmers in Blitar Regency are small-scale farmers.

3.2. Age of farmers

Table 1. Age of farmers.

| No. | Age (years) | Percentage (%) | Total respondents |
|-----|-------------|----------------|-------------------|
| 1.  | <29         | 9.1            | 6                 |
| 2.  | 30–39       | 28.8           | 19                |
| 3.  | 40–49       | 31.8           | 21                |
| 4.  | >50         | 30.3           | 20                |
|     | Total       | 100            | 66                |

Table 1 shows the age of the breeders, who became the most respondents aged 40–49 years, about 31.8%, while the age of the smallest respondents was in the range less than 29 years, about 9.1%. The average age of breeders was 30–39 years and over 50 years, the ages of these breeders were 28.8% and 30.3%. This is by the opinion of Vidyatmoko (2015), that age is a dominant factor in achieving entrepreneurial success, the more mature a person is, the more confident he is in doing livestock business as a way of livelihoods [5]. According to Yunus (2009), the socio-economic factors that significantly affect technical efficiency at $\alpha = 10\%$ are the age of the breeders, where young breeders have a higher level of productivity, which will increase technical efficiency [6]. The age of breeders also shows maturity in entrepreneurship and entrepreneurial experience will be better, along with the maturity of breeders themselves.
3.3. Total of family members

Table 2. Total of family members.

| Total of family members | Percentage (%) | Total respondent |
|-------------------------|----------------|-----------------|
| 2                       | 4.5            | 3               |
| 3                       | 25.8           | 17              |
| 4                       | 45.5           | 30              |
| 5                       | 21.2           | 14              |
| >6                      | 3.0            | 2               |
| Total                   | 100            | 66              |

The number of farmer family members is various, about 45.5% has family members, 4 people, while the number of family members 2 people is 4.5% and for the number of family members, more than 6 people is 3%. The average number of family breeders was 2 and 3, namely 25.8% and 21.2% (Figure 4.3). This is by the opinion of Tamzil and Indrasih [7], that the number of farmer family members on average is 3–7 people, this will affect farmer expenditure. Slightly different from the opinion of Putra et al (2017), which states that the average number of family members of the farmer is 4–5 people. The more family members, the more expenses from the farmer [8]. Furthermore, Vidiawan and Tsanawati (2015) explained that the number of family members of the breeders affects household consumption [9]. According to Purwaningsih (2014) that the owner and family members are internal actors in the livestock business, internal actors in the environment of laying hens are actors who manage and in charge of handling everything in the farm environment, both administration and production processes [10]. Therefore, as an internal actor, the owner and family members will also contribute to the progressive income of laying hens in the Blitar Regency.

3.4. Farmers education levels

Table 3. Farmers education levels.

| Education levels       | Percentage (%) | Total respondent |
|------------------------|----------------|-----------------|
| Primary School         | 10.6           | 7               |
| Junior High School     | 31.8           | 21              |
| Senior High School     | 31.8           | 21              |
| Bachelor               | 25.8           | 17              |
| Total                  | 100            | 66              |

Based on table 3, the most respondents’ education of breeders is junior and senior high school education levels, about 31.8%, while the primary education level is 10.6% and breeders who have taken higher education are quite a lot at 25%. The average education level of breeders is junior high and high school, and increase in the education level of breeders who continue their education to the level of higher education, this is, of course, good for the livestock sector in Indonesia, according to the opinion of Tamzil and Indrasih (2020), animal husbandry is occupied by people who have a good education besides that there is an increase in student interest in the field of animal husbandry from time to time [7]. Further explanation by Fathurohman (2018) that the application of laying hen development policies can be carried out through the pathway of increasing land potential, human resource potential, and feed in the agricultural system [11]. Meanwhile, according to Yunus (2009), the level of education is quite an important factor in the livestock business, because the broiler breeding business requires certain skills, experience, and insight, especially in terms of adopting technology and skills from experts employed at beginning of a livestock business [6]. Therefore, the level of education is very influential in the effort to develop a layer chicken farm.
3.5. Breeding experience of farmers

Table 4. Breeding experience of farmers.

| Breeding experience (years) | Percentage (%) | Total respondent |
|-----------------------------|----------------|------------------|
| 1–10                        | 54.5           | 36               |
| 11–20                       | 24.2           | 16               |
| >20                         | 21.2           | 14               |
| Total                       | 100            | 66               |

Breeding experience obtained from interviews with breeders was 54.5% of respondents who had 1–10 years of breeding experience. Farming experience for 11–20 years about 24.2%, while the farming experience for more than 20 years is 21.2%. This is by the opinion of Yunus (2009), that the most commercial plasterboard is those who have almost 9.67 years of experience [6]. The experience of breeders in doing breeder business is less than 10 years, this has met the standards for management required in the poultry business. Meanwhile, the farming experience for more than 10 years is quite a lot. Also, the number of breeding experiences over 20 years tends to be less, this is because the livestock business is not only seen as a promising business because it is a very necessary need to support protein needs, it is also a business that has a high enough risk because it is related to living things. According to Putra et al (2017), respondents' experience in raising livestock has been quite long [8]. This condition indicates the quality of human resources (HR) of breeders when viewed from their experience in raising livestock can be trusted.

3.6. Population of chicken

Table 5. Population of chicken.

| Population of chicken | Percentage (%) | Total respondent |
|-----------------------|----------------|------------------|
| <5,000                | 65.2           | 43               |
| 5,000–10,000          | 19.7           | 13               |
| >10,000               | 15.2           | 10               |
| Total                 | 100            | 66               |

The livestock population of the largest respondent breeders is 5,000 chicken, about 65.2%, the livestock population of 5,000–10,000 about 19.7%, while for populations of more than 10,000 is about 15.2%. This is by the opinion of Vidyatmoko (2015), that business scale is the dominant factor determining entrepreneurial success, this is influenced by several, business capital, the desire to advance business and courage to take risks, to get a higher income [5]. The population of laying has increased from year to year during 2000–2012, an increase of 0.61% [12]. Furthermore, Sitompul et al (2012) explained that the number of laying hens affects the supply of laying hens so that it is hoped that breeders can help to stabilize production volume so the need for chicken eggs can be met [13]. Approximately 61% of layer chicken farmers are on a medium and large scale, resulting in high production costs for laying hens including costs for chicken food (feed) which almost reaches 80% of the total available funds [6].

4. Conclusion

The conclusion of this research is the family member of farmers which the most members that farmers have were 4 people, educational level of farmers was senior high school, the age around 40–49 years old, the breeding experience was 1–10 years, and livestock population that farmers have was 5,000.
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