



# The Dynamics of Laying Hens Business in Sumberjo Village, Kademangan District, Blitar Regency, East Java, Indonesia During the Covid-19 Pandemic

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## Abstract

*The purpose of this study was to determine the dynamics of the laying hens business during the Covid-19 pandemic in Sumberjo Village, Kademangan District, Blitar Regency, East Java, Indonesia. The method used in this study is a descriptive quantitative approach with survey techniques using questionnaires. Respondents used in this study were 35 egg laying breeders. Determination of respondents in this study was carried out by purposive sampling. Data collection in this study was carried out through observation and surveys using questionnaires. The results of statistical analysis showed that the average farmers in Sumberjo Village, Kademangan District were small breeders where 28.57% had a junior high school education. In their business activities, 73% of respondents replace livestock by maintaining DOC and 66% of respondents use factory feed supplied by poultry shops in Blitar Regency. During the Covid-19 pandemic, supplying animal feed and selling eggs became difficult and business profits were difficult to obtain. A score for the difficulty level of feed supply was 485.00; difficulty in selling chicken eggs was 491.00 and difficulty in earning profits in the laying hens business was 500.00. The conclusion of this study is that there are dynamics in the laying hens business in Sumberjo Village, Kademangan District during the Covid-19 pandemic where there are difficulties in feed supply, egg sales and achieving business profits.*

**Keywords:** covid-19 pandemic, laying hens, poultry business

## Introduction

The spread of the Covid-19 pandemic which has spread to many countries is troubling everyone (Suryana *et al.*, 2020). The Indonesian government's response to the Covid-19 pandemic includes making social and physical distancing policies. The side effects of implementing this policy include the emergence of changes in social order (Hadiwardoyo, 2020; Sholihin *et al.*, 2022). Restrictions on activities in the community lead to the closure of certain places that are the center of the crowd and certainly have an impact on the decline of the community's economy (Bellina, Cahyaningrat and Putri, 2020). Covid-19 has caused economic growth to be slow which has an impact on the economy of individuals, households, micro, small, medium and large companies, and even has an impact on the national economy (Taufik and Ayuningtyas, 2020). The prediction from the World Trade Organization (WTO) that the impact of the Covid-19 pandemic in the economy is a decline in world economic growth by 32% (Sugiri, 2020). The impact of the Covid-19 pandemic on the workforce in Indonesia is enormous. It was recorded that in April 2020 there were 84,926 companies from the formal sector and 31,444 companies from the informal sector that were affected by Covid-19. The

number of workers who were laid off due to being affected by Covid-19 reached 2,084,593 people (Livana *et al.*, 2020).

The impact of the Covid-19 pandemic is not only on the economic aspect but has become very broad, such as politics, social, cultures, defense and security as well as public welfare (Putri, 2020). The Covid-19 pandemic in the long term will affect the national logistics system. President Jokowi at the beginning of 2020 gave a policy direction for food supply by emphasizing the importance of maintaining food security from production to distribution to prepare for the threat of a food crisis. The government has ensured that the stock of a number of foodstuffs can supply the people's demand. However, its accessibility is influenced by distribution and people's purchasing power. The lack of smooth transportation is the impact of the implementation of restrictions on community activities carried out to break the chain of the spread of Covid-19 (Anugrah, Saputra and Sayaka, 2020).

Poultry farming is one of the agricultural sub-sectors that supplies the demand for animal protein food. The development of poultry farming business aims to supply the demand for meat and eggs. Consumption of chicken meat in 2017 reached 2,305,000 tons (Haryuni *et al.*, 2022). Eggs are livestock products with high nutritional value where the amino acids are close to the amino acids needed by the human body. The nutritional content of an egg includes water by 73.70%; protein 12.90%; 11.20% fat and 0.90% carbohydrate (Haryuni, Widodo and Sudjarwo, 2017; Haryuni, 2018). Chicken farming also has an important role in the national economy. It is reported that the poultry business in Indonesia is able to absorb up to 12 million workers (Haryuni *et al.*, 2022). Seeing the role of the poultry business which is very vital in the national economy as well as in fulfilling pagan needs, the government made Government Regulation Number 68 of 2002 concerning national food security by emphasizing on the independence of food supply based on local resources (Haryuni *et al.*, 2020).

Based on the description above, there is a need for research on the impact of the Covid-19 Pandemic on laying hens in Blitar Regency, because Blitar Regency is one of the areas in East Java where the majority of the population earns a living as breeders and Blitar Regency is the second largest egg supplier national after West Java Province (Haryuni and Lidyawati, 2019).

## Research Methods

This research was conducted in August-September 2021 in Sumberjo Village, Kademangan District, Blitar Regency, East Java, Indonesia. The method used in this study is a descriptive quantitative approach with survey techniques using questionnaires. Descriptive quantitative research is a type of research that utilizes data in the form of numbers. The data obtained in this study were tabulated and statistically analyzed to serve as the basis for the description (Hasan *et al.*, 2021). Data analysis used quantitative methods with a Likert scale show on Table 1.

Table 1. Measurement of data using the linkert method

No	Description	Symbol	Score
1	Strongly Disagree	SD	1
2	Disagree	D	2
3	Neutral	N	3
4	Agree	A	4
5	Strongly Agree	SA	5

(Widagdo *et al.*, 2020)

The calculation of the index value is calculated as below.

$$\text{Score} = (F1 \times 1) + (F2 \times 2) + (F3 \times 3) + (F4 \times 4) + (F5 \times 5)$$

Description:

F1 = Number of answers strongly disagree (SD)

F2 = Number of answers that disagree (D)

F3 = Number of neutral answers (N)

F4 = Number of answers that agree (A)

F5= Number of answers strongly agree (SA)

The calculation of the percentage value of the index is carried out using the following formula show on Table 2.

$$\text{Index percentage (\%)} = \frac{\text{Score}}{\text{Maximum score}} \times 100\%$$

Maximum score = Highest score x number of respondents

Table 2. Assessment interval

No	IP (%)	Assessment
1	81 – 100	Very strong
2	61 – 80	Strong
3	41 – 60	Strong enough
4	21 – 40	Weak
5	0 – 20	Very weak

\* Index percentage (Widagdo *et al.*, 2020)

#### A. Respondent

Respondents used in this study were 35 egg laying breeders. Determination of respondents in this study was carried out by purposive sampling on farmers who are directly involved in the laying hens business in Sumberjo Village, Kademangan District, Blitar Regency, East Java. Determination of the number of respondents in this study using the slovin formula (Velina and Rizky, 2022). Slovin formula to determine the number of respondents as below.

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

n = Number of samples

N = Number of population sampled

e = Allowance rate (10% for population > 1500; 15% for population 1000 – 1500 and 20% for population < 1000)

#### B. Data Types and Sources

The data used in this research is quantitative data. Quantitative data is data in the form of information or explanation in the form of numbers that can be measured or calculated directly.

The data used are primary data and secondary data. Primary data is data obtained directly from laying hens in Sumberjo Kademangan Village, Blitar Regency, East Java Province. Secondary data is obtained from the results of previous studies or data obtained from relevant agencies and in accordance with the research theme.

#### C. Data collection

Data collection in this study was carried out through observation and surveys using questionnaires. Observations were carried out directly on farms in Sumberjo Village, Kademangan District, Blitar Regency. This observation is done by recording and documenting certain events or events that are used to complete the research data.

## Results and Discussions

Blitar Regency is the second largest supplier of national chicken eggs after West Java. Blitar Regency is one of the areas in East Java which consists of 22 sub-districts with a population of laying hens reaching 20,051,400 tails in 2021 (BPS Kabupaten Blitar, 2022). One of the areas in Blitar with a number of residents who work as farmers is Sumberjo Village.

### A. Profile of Livestock Business in Sumberjo Village

Kademangan District is one of the sub-districts in the Blitar area which is the center of laying hens. The population of laying hens in Kademangan District in 2019 reached 2,883,000 heads (Subdirectorate of Livestock Statistics, 2020). Sumberjo Village is one of the areas in Kademangan District with a male population of 4.08 thousand people and 5.86 thousand women. Most of the people in this village are Javanese (BPS Kabupaten Blitar, 2021).

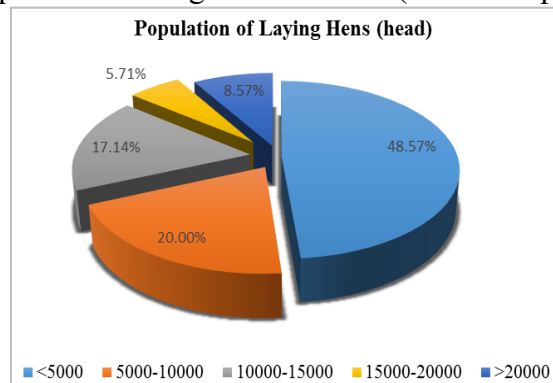


Figure 1. Total population of laying hens

Figure 1 show the results of the study indicate that the average chicken breeder in Sumberjo Village is a smallholder farmer of 48.57% of the respondents with a population of laying hens <5000 chickens; 20% of respondents 5000-10000 chickens; 17.14% of respondents 10000-15000 chickens; 5.71% respondents 15000-20000 chickens and 8.57% respondents > 20000 chickens.

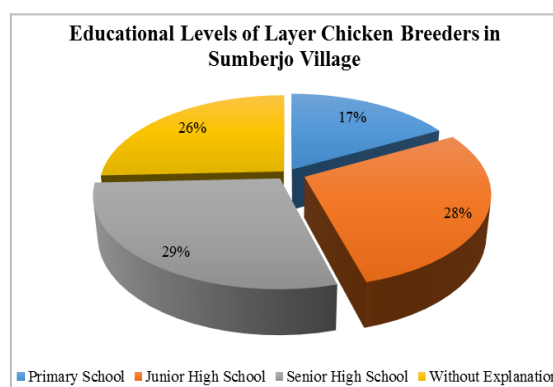


Figure 2. Educational levels of layer chicken Breeders in Sumberjo Village

The results showed that 28.57% of farmers had junior high school education, 8.57% had high school education, 17.14% had elementary school education and 25.71% of respondents did not mention their education level. The level of education of farmers in Sumberjo Village is shown in Figure 2.

Layer breeders in Sumberjo village use various types of feed. 34% of farmers use their own mixed feed and 66% of farmers buy factory feed in the form of concentrates and complete feeds. Breeders who use factory concentrate feed are 26% and those who use factory complete

feed are 40%. Purchases of factory feed are carried out at farm shops in Blitar district such as Satwa Unggul, Dynasty and Cahaya Gemilang. The frequency of feeding of all respondents was carried out twice a day by the farmers themselves assisted by family members show on Figure 3.

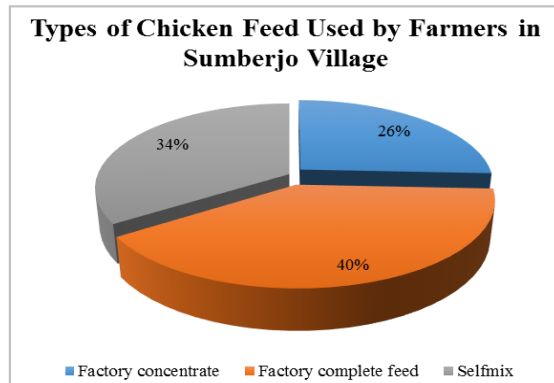


Figure 3. Types of chicken feed used by farmers in Sumberjo Village

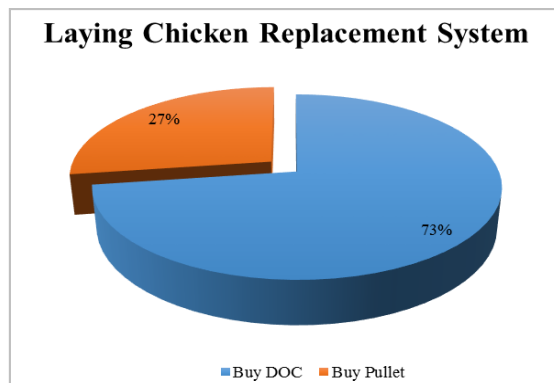


Figure 4. Laying chicken replacement system

Show on Figure 4 the replacement system between unproductive laying hens and productive laying hens on farms in Sumberjo Village is carried out by purchasing day old chicks (DOC) and then rearing them until they produce eggs and there are also breeders who buy hens that are ready to produce eggs called pullets. The results showed that 73% of breeders in Sumberjo Village had a replacement system with the purchase of DOC and 27% of farmers with a replacement system purchased a pullet.

**B. Laying Chicken Business in Blitar Regency during the Covid-19 Pandemic**

The results of statistical analysis of the data obtained during the study in Sumberjo Village, Kademangan District, Blitar Regency are presented in Table 3.

Table 3. The level of business difficulty during the Covid-19 Pandemic

The level of business difficulty	Score	Index (%)	Assessment
Chicken feed supply	485.00	97.00	Very strong
Egg sale	491.00	98.20	Very strong
Achieving business profits	500.00	100.00	Very strong

**a. Chicken feed supply**

The results of statistical analysis showed that there was difficulty in supplying animal feed during the Covid-19 pandemic. A score for the difficulty level of feed supply in Sumberjo Village was 485.00, the index value was 97.00% with a very strong assessment.

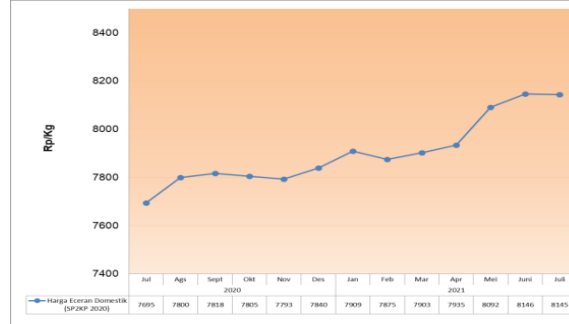


Figure 5. The dynamics of dry corn prices in Indonesia (Kementerian Perdagangan, 2021)

One of the reasons for the difficulty in supplying animal feed during the Covid-19 pandemic was due to poor transportation. This is the impact of the implementation of policies from the government related to large-scale social restrictions to prevent the transmission of the Covid-19 disease (Anugrah, Saputra and Sayaka, 2020). Other factors that have made it difficult to supply animal feed during the Covid-19 pandemic include constraints in the distribution of production facilities, a decrease in feed production due to a lack of manpower and limited imports of feed ingredients (Dermoredjo Saktyanu K., Saputra and Azahari, 2020).

**b. Egg sales dynamics**

The average selling price of chicken eggs in 2021 in Blitar Regency is presented in Table 4.

Table 4. Average price of chicken eggs in Blitar Regency in 2021

Month	Average price of chicken eggs (rupiah/kg)	
	Lowest	Highest
January	17,750	18,350
February	19,400	19,900
March	17,850	18,300
April	19,200	19,950
May	18,550	18,900
June	19,100	19,700
July	17,550	19,400
August	17,100	18,100
September	16,450	16,800

(PINSAR, 2021)

The results of statistical analysis showed that there was difficulty in selling chicken eggs during the Covid-19 pandemic. A score for the level of difficulty in selling chicken eggs in Sumberjo Village was 491.00, the index value was 98.20% with a very strong assessment.

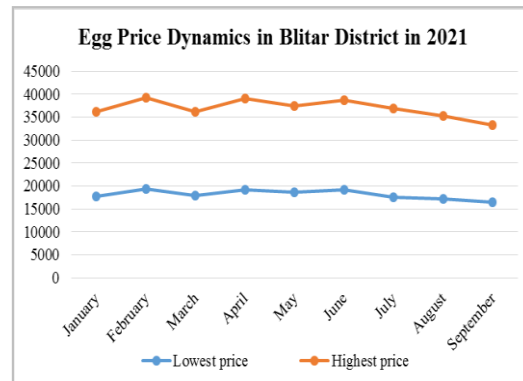


Figure 6. Egg price dynamics in Blitar during the Covid-19 pandemic in 2021 (PINSAR, 2021)

Figure 6 show the difficulty in selling chicken eggs that occurred during the Covid-19 pandemic was due to a decline in people's purchasing power. Data from the All-Indonesian Market Traders Association shows a decline in sales turnover of up to 90% during the Covid-19 pandemic (Bellina, Cahyaningrat and Putri, 2020). The difficulty of selling chicken eggs is partly due to restrictions on large-scale community activities which have an impact on decreasing demand for chicken eggs, closing several hotels, closing tourist attractions and restricting the application of opening hours to restaurants (Saliem, Agustian and Perdana, 2020).

### c. Laying hens business profit

The results of statistical analysis show that during the Covid-19 pandemic, a score for the level of difficulty in earning profits in the laying hens business in Sumberjo Village was 500.00, an index value of 100% with a very strong assessment. In the second quarter of 2020 the livestock business grew -1.83%. This was due to a decrease in demand for poultry products in line with the closure of hotels and restaurants during the implementation of Large-Scale Social Restrictions and the adaptation of the new normal policy (Saliem, Agustian and Perdana, 2020).

## Conclusion

The conclusion of this study is that there are dynamics in the laying hens business in Sumberjo Village, Kademangan District during the Covid-19 pandemic where there are difficulties in feed supply, egg sales and achieving business profits.

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