



# Farmers Response to the Partnership System in Broiler Chicken Livestock Business in East Lombok District

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**Abstract:** This study aims to describe the response of farmers, and to analyze the correlation between selected characteristics of farmers and farmers' responses to the partnership system in broiler chicken farming businesses in East Lombok Regency, West Nusa Tenggara Province. The study was conducted from April to July 2021 using a descriptive-correlational method. In this study, 30 plasma farmers were selected as respondent samples using proportional random sampling. Measurement of variables, both independent variables and dependent variables, was carried out using an ordinal scale and a scoring system. Data analysis was carried out descriptively and using the Spearman Rank correlation statistical test. The results of the study showed that farmers' responses to the partnership system in broiler chicken farming businesses generally included good or positive criteria, and the correlation between several selected characteristics and farmers' responses varied from weak to strong. Two characteristic variables that were strongly correlated with farmers' responses to the partnership system in broiler chicken farming businesses were education level ( $p < 0.01$ ) and partnership motivation ( $p, 0.05$ ).

**Keywords:** Broiler; Core-plasma; Partnership; Response

## Introduction

Broiler chicken is one of the businesses that is full of turmoil and risk (Yasin, 2021). Almost every year there is a price fluctuation with different intensity and always puts farmers in a vulnerable position. The cycle of volatility usually begins with an increase in the price of production facilities or livestock production inputs and is often followed by a decrease in the selling price of livestock products. The increase in the price of production inputs not only triggers an increase in production costs, but also reduces the income of farmers to below the break-even point threshold. The prolonged decline in farmer income causes farmers to stop their business. This results in a decrease in demand for DOC (day old chicken) and causes the supply of products (chicken meat) to decrease, so that supply is lower than demand (Chibanda et al., 2022; Rasyaf, 2012).

The instability of the broiler agribusiness has caused the decline in chicken farming businesses, especially smallholder farms (Gill et al., 2021; Nurahmi & Zalizar, 2021; Truong et al., 2021). One way to overcome this problem is to implement a partnership system that considers the principles of mutual need, mutual strengthening and mutual benefit (Ulfa et al., 2021). This is also stated in Law No. 18 article 31 paragraph 1, that farmers can enter into business partnerships in the field of livestock cultivation based on mutually beneficial and fair agreements. Further explained in article 2 of Law No. 18 of 2009, that business partnerships can be carried out with livestock companies.

In the partnership system, large companies (as the core) provide inputs such as DOC, feed and medicines, while farmers (as plasma) provide cages and equipment and labor for chicken maintenance until harvest (Batoa et al., 2023; Effendi et al., 2023; Kalangi et al., 2021). With

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the partnership, it is expected to be able to overcome the problems faced by farmers, especially small farmers, such as capital, knowledge of maintenance management, and marketing of results (Onifade et al., 2021).

Today, broiler chicken farming businesses with a partnership system have spread widely throughout Indonesia, including in the Province of West Nusa Tenggara (NTB). This is because, in addition to broiler chicken meat being popular with all levels of society, broiler chickens also have several advantages compared to other livestock, such as having a very fast growth rate and a relatively short harvest age of between 32-35 days with quite large profits (Ramathithi, 2020).

In NTB Province, various companies (PT) have developed their businesses by partnering with smallholder farmers. One part of the NTB Province where many people (smallholder farmers) have established partnerships with companies in broiler chicken farming is East Lombok Regency. An interesting thing to study comprehensively is, how do farmers (as plasma) respond to the partnership system in broiler chicken farming businesses? The next question is, how is the relationship between several selected characteristics and farmers' responses to the partnership system in broiler chicken farming businesses in East Lombok Regency?

In accordance with the main problem above, this study was conducted with the aim of: describing farmers' responses to the partnership system in broiler chicken farming businesses, and analyzing the correlation between several selected characteristics and farmers' responses to the partnership system in broiler chicken farming businesses in East Lombok Regency.

The results of this study are expected to be used by the local government as a consideration in determining policies related to company operational patterns, especially companies engaged in broiler chicken farming businesses with a partnership system. Furthermore, for entrepreneurs, the results of this study can be used as reference material in preparing a partnership agreement/contract by paying more attention to aspects related to the rights and obligations of each party proportionally; and specifically for farmers, as evaluation material for their performance in running a broiler chicken farming business with a partnership system. In addition, the results of this study are also expected to enrich existing information/data for the development of theories or knowledge related to livestock, especially broiler chicken farming. In this regard, for researchers who want to conduct similar studies elsewhere, the results of this study can be used as reference material.

## Method

### *Research Design*

This research was designed as a combination of descriptive research and correlational research (descriptive-correlational) as stated by Masithoh et al. (2016). This research method is considered appropriate to study the response of farmers, and the correlation between several selected characteristics with the response of farmers to the partnership system in broiler chicken farming businesses.

This research was conducted in East Lombok Regency, NTB Province for four months, namely from April to July 2021. Based on the data and information that was successfully collected, there are several large companies (PT) that have established partnerships with smallholder farmers by developing the same partnership system, namely the core-plasma pattern, with the company acting as the core and the farmers as plasma. Based on this fact, it was decided to choose a more specific study object, namely limited to farmers who have had experience as plasma farmers for at least one year, with the hope that these plasma farmers are able to provide an objective response to the partnership system in broiler chicken farming businesses in East Lombok Regency.

### *Sample Location and Respondent Determination Technique*

Farmers who have one year or more experience as plasma farmers in broiler chicken farming partnerships are almost spread across all sub-districts in East Lombok Regency. However, in this study, only three sub-districts were determined as sample locations purposively by considering the number of farmers involved as plasma farmers, namely Masbagik District, Wanasaba District, and Aikmel District. The population of plasma farmers in the three sample sub-districts is 58 people, and for the purposes of this study, 30 sample farmers or 52 percent of the population were taken using proportional random sampling.

### *Data Collection Technique*

In this study, two types of data were collected, namely primary data and secondary data. Primary data were collected using the interview method, both structured interviews and unstructured interviews (Sugiyono, 2016). In addition to interviews, researchers also conducted direct observations at the location of the respondent farmers' farms in order to directly see the conditions, activities, and daily handling methods of livestock by farmers.

## Results and Discussion

### Overview of Broiler Chicken Partnership System

The partnership established between companies and farmers in East Lombok Regency is a core-plasma pattern or system. In this partnership system, the company acts as the core, while the farmers act as plasma. The core party is obliged to provide production facilities (seeds, feed, medicines and vaccines), and provide technical guidance, both on a scheduled and incidental basis, especially for plasma farmers who have just been recruited as business partners; while the plasma party is obliged to prepare cages, equipment and labor/maintenance. Specifically for cages, plasma farmers are expected to build cages that are sturdy enough using standard materials so that they can be used for a long period of time (Xu et al., 2022). In addition, the cage has a minimum capacity of 2000 chickens.

In its implementation, the core and plasma parties are bound by a contract which also acts as an SOP (Standard Operating Procedure). The substance of the contract consists of four main points, namely determining the number of production facilities that will be dropped off to plasma farmers, determining the price of production facilities, determining the harvest time and determining the harvest price or contract price.

### Characteristics of Respondent Farmers

**Table 1.** Characteristics of Respondent Farmers

Characteristics	Amount (persons)	Percentage (%)
Breeder Age (Years)		
21-30	5	17
31-40	14	46
41-50	11	37
Level of education		
Elementary school	2	7
Junior High School	3	10
Senior High School	11	37
Bachelor	14	46
Experience as Plasma (Years)		
1-5	17	57
6-10	11	37
>10	2	6
Number of Family Dependents (Persons)		
1-2	11	37
3-4	15	50
>4	4	13
Partnership Motivation		
Main Business Motive	12	40
Side Business Motive	18	60
Hobby Motive	-	-

The characteristics of respondent farmers observed in this study include age, education level, farming experience, number of family dependents, and farmer motivation to raise broiler chickens. The characteristics of respondent farmers are shown in Table 1.

### Age of Respondent Farmers

All respondent farmers are still in their productive age, which is between 21-50 years or an average of 38 years. Of the 30 respondent farmers interviewed, 46 percent of them are in the 31-40 year age group, followed by farmers aged 41-50 years (37%) and farmers aged 21-30 years (17%). Age level is one of the factors considered by entrepreneurs (core) in selecting farmers who will be recruited as business partners in the field. Entrepreneurs (large or core farmers) prioritize farmers aged between 15-60 years, where the age range is included in the productive age category. This is in line with the opinion of Harmadi et al. (2009) which states that the productive age in Indonesia ranges from 15-64 years.

### Education Level of Respondent Farmers

All farmers who are members of the broiler chicken farming business partnership in East Lombok Regency have undergone formal education, even most of them graduated from high school (37%) and graduated from college or university (46%). The rest graduated from elementary school (7%) and graduated from junior high school (10%).

The biographical data of farmers as above can be a guarantee that they will easily communicate with core parties and other parties (Janssen et al., 2017), such as government officers (especially PPL), market players, and also with fellow plasma farmers. In addition, with an average level of education that is quite high, farmers will be able to properly record all important matters related to their chicken farming business.

### Experience as Plasma Farmers

The farmers who were respondents in this study were farmers who had experience as plasma farmers for at least one year. This was intended so that the validity of their responses regarding the partnership system that had been and was being implemented could be accounted for in terms of objectivity.

Based on the results of the interviews that have been conducted, it can be seen that the range of experience of the respondent farmers as plasma farmers ranges from one to 10 years or more with details: 57 percent who have 1-5 years of experience, 37 percent who have 6-10 years of experience, and 6 percent who have experience as plasma farmers for more than 10 years. With this range of experience, it is believed that the farmers already understand all the ins and outs of the broiler chicken farming business, as well as things

that are directly related to the core party in their position as the first party in the chicken farming business partnership system that they run together.

*Number of Family Dependents*

The family dependents referred to in this study are all people who live in the respondent farmer's family and are fully the responsibility of the head of the family, such as wife and children (nuclear family) and other people (contiguous family). Table 1 shows that as many as 50 percent of plasma farmers have family dependents of between 3-4 people. The rest consists of 37 percent of farmers who have family dependents of 1-2 people and 13 percent of farmers with family dependents of more than 4 people. For farmers who have family members who are able to work, they will generally be involved in managing their chicken farm business, so they do not need to employ outside family labor or wage labor. Based on the data that can be collected, 86.67 percent of farmers fully use family labor and only 13.33 percent of farmers use outside family labor or wage labor.

*Partnership Motivation*

Based on the results of interviews with the farmers who were respondents, it can be revealed that their motivation to get involved in broiler chicken farming partnerships is solely as a source of income for their families. Table 1 shows that 40 percent of farmers are involved in broiler chicken farming partnerships with the motive of a main business and 60 percent with the motive of a side business. This indicates that the partnership system in broiler chicken farming is quite promising in terms of profit. As a comparison, the results of a study by Yasin et al. in 2019 in West Lombok Regency, West Nusa Tenggara Province, can be presented, namely: for farmers who raise an average of 3,400 broiler chickens, they get an average profit of IDR 3,280/head per maintenance period; those who raise an average of 6,305 heads get an average profit of IDR 2,470/head per period; and those who raise an average of 11,000 heads obtain an average profit of Rp. 1,700/head per period.

*Farmers' Response to the Partnership System*

Partially, there are four aspects/elements that are the substance of the contract/agreement and also function as the basis for cooperation between the core party and plasma farmers, namely determining the number of production facilities, determining the price of production facilities, determining the harvest time, and determining the harvest price or contract price.

*Farmers' Response to Determination of the Number of Production Facilities*

A description of the plasma farmers' response to determining the number of production facilities is shown in Table 2.

**Table 2.** Farmers' Response to Determination of the Number of Production Facilities

Types of Production Facilities	Respondent Criteria (Pearsons)		
	Positive (Persons)	Neutral (Persons)	Negative (Persons)
Amount DOC	28 (93.33%)	2 (6.66%)	-
Amount of Feed	30 (100%)	-	-
Amount OVK	30 (100%)	-	-

Based on the results of interviews with 30 respondent farmers, it is known that the determination of the number of production facilities to be dropped to plasma farmers is carried out jointly by the core and plasma parties. Production facilities consisting of Day Old Chick (DOC), feed, Chemical Medicine and Vaccines (OVK), are variable production factors and are also the main production facilities in broiler chicken maintenance (Azizah, 2020; Firdaus, 2022). The number of DOCs to be received by plasma farmers is adjusted to the minimum that must be maintained by plasma farmers, which is 2,000. The results of the study showed that the number of chickens kept by plasma farmers varied between 2,000-14,000, with the majority of farmers (83.33%) keeping between 2,000-6,000.

The determination of the amount of feed that must be sent to plasma farmers is adjusted to the number of chickens kept. As in determining the number of DOCs, the determination of the amount of feed is also discussed jointly by the core and plasma parties.

In reality, determining the amount of feed is more precise than determining the number of DOCs. This is because the amount of feed consumed by chickens greatly affects the growth of the chickens, on the other hand the price of feed is quite expensive, which is between Rp. 8,000-Rp. 8,500 / kg, or an average of Rp. 8,250 / kg. While the need for 1 chicken from the DOC phase to ready for harvest (an average of 35 days) is between 2.5 - 2.7 kg or an average of 2.6 kg per chicken, with a price between Rp. 8,000-Rp. 8,400 / kg, or an average of Rp. 8,200 / kg.

In terms of determining the amount of Chemical Drugs and Vaccines (OVK), the core party adjusts it to the needs and health conditions of the chickens kept by the farmer. For example, the implementation of vaccinations is carried out on average three times in one maintenance period, and the implementation time has been scheduled at the beginning of the maintenance period (Tamalluddin, 2014). As for how many vaccines



are needed, it is adjusted to the number and age of chickens kept by the farmer.

*Livestock Farmers' Responses to Production Price Determination*

Table 3 shows the response of livestock farmers to the determination of livestock production input prices set by the core party.

**Table 3.** Livestock Farmers' Responses to Production Input Price Determination

Types of Production Facilities	Criteria Respondent		
	Positive (Persons)	Neutral (Persons)	Negative (Persons)
Price DOC	10 (33.33%)	20 (66.67%)	-
Feed Price	14 (46.67%)	16 (53.33%)	-
Price OVK	26 (86.67%)	4 (13.33%)	-

The determination of the price of production facilities, both DOC, feed, and OVK is entirely the authority of the core party, and generally there is no opportunity for farmers to negotiate (Saud et al., 2023). The determination of the price of production facilities received various responses from plasma farmers (Bourke et al., 2018), however, no farmers were found to disagree or respond negatively to the policy of determining the price of production facilities, although the farmers admitted that the determination of the price of the three types of production facilities was relatively higher on average compared to the prevailing market price. For example, the price of DOC set by the core is an average of IDR 7,500/head while the prevailing market price in the market is a maximum of IDR 7,000/head; the price of feed is set at an average of IDR 8,250/kg, the prevailing price in the market is less than IDR 8,000/kg; while the price of OVK is relatively the same as the prevailing price in the market. Especially for medicines, if the needs of farmers are relatively small, the core party usually provides them for free.

Based on the diversity of farmer responses to the elements that are the substance of the contract as described above, the overall response of plasma farmers is as seen in Table 4. Based on Table 4, it turns out that the majority of farmers gave a positive response to the determination of the number of all types of production facilities, the determination of the price of OVK and the determination of the harvest price or contract price (Alam et al., 2020). On the other hand, regarding the determination of the price of DOC, feed and the determination of the harvest time, the majority of farmers were neutral or silent (Duot, 2020). This indicates that in fact the farmers are dissatisfied with the policies taken by the core party. The farmers want all

aspects/elements that are elements of the contract to be discussed together first before being determined as a decision.

**Table 4.** Diversity of Farmer Responses to the Broiler Chicken Partnership System

Substance of the Contract	Criteria Respondent		
	Positive (%)	Neutral (%)	Negative (%)
Determination of the Number of Production Facilities:			
DOC	93.33	6.67	-
Feed	100	-	-
OVK	100	-	-
Determination of Production Facility Prices:			
DOC	33.33	66.67	-
Feed	46.67	53.33	-
OVK	86.67	13.33	-
Determining Harvest Time	43.33	56.67	-
Contract Pricing	80	20	-

*Correlation between Age and Farmer Response*

The results of the analysis using non-parametric statistical tools, namely the Spearman Rank correlation between age and farmer response to the partnership system in broiler chicken farming businesses, showed a negative correlation with a coefficient of  $r_s = -0.016$ . This means that the older a farmer is, the less good or more negative his response to the partnership system in broiler chicken farming businesses tends to be, but the tendency of this relationship is very weak. Thus, it can be stated that the age factor tends to have no relationship with the response shown by farmers to the partnership system in broiler chicken farming businesses.

*Correlation between Education Level and Farmer Response*

Like age, the level of education of farmers is also negatively correlated with farmer response, only the correlation tends to be strong with a coefficient of  $r_s = -0.542$ . This means that the higher the level of education of farmers, the less good or more negative their response to the partnership system in broiler chicken farming businesses tends to be, even the tendency is very significant ( $p < 0.01$ ). Table 1 shows that the level of formal education of most farmers (86.67%) is from high school to college. With a fairly high level of formal education, they are quite capable of criticizing things that they think are still unsatisfactory from the partnership system in broiler chicken farming. This is in line with Fuhrman et al. (2020), that education is closely related to a person's ability to maintain and implement new innovations that are recommended. People who are highly educated tend to be more able to think and act rationally and have a responsive attitude towards new things that are recommended.

### *Correlation between Experience as Plasma and Farmer Responses*

Table 1 shows that most (57%) plasma farmers are newcomers to broiler chicken farming partnerships with an experience range of 1-5 years. However, with this relatively short experience, they are quite capable of responding to the good and bad of the partnership system they are running. The results of statistical analysis with Spearman Rank correlation show that, experience as plasma in broiler chicken partnerships is negatively correlated with their response to the partnership system they are running with a coefficient of  $r_s = -0.323$ . This means that the longer a farmer is involved in a broiler chicken business partnership, the more their response tends to be less good or negative.

### *Correlation between the Number of Family Dependents and Farmer Responses*

The large number of family dependents owned by a farmer, on the one hand, has a negative impact on the size of the family's economic burden, but on the other hand, it is actually a blessing for the farmer concerned, especially if the family members are able to use their energy to manage the broiler chicken farming business that they are engaged in. Table 1 shows that as many as 50 percent of farmers have family members between 3-4 people. Based on the results of interviews with farmers, it can be seen that 86.67 percent of farmers utilize the energy of family members in raising chickens, and only 13.33 percent of farmers use outside family labor or wage labor.

The results of statistical analysis with Spearman Rank correlation show a positive relationship between the number of family dependents and the farmer's response to the partnership system with a coefficient of  $r_s = 0.05$ . Although the correlation tends to be very weak and non-significant ( $p > 0.05$ ), the existence of partnerships in broiler chicken farming businesses is very meaningful for some farmers, even 40 percent of farmers make it their main business.

### *Correlation between Partnership Motivation and Farmer Response*

In the Big Indonesian Dictionary, it is stated that motivation is an urge that arises within a person consciously or unconsciously to carry out an action with a certain purpose (Ministry of National Education, 2008). Table 1 shows that the motives of plasma farmers who are involved in broiler chicken farming partnerships, 40 percent of farmers make it their main business and 60 percent of farmers make it a side business.

The results of non-parametric statistical analysis with Spearman Rank correlation show that there is a positive correlation between partnership motivation and farmer response with a correlation of  $r_s = 0.445$ . This

correlation tends to be strong and significant ( $p < 0.05$ ), which means that the higher the partnership motivation in farmers, the better their response to the partnership system in broiler chicken farming businesses. This is because the farmers feel they benefit from their involvement as partners in the broiler chicken business, and do not even hesitate to make it their main business or a side business.

## Conclusion

Based on the results of the study on farmers' responses to the partnership system in broiler chicken farming businesses in East Lombok Regency, the following conclusions can be drawn: farmers' responses to the partnership system in broiler chicken farming businesses in East Lombok Regency are generally included in the good or positive criteria; and the correlation between several selected characteristics and farmers' responses varies from weak to strong; two characteristic variables that are strongly correlated with farmers' responses to the partnership system in broiler chicken farming businesses are education level ( $p < 0.01$ ) and partnership motivation ( $p < 0.05$ ).

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## Conflicts of Interest

The authors declare no conflict of interest.

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