JPPIPA 10(Special Issue) (2024)

Jurnal Penelitian Pendidikan IPA

Journal of Research in Science Education

http://jppipa.unram.ac.id/index.php/jppipa/index

Plasma Livestock Participation Level in Patterns of Broiler Partnership in West Lombok District

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Received: April 21, 2024
Revised: July 09, 2024
Accepted: August 25, 2024
Published: August 31, 2024

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DOI: 10.29303/jppipa.v10iSpecialIssue.8461

Abstract: This research aims to determine the characteristics of plasma farmers, the level of participation of plasma farmers, and the correlation between the characteristics and the level of participation of plasma farmers in partnership pattern broiler chicken farming businesses in West Lombok Regency. Three sub-districts in West Lombok Regency, namely, Gerung Sub-district, Lingsar Sub-district and Sheet Sub-district were chosen as sample locations purposively, taking into account that there were breeders who had at least two years of experience as plasma breeders in the partnership pattern broiler chicken farming business. All plasma breeders who met these requirements, namely 18 people, were taken as respondents. Primary data collection was carried out using interviews and direct observation at the location of the farmer's farm. The collected data was analyzed using a scoring system and the Spearman Rank correlation statistical test. The results of the research show that the level of farmer participation in the partnership pattern broiler chicken farming business is classified as moderate, and the correlation of characteristics with the level of farmer participation, only the number of family dependents and the experience factor as a plasma farmer are significant ($p<0.05$) with a correlation coefficient (rs) -0.656 and 0.567 respectively.

Keywords: Broiler; Participation level; Plasma livestock

Introduction

Broiler chicken meat is increasingly popular among people, not only in urban areas but also in all corners of rural Indonesia (Fanjabara et al., 2024; Wilcox et al., 2024). Apart from being tender and delicious, the price of broiler chicken meat is also much cheaper than the price of beef, goat meat or buffalo meat. The passion of all levels of society for broiler chicken meat is an opportunity that must be exploited by breeders to develop their livestock business in a more modern and large-scale direction so that they can compete with other breeders. So far, the broiler chicken farming business is not only carried out by individual farmers on a small scale, but is also carried out by livestock companies on a much larger business scale. As a result, supply often becomes excessive and the selling price of chicken meat falls below production costs. Therefore, in order to increase the scale of their livestock business to a larger one, supported by the ability to provide cage facilities and equipment, many smallholder farmers choose to partner with large livestock companies using a core-plasma partnership pattern (Hidayat et al., 2023).

In the core-plasma partnership pattern, each partnering party will gain reciprocal benefits, in accordance with the mutually agreed contract/agreement (Respati et al., 2020). Benefits for the core: can improve and develop the broiler chicken farming business without investing in cages which require high costs; and can expand the market for livestock production facilities. Meanwhile, plasma farmers: can utilize non-productive land; can try to raise broiler chickens even though they only have labor; can make a profit, increase income and improve family welfare (Ardi, 2022; Suwarta & Hanafie, 2021). Therefore, in implementing the partnership pattern, one

How to Cite:
Yasin, M., & Nugroho, M. P. (2024). Plasma Livestock Participation Level in Patterns of Broiler Partnership in West Lombok District. *Jurnal Penelitian Pendidikan IPA*, *10*(SpecialIssue), 413–420. https://doi.org/10.29303/jppipa.v10iSpecialIssue.8461

must pay attention to the principles of mutual need, mutual reinforcement and mutual benefit. This is also mentioned in Law no. 18 article 31 paragraph 1, that breeders can enter into business partnerships in the field of livestock cultivation based on mutually beneficial and fair agreements. It is further explained in paragraph 2 of Law no. 18 of 2009, that business partnerships can be carried out with livestock companies.

In a partnership system, large companies provide inputs such as DOC (Day Old Chicken), feed and medicine, while the breeders provide cages and equipment as well as labor for raising chickens until harvest. With partnerships, breeders are expected to be able to overcome the problems they face such as capital, limited knowledge, maintenance management and product marketing (Pramita et al., 2017).

A phenomenon seen today, partnership pattern broiler chicken farming businesses have spread widely throughout the country, including in West Nusa Tenggara (NTB) Province. Various large companies have developed their businesses by collaborating with farmers/breeders as partners, especially breeders who are able to provide cages and equipment, as well as skilled labor.

NTB Province is one of the regions in Eastern Indonesia that has great potential for developing a partnership pattern broiler chicken farming business, considering the public's interest in raising broiler chickens and the increasing need for chicken meat. One part of the NTB Province where many people already cultivate broiler chickens in a partnership pattern is West Lombok Regency.

In West Lombok Regency there are several companies (PT) that have established partnerships with local farmers in the broiler chicken farming business using a nucleus-plasma partnership pattern. Based on the data and information that has been collected, from the 10 sub-districts in West Lombok Regency, breeders who act as plasma breeders are spread across almost all sub-districts, consisting of both experienced breeders and beginner breeders.

Success in the broiler chicken farming business with a partnership pattern will be determined by several factors, for example the managerial ability of the company, good relations between the company as the core and the farmers as plasma, the ability of plasma farmers to manage their farms, the compliance of both partnering parties in complying with the contents of the agreement, stated in the contract, etc (Fitriza et al., 2012). In other words, it can be stated that the involvement or active participation of both parties involved in each element of the activity stated in the contract will help determine the goal to be achieved, namely obtaining adequate profits.

Based on the main ideas above, this research aims to determine: the characteristics of plasma farmers; the level of participation of plasma farmers; and the correlation between the characteristics and the level of participation of plasma farmers in partnership pattern broiler chicken farming businesses in West Lombok Regency.

It is hoped that this research can holistically describe the level of plasma farmer participation in the partnership pattern broiler chicken farming business in West Lombok Regency, so that it can provide significant benefits for the government, companies and breeders.

For the government, the results of this research can be used as material for consideration in determining policies relating to company operating patterns, especially companies engaged in the broiler chicken farming business with a partnership pattern; for entrepreneurs, as reference material in drafting partnership agreements/contracts in a fairer manner; and specifically for plasma farmers, as an evaluation material for their performance in running a partnership pattern broiler chicken farming business.

Apart from that, it is also hoped that the results of this research can enrich existing information/data for the development of theory or science related to animal husbandry, especially broiler chicken farming. In this regard, for researchers who wish to conduct similar studies in other places, the results of this research can be used as reference material.

Method

Research Design

This research was designed as a combination of descriptive research and correlational research (descriptive-correlational) (Sudibya, 2013). This research method is considered appropriate for studying the correlation between several characteristics and the level of farmer participation in the partnership pattern broiler chicken farming business.

Preliminary research (pre-research) began in April 2020 in several sub-districts of West Lombok Regency, NTB Province. Based on the data and information collected, it turns out that several large companies (PT) that have established partnerships with rural breeders have developed almost the same partnership pattern, namely the nucleus-plasma pattern; the company acts as the nucleus and the breeders as plasma. Based on this fact, it was decided to choose a more specific study object, namely limited to breeders who have had experience as plasma breeders for more than one year, with the hope that the participation shown by these plasma breeders will be consistently patterned.

Sample and Respondent Location Determination Techniques

Farmers who have more than one year of experience as plasma breeders in the partnership pattern broiler chicken farming business are almost spread across 10 sub-districts in West Lombok Regency. However, in this study only three sub-districts were determined as sample locations, namely Gerung Sub-district, Lingsar Sub-district, and Sheet Sub-district. In the three sub-districts, 18 breeders were identified who had more than two years of experience as plasma breeders in the partnership pattern broiler chicken farming business. Furthermore, according to the census, all of the breeders (18 people) were designated as respondents.

Data Collection Technique

In this research, two types of data were collected, namely primary data and secondary data. Primary data was collected using interview methods, both structured interviews and unstructured interviews (Sugiyono, 2018). Apart from interviews, researchers also conducted direct observations at the location of the respondent farmer's farm to see directly the condition, activities and daily handling of livestock by the farmer.

Variables and How to Measure Them

The variables observed and measured in this research include two main variables, namely the characteristics of plasma farmers as the independent variable and the level of participation of plasma farmers in the partnership pattern broiler chicken farming business as the dependent variable.

Data Analysis

To determine the correlation between the characteristics and the level of participation of plasma farmers in the partnership pattern broiler chicken farming business, the Spearman Rank correlation statistical test was used (Siegel, 1990), with the Formula 1.

$$rs = 1 - \frac{6 \sum d_i^2}{n\,(n^2-1)} \quad (1)$$

Information:
rs = Correlation coefficient
di = Difference between ratings
n = Number of samples

Result and Discussion

Breeder Characteristics

The characteristics of respondent farmers observed in this study include the respondent's age, level of education, number of family dependents, scale of chicken farming business, farming experience, and motivation for farming (Table 1).

Table 1. Characteristics of Farmer Respondents in Broiler Chicken Farming Business Partnership Patterns

Observed Individual Characteristics	Frequency	
	Amount	Percentage %
Age		
High productive age (29-37 years)	6	33.33
Medium productive age (38-46 years)	9	50.00
Low productive age (47-55 years)	3	16.67
Education Level		
College Graduate	4	22.22
High School Graduate	3	16.67
Junior High School Graduate	1	5.56
Elementary School Graduate	4	22.22
Never attended school	6	33.33
Number of Family Dependents		
Small (1-2 people)	5	27.78
Medium (3-4 people)	11	61.11
Large (>4 people)	2	11.11
Broiler Chicken Business Scale		
Small (2,000-4,000 heads)	5	27.78
Medium (4,000-6,000 heads)	6	33.33
Large (6,000-10,000 heads)	7	38.89
Experience of Farmers as Partners		
Less experienced (<5 years)	5	27.78
Quite experienced (5-10 years)	6	33.33
Experienced (>10 years)	7	38.89
Farmers Motivation		
As a hobby	-	-
As a side job	13	72.22
As a main job	5	27.78

Age

Age is one of the geographic characteristics that tends to influence a person's biological and physiological functions. Empirical facts show that farmers who are older (over 64 years) tend to be static, both in terms of studying to gain new learning experiences and in terms of activities to increase family income. Very different from breeders who are still of productive age, the willingness to learn to improve their knowledge and skills in managing their livestock business tends to be higher compared to breeders who are older (Sasoeng et al., 2020).

Level of Education

Education level is one of the most important characteristics a farmer has. The higher a person's level of education, the better their mindset and the broader their insight (Mills et al., 2017; Parr & Trexler, 2011). A person's knowledge, skills, thinking power and productivity are influenced by the level of education they have received. In general, the higher the level of education you have, the higher your productivity. This is because people with higher education are more

rational in thinking than people with low education, most of whom have difficulty accepting new innovations and are relatively indecisive in making decisions.

Number of Family Dependents

In terms of number of family dependents, the majority (71.42%) of respondents belonged to the middle family category (3-4 people). The number of family members will influence the farmer in making decisions, because the greater the number of family dependents, the greater the burden of life that a farmer must bear. The number of family dependents is one of the economic factors that needs to be considered in determining income to meet their needs (Sumbayak, 2006).

Broiler Chicken Business Scale

The scale of a broiler chicken business is one of the important characteristics a farmer has, because the more livestock he has in his business, the higher the motivation a farmer has. Based on the results of interviews with 14 respondents, 42.87% of them had a relatively large broiler chicken business scale (>6,000-10,000 birds). On the other hand, 28.57% of the scale of broiler chicken cultivation is classified as small (2,000-4,000 birds) and medium (>4,000-6,000 birds).

Farmer's Experience as a Plasma Breeder

Breeding experience is what underlies a person's development and greatly influences the success of his business. Experienced breeders will be more skilled and tend to produce better results compared to breeders who have no or less experience (Nisbet et al., 2020). Based on the results of interviews with 14 respondents, it turned out that 42.87% were quite experienced (5-10 years), and 28.57% were less experienced (<5 years) and experienced (>10 years), respectively.

Motivation of Breeders to Become Plasma Breeders

A person's motivation depends on the strength of the person's own determination. This drive is what causes a person to achieve his goals and causes a person to behave in a way that can control the activities he undertakes (Silbergeld, 2016; Webster & Margerison, 2022). Based on Table 1, it can be seen that 64.28% of respondents raise chickens as a side job and 35.71% as their main job. There are still many respondent farmers who use broiler chicken farming as a side job, indicating that farmers do not fully rely on broiler chicken farming as their main source of livelihood. Status as a partner breeder apparently tends to make breeders behave statically, in the sense that breeders only carry out the business of raising broiler chickens in accordance with the direction or guidance from the core company.

Farmer Participation Level

The level of farmer participation in the partnership pattern broiler chicken farming business is as shown in Table 2.

Table 2. Level of Farmer Participation in Partnership Pattern Broiler Chicken Farming Business

Observed Participation Aspects	Frequency	
	Amount	Percentage %
Contract Preparation		
High (always participate)	-	-
Medium (rarely participate)	-	-
Low (never participate)	18	100
Determination of the Number of Production Facilities		
High (always participate)	10	27.78
Medium (rarely participate)	3	16.67
Low (never participate)	5	55.55
Determination of Production Facilities Price		
High (always participate)	-	-
Medium (rarely participate)	-	-
Low (never participate)	18	100
Determination of Contract Price		
High (always participate)	-	-
Medium (rarely participate)	-	-
Low (never participate)	18	100
Determination of Harvest Time		
High (always participate)	9	27.78
Medium (rarely participate)	4	22.22
Low (never participate)	5	50.00

Participation in Contract Preparation

Based on Table 2, it can be seen that the participation of plasma breeders in drafting contracts in broiler farming businesses with a partnership pattern is entirely (100%) in the low category, in the sense that the breeders are never involved at all in drafting contracts. The contract preparation is completely prepared by the company (core), then socialized to plasma farmers. In general, the contract contains important matters which include cooperation agreements, work procedures, price determination for production facilities and contract/harvest price determination.

Participation in Determining the Number of Production Facilities

Livestock production facilities consist of DOC, feed and medicine (Djumadil & Syafie, 2020; Sehabudin et al., 2022), which the plasma farmer will receive from the company (core). The number of production facilities that will be handed over to the breeder is preceded by negotiations between the two parties, then culminates in a mutual agreement. This means that the core party opens the widest possible space for plasma breeders to participate actively. However, based on interviews with 18 respondents, 55.55% of respondents never

participated or were not involved at all, then 16.67% of respondents participated moderately or were rarely involved and 27.78% of respondents participated highly or were often involved in determining the number of production facilities that will be received from the company (core).

Participation in Pricing of Production Facilities

The level of participation of farmers in determining the price of production facilities is entirely (100%) included in the low category, meaning that they are never involved at all in determining the price of production facilities. The price of production facilities has been determined by the company and is stated in the contract that has been approved by the farmer (Putri & Rondhi, 2020). This can be understood because production facilities are a source of profit for the core party, apart from the price of the chicken harvest. Therefore, the price set by the core party is slightly more expensive than the general price prevailing in the market, namely with a price difference of IDR 500/head for DOC and IDR 400/kg for feed.

Participation in Contract Pricing

As in determining prices for production facilities, breeder participation in determining contract/harvest prices, 100% of respondents indicated the low category. This is because the contract/harvest price is completely determined by the company (core) and is stated in the contract agreed upon by the farmer. In determining the contract/harvest price, the company remains based on the prevailing market price. However, if there is an increase in market prices, the company will confirm this to the breeders, and the company will give a bonus (profit share) to the breeders of 30% of the total profits obtained as a result of the increase in market prices.

Participation in Determining Harvest Times

Based on the contract, chickens will be harvested after five weeks (35 days) of age. However, the company provides farmers with the opportunity to harvest early when the chickens are ready to be slaughtered. In this regard, 27.78% of respondents are in the high participation category, 22.22% are in the medium category and 50% are in the low category. This indicates that in the event that the harvest time is decided jointly by the breeder and the company, although it is not uncommon, the company determines the harvest time itself in accordance with what is stated in the contract.

Relationship between Characteristics and Farmer Participation Level

The results of the Spearman Rank Correlation analysis regarding the relationship between characteristics and the level of farmer participation in broiler chicken farming business partnerships are presented in Table 3.

Table 3. Relationship between Characteristics and Level of Participation of Farmers in Partnership Pattern Broiler Chicken Farming Business

Characteristics	Participation Level (Correlation Coefficient Value)	Information
Age	-0.137	Ns
Education level	0.377	Ns
Number of family dependents	-0.656*	Significant
Scale of business	0.488	Ns
Livestock experience	0.567*	Significant
Livestock motivation	0.019	Ns

Age by Level of Participation

Between age and the participation level of plasma farmers in the partnership pattern broiler chicken farming business, shows a negative relationship with a coefficient of rs = -0.137. This means that the older the breeder, the lower the level of participation in broiler chicken business partnerships, but this relationship is not significant. This may be caused by many factors, for example the status of the business as only a side business, farmers' too high dependence on the core, and even because the number of respondents is relatively small so they are relatively homogeneous, both in terms of age and level of participation.

Education Level with Participation Level

The level of education and participation level of breeders shows a positive relationship with a coefficient of rs = 0.377. This means that the higher the level of formal education of farmers, the higher the level of participation in broiler farming business partnerships tends to be. In Table 1, it can be seen that the majority of respondents have had formal education, starting from completing elementary school, some even reaching university.

Number of Family Dependents by Participation Level

Between the number of family dependents and the level of participation, it shows a negative relationship with a coefficient of rs = -0.656, and this relationship is significant. This means that the higher the number of family dependents, the lower the level of farmer participation in broiler farming partnerships, because almost all farmers use labor from outside the family or hired labor. These workers, whom breeders call "kennel boys", are fully responsible for handling all technical activities on the farm, from providing feed and water to the livestock to cleaning the pens and equipment. Meanwhile, breeders mostly position themselves as managers with the main task of supervising the work of

the stable children and being responsible for the company/core.

Relationship between Chicken Farming Business Scale and Participation Level

The relationship between livestock cultivation and the level of farmer participation is positive with a coefficient of rs = 0.488. This means that the larger the scale of broiler farming, the higher the level of farmer participation (Bannor & Gyekye, 2022; Rondhi et al., 2020). However, this relationship is non-significant, meaning there is a maximum limit to the number of livestock that can be managed well by farmers, especially if the livestock business is only a side business.

Experience as a plasma farmer with Participation Level

The farming experience factor shows a positive and real relationship with the level of farmer participation, with a coefficient of rs = 0.567. This means, the higher the farmer's experience as plasma, the higher the level of participation tends to be. This can be understood with long experience, the breeders will understand the ins and outs of partnerships enough, so that they are able to position themselves correctly, with the principles of mutual need, mutual strengthening and mutual benefit (Kurniawan et al., 2020; Queenan et al., 2021; Sartika et al., 2021).

Motivation as a plasma farmer with Participation Level

Based on the results of interviews with breeders, information was obtained that breeders always learn from their own experience and from other breeders in managing broiler chicken farming businesses using a partnership pattern. The results of the Spearman Rank Correlation analysis show that the relationship between motivation as plasma and the level of participation is obtained by a coefficient of rs = 0.019. However, this relationship tends to be weak, because in reality the majority of farmers (72.22%) run broiler chicken farming as a side business, not as a main business.

Conclusion

The characteristics of farmers in the broiler chicken farming business are as follows: (a) 50% of respondents aged 38-46 years (medium productive age), (b) 42.85% have not completed elementary school, (c) 71.42% have dependents family of 3-4 people, (d) 42.87% of breeders run 6,000-10,000 chickens, (e) 42.87% of breeders have 5-10 years of experience, and (f) 64.28% of breeders run a livestock business chicken as a side. The level of farmer participation in the broiler chicken farming business with an aggregate partnership pattern is included in the medium category. The correlation between characteristics and the level of farmer participation in the Broiler chicken farming business is: age has a negative correlation with participation level (rs= -0.137). The level of education has a positive relationship with the level of participation (rs = 0.377). The number of family dependents has a negative and significant relationship with the participation rate (rs = -0.656*). The scale of broiler chicken business has a positive relationship with the level of participation (rs = 0.488.) Breeding experience has a positive and significant relationship with the level of participation (rs = 0.567*) and Motivation for raising livestock has a positive relationship with the level of farmer participation (rs = 0.019).

Acknowledgments

The researcher expressed his gratitude to the class V teacher and the Principal of SD Negeri Kemijen 02 Semarang City for providing the opportunity to conduct research for the purposes of the final S1 project. The author would like to thank Mrs. Aldina Eka Andriani, S.Pd., M.Pd. for guiding in writing this article.

Author Contributions

This article was prepared by two authors, namely M.Y and M.P.N. All members work together in carrying out each stage.

Funding

This research was independently funded by researchers.

Conflicts of Interest

This research was independently funded by researchers.

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