

The impact of broiler contract farming on socio-economic improvement of farmers in west Lombok

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Abstract

Broiler chicken farming plays a significant role in improving the socio-economic status of farmers and the wider community. This study aimed to evaluate the impact of broiler farming on the socio-economic development of farmers in West Lombok. The research was conducted in a purposively selected sample of three sub-districts in West Lombok. A total of 15 farmers respondents were classified into two groups: (1) farmers who rear 2,000-5,000 broiler chickens, and (2) farmers who rear more than 5,000 broilers. This research employed a qualitative and quantitative descriptive analysis for data analysis. The study revealed that broiler contract farming in West Lombok generated an average net income of IDR /US\$ 6,416,437/404.235 per period for a rearing scale of 2,000-5,000 birds, and IDR/US\$ 32,430,784/2,043.139 per period for a rearing scale of more than 5,000 birds. This income has a significant impact on family earnings, accounting for an average of 78.7% on a rearing scale of 2,000-5,000 birds and 79.2% on a rearing scale of more than 5,000 birds. The correlation coefficient between the net income of a broiler contract farming and family income exhibits a strong positive relationship, with a value of 0.964. The broiler chicken farming operated by farmers appreciates positive reception from the local community. This is demonstrated by the job opportunities provided to residents and the active involvement of farmers in constructing places of worship and organizing village events. As a result, a harmonious relationship between farmers and the community has been achieved.

Keywords: Broiler farming; Impact; Socio-economic; Income

1 Introduction

The livestock industry is a component of the agricultural sector with potential for growth. It is necessary to support the development of this industry as it can provide additional value to Indonesian agriculture. The success of the livestock industry in contributing to Indonesian agriculture depends on our ability to develop the business and its prospects in the market. The livestock sub-sector plays a pivotal role in agricultural development due to its substantial contribution. In addition to agriculture, farmers need to invest in the livestock sector to augment their income Dananjaya [1]. Poultry farming remains the primary choice among farmers for livestock-related trade, as opposed to practices such as cattle and sheep rearing. This is because the rearing period for poultry is shorter, resulting in faster capital turnover within the poultry farming sector and quicker profits within a shorter rearing period.

The growth of the broiler population is intertwined with numerous challenges, such as the volatility of broiler chicken selling prices, DOC prices, feed costs and drug prices, that present a predicament for broiler farmers. The growth of the broiler livestock population is intertwined with numerous challenges, such as the volatility of broiler chicken selling prices, DOC prices, feed costs and drug prices, that present a predicament for broiler farmers. These factors can significantly affect farmers' earnings. Adopting a partnership approach to broiler farming can help to mitigate these

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hindrances. According to Wijayanto et al. [2], the required initial investment to start a broiler business is among the factors prompting farmers to engage in a partnership pattern system. Livestock development patterns featuring a partnership system with a main company aim to secure additional capital. This partnership is established between two parties: the first comprising companies and farmers functioning as plasma, referred to as the nucleus-plasma concept. The contract model entails mutual needs, benefits, and the reinforcement of each party's responsibilities (companies and farmers). According to Mahyudi and Husinsyah [3], the contract model represents a way to eliminate competition among farmers when managing livestock businesses.

Sometimes partnership relations can cause problems if they are not mutually beneficial. This may happen because the company has a stronger position than the farmers in terms of capital, technology, market and management, which can make the farmers feel like they are simply employed by the core company. A further issue for plasma farmers is that they do not always receive satisfactory service whilst participating in partnerships. Farmers lack bargaining power when it comes to setting contract prices. The provision of Department of Agriculture and Cooperation (DOC) is often problematic due to poor quality, but farmers have no choice but to accept it. Yassir, [4].

In this technological era, chicken farming, particularly broiler chicken rearing, is rapidly expanding across the country, including West Nusa Tenggara Province. Numerous large and developing companies are investing in farmers through partnerships to reduce concerns in developing a broiler business for farmers in Lombok Island, particularly West Lombok Regency. The aforementioned situation is likely to affect farmers' household income. Hence, conducting an investigation to analyze the impact of broiler farming on bettering the socio-economic standing of farming households becomes crucial. Hence, conducting an investigation to analyze the impact of broiler farming on bettering the socio-economic standing of farming households becomes crucial. The study's findings are anticipated to serve as a basis for formulating policy suggestions and programs that enhance farmers' welfare.

2 Material and method

2.1 Selected Location



Source: <https://www.google.com/search>

Figure 1 Lombok island

West Lombok is one of ten regencies/cities in West Nusa Tenggara Province. Administratively, West Lombok Regency is divided into ten districts, namely Sekotong, Lembar, Gerung, Kediri, Kuripan, Narmada, Lingsar, Gunungsari, and Batulayar. The region covers an area of 1,053.92 km². Astronomically, West Lombok can be located between 115° 49.12'

04" - 116° 20'15.62" East Longitude and 8° 24' 33.82" - 8° 55' 19" South Latitude. On the basis of its geographical position, West Lombok shares borders with North Lombok Regency to the north, the Indian Ocean to the south, Lombok Strait and Mataram City to the west, and Central Lombok Regency to the east. Central Bureau of Statistic, [5]. This investigation was conducted in three districts: Lingsar, Gerung, and Lembar. The selection of the three districts as research locations was carried out intentionally, and the research sample comprised broiler farmers that have partnered with core companies. A census was conducted on all farmers in the three districts, resulting in a total of 15 farmers as respondents.

Research using survey methods involves conducting interviews for data collection. The research uses both primary and secondary data, including both quantitative and qualitative data. As Sugiyono [6] explains, qualitative data describes the genuine, natural condition of something, while quantitative data involves the use of numbers for collecting, interpreting, and presenting data.

2.2 Data analysis

2.2.1 Revenue Analysis

The analysis of income for a broiler chicken farm business involves determining the difference between the total revenue and the total costs incurred. This is carried out systematically, as shown:

$$\text{NFI} = \text{GFI} - \text{TC}$$

Description:

NFI = Net Farm Income

GFI = Gross Farm Income

TC = Total Cost

Then, the income analysis of farmer/farmers families comprises (1) income from rearing broiler chickens, (2) income from cultivating food crops, (3) income from other business ventures, and (4) income from livestock excluding broiler chickens.

The systematic calculation of the contribution made by a broiler farming business to a farmer or farmers's family income can be accomplished using the formula below.

$$K = \frac{\text{net income of broiler chicken}}{\text{FE (Family Earning)}} \times 100\%$$

2.2.2 Correlational Analysis

On Broiler Chicken Farming and Family Earning A simple correlational analysis (Product Moment) is conducted, as outlined by Siregar [7], using the following formula:

$$r = \frac{n(\sum xy) - (\sum x \cdot \sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Description:

n = Number of Respondent Data for Broiler Chicken Livestock Business

y = Family Income

Social impact analysis in this study utilizes descriptive qualitative and quantitative methods Data on the impact of broiler farming on improving farmer welfare comprises socio-economic aspects. Qualitative data is transformed into quantitative through scoring and then analyzed descriptively.

3 Results and Discussion

3.1 Characteristics of Respondent Farmers

In Table 1, the data shows that farmers have an average age of 46 years. According to Wahid [8], the population is categorized into three age groups: (1) young/non-productive age (0-14 years), (2) mature/working age/productive age (15-64 years), and (3) old age/unproductive age (65 years and above). Age is closely linked to the mindset used to

determine the management system for business activities. Karmila, [9]. Based on the statement, it can be objectively stated that broiler farmers in West Lombok Regency demonstrate productive age characteristics.

Table 1 Characteristics of the respondent farmers

No	Parameter	Number
1	Average Age (years)	46
2	Level of education (%)	
	Not completed in primary school	13,3
	Elementary School	6,7
	Junior High School	20,0
	Senior High School	26,7
	College	33,3
3	Average Family Dependents (people)	4
4	Average Farming Experience (years)	7

Source: Primary data processed in 2023

The majority of farmers possess a tertiary education level, with a percentage of 33.3%. This indicates that highly educated farmers who remain productive are better equipped to adopt innovations and make decisions that ensure the continuity of their business, thus avoiding future losses and problems. This view aligns with Sari's [10] assertion that a population or community's level of education is crucial, as one's level of education impacts their ability to think creatively and seize every opportunity to improve living standards and create job opportunities.

The average size of a farmer's dependent family is four people. Therefore, broiler farmers in West Lombok Regency are classified as medium-sized families, as per Bayanur Rahman's [11] definition, where a family with 1-2 dependents is small, 3-4 dependents is medium, and more than 4 dependents is large.

The study respondents had an average experience of 7 years. Long-term experience raising broiler chickens can impact the level of success in the industry. As per Wati et al.'s [12] findings, farmers with significant experience in farming possess more knowledge than novice farmers. This underscores the importance of livestock-raising experience as a measure of one's ability to manage a livestock business. This is supported by the findings of a field study, which demonstrate the degree of adoption of novel innovations in business operations, aided by extensive education and practical experience in business management.

3.2 Broiler contract farming Business

Table 2 depicts the aggregate expenses borne by farmers during a single rearing period for their broiler farm. Within the total cost framework, variable costs overwhelmingly constitute farmers' expenditure with a substantial proportion of expenses (96.8%) on Scale I and 97.1% on Scale II.

Table 2 Average Total Production Cost of Broiler Farming in West Lombok Per Scale Per Period of Rearing

No	Description	Scale I (2,000-5,000 birds)			Scale II (> 5,000 birds)		
		Value	%	Cost/bird	Value	%	Cost/bird
1	Total Fixed Costs (IDR/US\$)	3,852,677/ 242.719	3.2	1,250/ 0.079	10,885,016/ 685.756	2,9	1,256/ 0.079
2	Total Variable Costs (IDR/US\$)	115,708,000/ 7,289,604	96.8	39,674/ 2.499	360,493,000/ 22,711	97.1	39,205/ 2.469
Total Cost (IDR/US\$)		119,560,677/ 7,532.322	100		371,378,016/ 23,396.815	100	

Source: Primary data processed in 2023; *Assumption 1 US\$ = 15,903 IDR

Total gross income, or total revenue, is the product of multiplying the quantity of output by the selling price. The gross income from broiler farming in West Lombok during one period on Scale I (2,000-5,000 birds) was on average IDR/US\$ 125.977.114/7,936.558, with the gross income being the selling price of chickens with a mean total harvest weight of 5,810 kg and a mean contract price of IDR/US\$ 21.652/1.364. On Scale II (>5,000 birds) the gross income averaged at IDR/US\$ 403.808.800/25,439.954 with a mean total harvest weight of 18,623 kg and a mean contract price of IDR/US\$ 21,874/1.378.

Table 3 Average Net Income of Broiler Farming in West Lombok per Rearing Period

No	Description	Scale I (2,000-5,000 birds)		Scale II (> 5,000 birds)	
		Value/period	Value/bird	Value/period	Value/bird
1	Total Gross Income (IDR/US\$)	125,977,114/ 7,936.558	43,179/ 2,720	403,808,800/ 25,439.954	43,960/ 2.769
2	Total Production Cost (IDR/US\$)	119,560,677/ 7,532.322	40,924/ 2.578	371,378,016/ 23,396.815	40,462/ 2.549
Total Net Income (IDR/US\$)		6,416,437/ 404.235	2,255/ 0.142	32,430,784/ 2,043.139	3,498/ 0.220

Source: Primary data processed in 2023

Broiler farming businesses in West Lombok at scale I generate an average of IDR/US\$ 6.416.437/404.235 per period, and scale II generates IDR/US\$ 32.430.784/2,043.139 per period. Profit is calculated by deducting the total production cost from gross income.

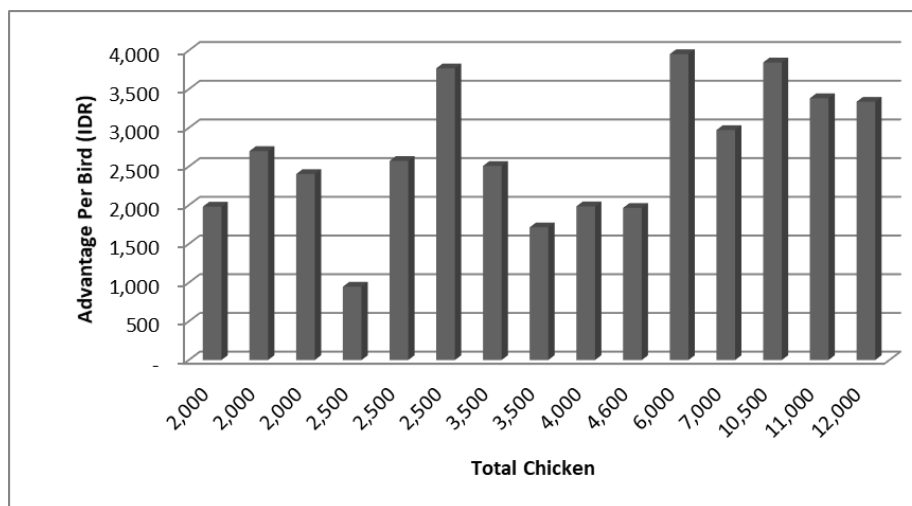


Figure 2 Farmer profits per chicken

The chart presented illustrates the profits per chicken gained by farmers based on rearing scale. The data shows that as the number of livestock increases, farmers tend to make more profit per birds. It is important to note that the profits earned on broiler farming per birds of livestock may be influenced by the motivation of farmers, as it is a common source of livelihood for most surveyed farmers. The motivation for this enterprise is primarily driven by a sufficient level of revenue and the rapidity of turnover, as this business operates at a high velocity.

3.3 Analysis of Family Income/ Family Earning of Broiler Farmers

Table 4 displays that the respondent farmer families' average total income in West Lombok Regency, generated from chicken farming, has the most dominant contribution at 79.2% compared to their income from other businesses. The broiler livestock business has become the primary source of income for most of the respondent farmers in West Lombok Regency.

Table 4 Average income of broiler farmers families in West Lombok Regency per rearing period

No	Description	Scale I (2,000-5,000 birds)		Scale II (>5,000 birds)	
		Farmers/ period	%	Farmers/ Period	%
1	Broiler Income (IDR/US\$)	6,416,437/ 404.235	78.7	32,430,784/ 2,043.139	79,2
2	Food Crop Farming Income (IDR/US\$)	638,300/ 40.212	7,8	1,859,000/ 117.117	4,5
3	Other Income (IDR/US\$)	1,100,000/ 69.3	13.5	4,700,000/ 296.1	11.5
4	Livestock Business Income Apart from Broiler Chickens (IDR/US\$)	-	-	1,940,000/ 122.22	4,8
Total Family Income (IDR/US\$)		8,154,737/ 513.748	100	40,929,784/ 2,578.576	100

Source: Data processed in 2023

Table 5 Correlation between Net Income from Broiler Farming Business and Family Earning

Correlations			
		Net income	Family Income
Net income	Pearson Correlation	1	0.964 **
	Sig. (2-birds)		0.000
	N	15	15
Family Income	Pearson Correlation	0.964 **	1
	Sig. (2-birds)	0.000	
	N	15	15

**. Significant Correlation at the 0.01 level (2-birds).

Based on the calculation results, the correlation coefficient value is **0.964**. This indicates a strong positive relationship between the net income of the broiler farming business and the income of the family it supports. Thus, this broiler farming enterprise significantly contributes to the income of the West Lombok Regency respondent farmer's family.

3.4 Impact of Broiler contract Farming

Chicken farming is a business with significant social impacts, both positive and negative. According to Pangestu and Azizah [13], impacts refer to the influence or effects of decisions taken by superiors. These impacts can be either positive or negative.

Based on the study findings, Table 5 illustrates the social benefits of broiler farming in enhancing the well-being of farmers, with a positive impact observed. The evidence suggests that the establishment of this broiler has led to the development of a harmonious relationship between the farmers and the surrounding community, which has been maintained over time. Such a relationship implies a mutual dependence between the farmers' needs and those of the community. The link between farmers and the nearby community is apparent through the utilization of labor from the surrounding area. The mutual relationship formed between farmers and the local community has resulted in broiler chicken farms being welcomed without any direct opposition shown by the community, despite the associated environmental issues. The involvement of farmers who participate in all village development activities, places of

worship, and youth organizations also contributes to the widespread acceptance of this enterprise by the surrounding community.

The close relationship between farmers and the local community significantly depends on farmers' participation in all village development activities, including the construction of physical and non-physical structures. Additionally, the provision of job opportunities for the local community has facilitated the acceptance of the broiler chicken industry without opposition, thereby preventing any adverse impact on the sustainability of the business. The livestock business is widely accepted in the local community due to the strong bonds established since its inception. The broiler chicken farm is not seen as a nuisance, but rather as a source of benefits and contributions. According to Pranowo [14] and Sedana et al. [15], there exists in society a close-knit family system, which is governed by traditions and social norms. This system not only relies on mutual influence and interdependence in their behavior, but also on patterns of interaction that tend to persist.

Broiler farming's impact on farmers welfare can be observed in Table 5.

Table 6 Social impact of broiler contract farming

No	Parameter	Indicator	Percentage (%)
1	Broiler farming on family health	Farmers who go to the doctor / health center	60
		Farmers who seek treatment at the health center/traditional healer	40
		Farmers who seek treatment at traditional healers	0
2	Broiler farming on children's education	Farmers who continue their children's education	60
		Farmers delaying children's education	0
		Farmers who do not continue their children's education	6,7
3	Broiler farming on the housing conditions of farmers	Farmers' housing conditions are better after raising broiler chickens	40
		There is no change in the housing conditions for farmers after raising broiler chickens	60
		Farmers' housing conditions are worse after raising broiler chickens	0
4	Broiler farming on relations with neighbors	Farmers relations are more harmonious after raising broiler chickens	46,7
		There is no change in the relationship between farmers after raising broiler chickens	53,3
		The relationship between farmers is less harmonious after raising broiler chickens	0
5	Broiler farming in participating in the activities of the surrounding community	Farmers are actively involved in community activities after raising broiler chickens	86,7
		Farmers are less involved in community activities after raising broiler chickens	13,3
		Farmers are not involved in community activities after raising broiler chickens	0
6	Broiler farming in employment	Farmers involve workers from the surrounding community	60
		Farmers involve workers from the surrounding community and family members	0
		Farmers involve labor from family members	40

Source: Data processed in 2023

4 Conclusion

Net income for partnership pattern broiler farming businesses in West Lombok with a scale I averaged at IDR/US\$ 6.416.437/404.235 per period. Meanwhile, for scale II, it averaged at IDR/US\$ 32.430.784/2,043.139. The average total family income of broiler farmers in scale I was IDR/US\$ 8.154.737/513.748 per harvest period, while scale II earned an average of IDR/US\$ 40.929.784/2,578.576 per harvest period, contributing to 80% in scale I and 81% in scale II. The correlation coefficient of 0.964 between net income from broiler farming and family income indicates that broiler farming significantly contributes to the respondent farmers' family income. The welfare of respondent farmers is positively impacted by broiler farming. It can be concluded that the local community in West Lombok Regency welcomes broiler farming without any direct objections.

Suggestion

For future researchers, this study can serve as a point of reference for further development by incorporating a literature review and a theoretical framework, should they wish to pursue further research on the same area.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

- [1] Dananjaya, IGAN 2020. The Effect of Goat Livestock Integration and Coffee Plants on the Income of the Amerta Animal Farmer Group, in Mundeh Village, Selemadeg Barat District, Tabanan Regency. DwijenAGRO Journal, Vol. 10. Number 1.
- [2] Wijayanto. N., Z. Fanani and BA Nugroho. 2014. Analysis of Financial Performance of Broiler Farms Between Partnership Patterns and Independent Patterns (Case Study in Jombang Regency). Livestock Journal. Faculty of Animal Husbandry, Brawijaya University. <http://fapet.ub.ac.id>
- [3] Mahyudi, F and Husinsyah. 2019. The role of broiler farming in PT Ciomas Adi Satwa plasma on farmer income (Case Study in Sarang Halang Village, Pelaihari District, Tanah Laut Regency, South Kalimantan Province). Ziraa'ah 44(1) : 28-35
- [4] Yassir, M and Hilmi. 2020 Analysis of the Production Function of Broiler Chickens (Case Study in Singaparna District, Tasikmalaya Regency) . Thesis, Siliwangi University.
- [5] Central Bureau of Statistic, 2022. West Nusa Tenggara Province in Figures, <https://ntb.bps.go.id/publication/2023/02/28/4be8aa62e831b61d13521816/provinsi-nusa-tenggara-barat-dalam-angka-2023.html>
- [6] Sugiyono, 2014. Understanding Qualitative Research. Alpha Beta Publisher: Bandung
- [7] Siregar, Sofyan. 2017. Parametric Statistics for Quantitative Research. Jakarta: PT. Bumi Aksara
- [8] Wahid S. 2012. Population Growth Factors. <http://rakangeography.blogspot.com> . Retrieved August 2016.
- [9] Karmila. 2013. Factors that determine the farmer's decision making in starting a laying hen business in Bissappu district, Bantaeng regency. Faculty of Animal Husbandry, Hasanuddin University. Makassar
- [10] Sari, AI 2014. Profit Analysis of Laying Chicken Farms in Mattiro Bulu District, Pinrang Regency. Faculty of Animal Husbandry. Hasanuddin University. Makassar.
- [11] Rahman, Bayanur. 2017. Financial Analysis of Salted Egg Business in West Lombok. Thesis. Mataram University
- [12] Wati, et al. 2010. Analysis of Factors that Influence Chicken Farmer's Income Laying Breeds in Lareh Sago Halaban District, Lima Regency, 50 Cities. Animal Science. Andalas University. Padang
- [13] Pangestu, DS and S. Azizah. 2022. Socio-economic impacts of micro- scale free- range chicken farming in Payaman Village, Nganjuk. Journal of Social Science Education. 14(1): 31-39.
- [14] Pranowo, D. 1985. Public Village (Review Sociology). Surabaya : Build Knowledge
- [15] Sedana, G. I GAAAmbarawati, and W. Windia. 2014. Strengthening Social Capital for Agriculture Development: Lessons from Guama, Bali, Indonesia. Asian Journal of Agriculture and Development .11 .2: 39-50.