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## Farmers' Satisfaction of the Service Quality of Broiler Contract Farming Model in Banyumas Regency

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### ABSTRACT

This study aims at identifying nucleus companies' service quality, broiler farmers' satisfaction and the relationship between contract farming services quality and broiler farmers' satisfaction in Banyumas Regency. The study takes survey method to broiler farmers participating in contract farming programs from five nucleus companies in Banyumas Regency as its population. 50 broiler farmers are selected using the proportional random sampling method based on Slovin formula as respondents. The data obtained are analyzed by employing descriptive statistics and Correlation Rank Spearman Analysis. The results show that the farmers are averagely 44 years old with mostly junior high education, and 76% of the respondents have broiler farming as their main livelihood. The farmers have quite a long time of experience (8.92 years) in raising broiler farming. Their satisfaction of the contract farming model's service is of medium category (score 84.02) and their perception of the nucleus companies' service quality is of medium category (score 86.34). The Spearman Rank Correlation analysis shows that the nucleus companies' service quality is significantly related to the broiler farmers' satisfaction ( $P < 0.01$ ) with a strong correlation coefficient of 0.761. The nucleus companies' services in broiler contract farming model must be continuously improved to increase broiler farmers' satisfaction.

Keywords: Contract farming, Satisfaction level, Service quality

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### Introduction

Commercial broiler industry has grown rapidly in line with the dynamics of price issue, consumption rate and broiler supply adequacy. The commercial chicken consumption per capita in 2017 is 5.68 kg, or there is a 11.22% (5.11 kg) increase of consumption from 2016. The growth of demand and consumption of broiler chicken is an opportunity to increase broiler production and populations. Meanwhile, broiler population reaches 1.8 billion in 2017 and shows a 13.22% increase compared to that in 2016 (Directorate General of Livestock and Animal Health of Indonesia, 2018). The increase in broiler chicken population cannot be separated from the increasing number of broilers contract farming units between nucleus companies and plasma farmers.

The broiler contract farming is a collaboration of a nucleus company with plasma broiler farmers in producing broiler chickens which are ready to be consumed by the community. The cooperation is related to the provision of production facilities as well as the technical, marketing and capital assistance. The development of broiler contract farming in Banyumas Regency is

characterized by the increasing number of nucleus companies involved in economic interactions between companies and plasma broiler farmers. In 2017, 10 nucleus companies are identified carrying out contract farming activities in Banyumas Regency involving 150 plasma broiler farmers. The increasing chicken meat consumption per capita has led to an increase in economic intensity in the broiler industry. This encourages nucleus companies to meet market needs by increasing broiler production and population. On the other hand, the community desires to be involved in economic activities despite facing obstacles in capitalization, lack of knowledge about broiler production, and difficulties in access to the market. The presence of nucleus companies in the broiler contract farming program is plasma farmers' economic hope in increasing their business income through providing production inputs, processes and outputs carried out by the nucleus companies. Eaton and Shepherd (2001) define contract farming as an agreement between a plasma farmer and nucleus company in the supply of production input, cultivation/production, and output marketing upon a price agreement.

The sustainability of broiler farming of plasma farmers is an important component to

maintain the availability of broiler chickens in meeting the need for chicken meat. Mutual interactions between the nucleus companies and plasma broiler farmers can prevent plasma broiler farmers from ceasing their business or quitting their contract farming program. The mutualistic interaction can be done with good services given by the nucleus companies to the plasma farmers. However, the pattern of contract farming is often hampered by either party's dissatisfaction which results in cessation of the collaboration, which may be caused by lack of commitment to the cooperation agreement. Gersch (2018) states that service in production assistance by nucleus companies and non-compliance with cooperation commitments is a challenge for the sustainability of contract farming. Parirenyatwa and Mago (2014) add that partnership in agribusiness creates an unequal bargaining position for plasma farmers.

Service is one important factor to maintain the number of plasma farmers in a broiler contract farming program provided by the nucleus companies. The service quality should be well measured to satisfy the partners by paying more attention to some variables, such as tangibility, responsiveness, empathy, reliability, and assurance. The components of nucleus companies' services to plasma farmers may be in the form of ease of obtaining information, increasing knowledge and skills, fostering farmers, solving farmer problems, providing production facilities to farmers, facilitating broiler marketing and facilitating access to capital that may affect farmers' loyalty to partner with nucleus companies. The development of the broiler plasma farmers' farming scale requires an increase in production and nucleus companies' supply services. An integrator's capability to provide services and benefits perceived by plasma farmers is expected to strengthen their loyalty to the integrator. Kasiri *et al.* (2017) states that improving service quality can satisfy and strengthen consumer's loyalty. In relation to this, this research needs to focus on examining the problems of broiler farmers' satisfaction, nucleus companies' service quality, and the relationship between nucleus companies' service quality and plasma broiler farmers' satisfaction in Banyumas Regency.

## Materials and Methods

This research studies broiler farmers' satisfaction on the service quality of contract farming models in broiler industry in Banyumas Regency by surveying 50 plasma broiler farmers have been running their farm and involved in contract farming for minimum 1 year in Banyumas Regency. In 2018, there are 5 nucleus companies in Banyumas Regency with 105 plasma farmers. The 50 respondents are selected using the proportional random sampling method based on Slovin formula. In the first

phase, the number of respondents is determined using the Slovin formula below:

$$n = N / (1 + N.e^2)$$

Where:

n = Number of respondents

N = Number of populations

e = Error tolerance limit (10 percent).

In the second phase, the respondents are determined proportionally to each of the (5) randomly selected nucleus companies. Primary data was obtained using a questionnaire with a Likert scale approach in the range 1-4 where 1 was strongly disagree and 4 was strongly agreed. The scale is used to describe the perceptions of plasma farmers on satisfaction and quality of service for nucleus companies. The plasma farmers' satisfaction is measured by assessing partner's acceptance to contract growing procedures, guarantees, production input contracted price, quality of input production (day old chick, feed, drug and vaccines), delivery schedules of feed, day old chick, drug and vaccines, frequency of counseling from field extension workers, materials provided by field extension workers, supporting facilities used by field extension workers, extension workers' response to farmers' complaints, stipulation of production standards, harvest time accuracy, broiler selling prices suitability, timely payment of yields, feed conversion ratio (FCR) bonus, mortality bonus and broiler plasma farmers' profile (age, education, experience, and farming scale). Meanwhile, the quality service of nucleus companies is measured using some aspects of ease of obtaining information, increasing knowledge and skills, fostering farmers, solving farmers' problems, providing production facilities to farmers, ease of marketing and easy access to capital. The secondary data are obtained through nucleus companies' notes and statistical documents with the Directorate General of Livestock and Animal Health of Indonesia.

The obtained data were analyzed using a descriptive statistical method to describe the profile of plasma broiler farmers, satisfaction and service quality of nucleus companies in the contract farming programs. The satisfaction level of each plasma broiler farmer was obtained by summing the plasma farmers' perception scores in 30 statements. Likewise, the service quality level is measured by summing the perception scores of each plasma farmer in 30 statements. The statements were divided into groups consisting of six statements based on the tangibility, reliability, responsiveness, assurance, and empathy aspects. Furthermore, the description of satisfaction and service quality of the nucleus companies was analyzed using the average approach (mean) of 50 respondents.

$$\bar{X} = \frac{\sum X}{n}$$

Where:

$\bar{X}$  = Mean

$\Sigma x$  = Sum of score  
 $n$  = number of farmers.

Spearman Rank Correlation Analysis was used to analyze the relationship between service quality of nucleus companies and satisfaction of plasma broiler farmers.

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

Where:

$\rho$  = coefficient of correlation  
 $d_i$  = the difference between a pair of ranks  
 $n$  = the number of farmers.

When the significance value is  $< 0.05$ , there is a relationship between the quality of contract growing services and the satisfaction of broiler plasma farmers.

## Result and Discussion

### Plasma broiler farmers' profile

Fifty plasma broiler farmers are selected as respondents from 5 nucleus companies with minimum 1 year of involvement in broiler contract farming in Banyumas Regency. Based on Table 1, broiler farming is not dominated only by male farmers, in which 6% of the broiler farmers in Banyumas Regency are female. The women's involvement in broiler contract farming is encouraged by their motivation to contribute to increasing their family income in addition to their husbands' earnings from their various jobs in formal sectors. Most of the broiler farmers (90%) are of productive range of ages (18-59 years old) and have high school education (58%). This range of ages and education is characterized with enough courage to take risks and tend to innovate. These characteristics are very important in the broilers industry, since they will be at high business risks. Morton (2007) states that agricultural business contains many risks such as natural disasters, unpredictable climate, changes in prices of production inputs and agricultural products selling price risk.

Most of the plasma broiler farmers (76%) have been running broiler farming as their family's main business while the remainder (24%) have it as a side business. The data obtained show that broiler farming is their family's main source of income. Most of the farmers (50%) who participate in the contract farming have maximum 5 years of experience. The young broiler farmers who participate in the contract farming have limited experience and expect the nucleus companies' assistance.

### Nucleus companies' service quality

The service quality in contract farming model means the plasma broiler farmers' perception of the services provided by the nucleus companies in the broiler industry with the tangibility, responsiveness, empathy, reliability and assurance approaches. Jian and Wang (2006) state that service quality perception is consumers' rating of perceived service performance in comparison with their expectations. Satpathy *et al.* (2017) add that service quality can be measured by evaluating its major components including reliability, responsiveness, tangibility, credibility, and security.

The descriptive analysis in Table 2 shows that most of the broiler plasma farmers (82 percent) consider that the quality of services provided by the nucleus companies meets their expectations. Based on questionnaires with their 30 questions, the broiler plasma farmers have the service quality (tangibility, responsiveness, empathy, reliability and assurance) scored 86.34. Tangibility shows the existence of equipment and physical facilities owned by the nucleus companies to serve their plasma farmers. Responsiveness means the nucleus companies' attitude and willingness to help the plasma farmers quickly/ precisely/ swiftly in response to existing problems. Empathy means the attention paid by the nucleus companies to plasma farmers especially in facing broiler production problems. Reliability shows the accuracy of nucleus

Table 1. Respondents' characteristics of plasma broiler farmers from 5 nucleus companies in Banyumas Regency

Demographic Indicator	Nucleus company					Number	Percentage (%)
	SDA	MTA	SSS	CMS	MTK		
Sex							
Male	10	8	10	9	10	47	94
Female	0	2	0	1	0	3	6
Age							
20-59	8	8	9	10	10	45	90
>60	2	2	1	0	0	5	10
Main job							
Broiler farmer	8	6	9	7	8	38	76
Non-broiler farmer	2	4	1	3	2	12	24
Education							
Primary School	3	1	1	2	1	8	16
Secondary School	0	0	4	1	4	9	18
High School	6	7	5	6	5	29	58
Higher Education	1	2	0	1	0	4	8
Farming Experience							
0-5 years	5	4	8	5	3	25	50
6-10	0	1	0	3	3	7	14
More than 10 years	5	5	2	2	4	18	36

Table 2. Plasma broiler farmers' perception of 5 nucleus companies' service quality

Service Quality Component	Nucleus company					Average
	SDA	MTA	SSS	CMS	MTK	
Tangible	20.1	20.6	20.80	20.3	20.8	20.52
Reliability	17.4	17.3	16.70	17.5	17.1	17.2
Responsiveness	15.7	15.9	14.10	15.6	16.2	15.5
Assurance	16.5	16.2	15.60	16.3	17.4	16.4
Empathy	16.6	16.3	16.80	16.3	17.6	16.72
Total	86.3	86.3	84.00	86	89.1	86.34
Service Quality Assessment	%	%	%	%	%	%
Low (score 31-62)	-	-	10	-	-	2
Medium (score 63-93)	70	90	70	80	100	82
High (score 94 – 124)	30	10	20	20	-	16

companies in providing assistance to the plasma farmers in solving their problems. Assurance illustrates that the nucleus companies guarantee business success and reduce the plasma farmers' risk of business failure. The service component that leaves the plasma farmers a very positive impression is the nucleus companies' physical facilities and equipment which may help the plasma farmers solve their broiler production problems. The farmers perceive that the nucleus companies' production inputs, technology and production equipment served to them are in line with their expectations. The result of this research is in line with that conducted by Kitapci *et al.* (2013) stating that the service quality perceived by people indicates that the customers' expectations on service performance conform theirs on service quality. The company well fulfills the goods or services as expected by people.

Five nucleus companies provide contract farming services through partnership agreements between nucleus companies and plasma broiler farmers. The contract farming agreements include service provision of DOC, feed, supervision, production sales and incentives. Based on Table 4, it is illustrated that the five nucleus companies in the contract farming program in Banyumas Regency provide services with quality that do not show differences between these companies ( $P>0.05$ ). It stated that the framework of contract farming among five nucleus companies showed no difference. There is a general framework for contract farming in providing broiler production services to plasma farmers in producing output with an efficient process.

Based on Table 2, only 2 percent of respondent state that the nucleus companies do not provide contract farming services as expected. The farmers consider that the nucleus companies do not provide assurance for the success of production, marketing and increased income to the plasma farmers.

### Plasma broiler farmers' satisfaction

Consumer satisfaction measurement is something significant in a business's development to modernity (Grigoroudis and Siskos, 2010) and is consumer's assessment of the discrepancy between expected and actually received needs (Omachonu *et al.*, 2008). The attributes used in evaluating the plasma farmers' satisfaction include registration procedures, contract implementation, transparency and speed of service, quality of input/ production facilities, production and marketing services, risk management, technical assistance. Table 3 shows that the broiler farmers are quite satisfied with the contract farming services carried out by the nucleus companies (average score of 84.02). Table 4 shows that plasma broiler farmers in five nucleus companies in Banyumas Regency have no different satisfaction to the services of nucleus companies ( $P>0.05$ ). The contract farming services provided by five nucleus companies have sufficiently fulfilled the needs and expectations of plasma broiler farmers in Banyumas Regency.

Most of the plasma broiler farmers (98 percent) show their satisfaction of the contract farming services carried out by the nucleus companies and only a few (2 percent) farmers show their dissatisfaction with the nucleus companies' services. The nucleus companies can meet the needs of or resolve the problems of the plasma broiler farmers in Banyumas Regency. The plasma broiler farmers in Banyumas Regency have problems of lack of broiler farming techniques, marketing risks (especially pricing), and low capital. Wirtz *et al.* (2000) state that the managerial implication of a satisfaction study is to create a pleasant service environment for the parties in cooperation.

The effort to maintain the plasma broiler farmers' satisfaction is very significant to increase the plasma farmers' participation in the contract farming model. The plasma farmers will always be satisfied with the contract farming if the nucleus

Table 3. Plasma broiler farmers' satisfaction of 5 nucleus companies' services

Farmers' Satisfaction Value	Nucleus Company					Average
	SDA	MTA	SSS	CMS	MTK	
Farmer's Satisfaction	82.4	82.7	82.90	83.7	88.4	84.02
Farmers' Satisfaction Level	%	%	%	%	%	%
Low (score 30 - 60)	0	0	10	0	0	2
Medium (score 61 - 90)	80	100	60	80	60	76
High (score 91 – 120)	20	0	30	20	40	22

Table 4. The comparison of plasma broiler farmers' satisfaction and service quality at five nucleus companies in Banyumas Regency

		Sum of Squares	df	Mean Square	F	Sig.
Satisfaction of plasma broiler farmers	Between Groups	249.080	4	62.270	1.000	.417
	Within Groups	2801.900	45	62.264		
	Total	3050.980	49			
Service quality of nucleus companies	Between Groups	132.120	4	33.030	.482	.749
	Within Groups	3083.100	45	68.513		
	Total	3215.220	49			

companies are able to identify their needs and fulfill them. The nucleus companies must be able to provide pleasant and quality services to the plasma farmers so as to create mutual benefits and convenience for the plasma farmers in the broiler production.

#### Relationship between nucleus companies' service quality and plasma broiler farmers' satisfaction

Plasma farmers' satisfaction is very important to ensure the sustainability of broiler contract farming in Banyumas Regency. Kasiri *et al.* (2017) state that consumer's satisfaction has a significant impact on the consumer's loyalty. Based on Table 5, the nucleus companies' quality of contract farming services and the plasma farmers' satisfaction have a strong relationship ( $\rho = 0.761$ ).

The plasma broiler farmers' high satisfaction of the nucleus companies' services illustrates the conformity of nucleus companies' services to the plasma farmers' expectations and needs. The success in fulfillment of the plasma farmers' expectations and needs in the initial process of contract involvement, the business assistance process, and the guarantee of business success have had the plasma farmers satisfied.

The Spearman Ranking Correlation Analysis used in identifying the relationship between the nucleus companies' quality of contract farming services of and the plasma farmers' satisfaction shows a significant relationship between the two variables ( $P < 0.01$ ). This condition indicates that improving the services quality of contract farming will increase the broiler plasma farmers' satisfaction. The success in increasing the plasma farmers' satisfaction is expected to prevent the farmers' turnover rate and enhance their loyalty to the nucleus companies. The service quality components (tangibility, responsiveness, empathy, reliability and assurance) statistically

show a significant relationship with plasma farmers' satisfaction ( $P < 0.01$ ). The availability of production infrastructure, sensitivity and speed of response, feeling of belonging, precision in solving problems, as well as market guarantees given by the nucleus companies to the plasma broiler farmers have made the farmers feel the given adequate services and stimulated the broiler farmers' satisfaction. The service quality perceived by the farmers and the capability to meet the plasma farmers' needs can lead to farmers' increased satisfaction. De Keyser and Lariviere (2014) state that technical and functional qualities influence customer satisfaction. Technical quality focuses on what is provided while functional quality focuses on how to provide services.

The satisfaction perceived by the plasma broiler farmers and service quality of nucleus companies cannot be separated from both parties' commitment. Mutual interaction between nucleus company and plasma farmers will maintain both parties' cooperation. Responsive service quality carried out immediately/ on time in response to existing problems, company's ability to generate trust and assurance, level of understanding/ caring and attention paid by the company to the plasma farmers (empathy), as well as physical facilities, equipment, and officers' appearance (tangibility) are nucleus company' commitment in serving plasma farmers. Correct business process with company's assistance, effective communication with nucleus company, appreciation for contract contents are plasma farmers' commitment. Herminingsih (2017) explains that the commitment between plasma farmers and cooperatives as a nucleus company can provide both parties satisfaction, so that cooperation can be further strengthened and provide benefits for both parties. Granja and Wollni (2018) add that plasma farmers' participation will rise if the nucleus company is able to diversify contracts to better meet the plasma farmers' demands and expectations.

Table 5. The relationship between service quality of 5 nucleus companies and satisfaction of plasma broiler farmers in Banyumas Regency

Elements of service quality	Coefficient of correlation
Service quality	0.761**
Tangible	0.528**
Reliability	0.629**
Responsiveness	0.572**
Assurance	0.676**
Empathy	0.624**

\*\* Significance at 0.01 ( $P < 0.01$ ).

## Conclusions

The contract farming model in the broiler industry should prioritize the mutual benefit principle and satisfy the parties in cooperation. The nucleus companies have provided adequate services to the plasma broiler farmers in Banyumas Regency. The quality of service can provide the plasma broiler farmers adequate satisfaction. The nucleus companies should develop higher innovative service quality to meet the plasma broiler farmers' increasing demands.

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