Determinants of Broiler Chicken Farmer Satisfaction and Loyalty within Corporate Partnerships: A Structural Equation Modelling Approach

Ramadhan Apagoda Mbalari[1], Bahari Bahari[2], Idrus Salam[3], Haji Saediman[4*], Norma Arif[5]

[1,2,3,4]*Department of Agribusiness, Faculty of Agriculture, Halu Oleo University, Kendari, Indonesia*
[5]*Department of Agrotechnology, Faculty of Agriculture, Halu Oleo University, Kendari, Indonesia*

Abstract: **This study aims to (1) determine the influence of product quality, service quality, corporate image, and farmers' expectations on farmers' satisfaction, and (2) understand the effect of farmers' satisfaction on their loyalty to the company. The population in this study are broiler chicken farmers who have entered into partnership agreements with the Company X, totaling 100 people. Thirty respondents were selected through a simple random sampling technique. Data were collected through interviews based on questionnaires. The data was analyzed using the SEM (Structural Equation Modelling) method with a Partial Least Square (PLS) approach. The SEM was applied to six factors derived from the data: product quality, service quality, corporate image, farmers' expectation, farmers satisfaction, and farmers' loyalty. The results show that product quality, service quality, farmers' expectations, and corporate image have a positive and significant effect on the farmers' satisfaction with the performance of the company. Farmers' satisfaction has a positive and significant impact on farmers' loyalty to the company. The impact of satisfaction and loyalty has turned the company into a rapidly growing partnership company in Southeast Sulawesi Province.**

Keywords: **broiler farming, farmers, partnership, satisfaction, loyalty.**

1. Introduction

The global poultry industry plays a crucial role in the agricultural sector, significantly contributing to the meat and egg supply and addressing food security issues. In Indonesia, the poultry sector, especially broiler chicken farming, is a vital source of animal protein, assisting in nutritional improvement and human resource development. It stands as a key to innovation in agribusiness, attracting attention for its rapid turnover and potential for income generation, thereby bolstering local and domestic economies [1], [2].

In Southeast Sulawesi province, broiler chicken farming is not just an agribusiness but also an integral part of the socio-economic fabric. Despite not being a priority commodity [3], the province has embraced broiler farming, which thrives on the back of a conducive environment for rapid growth and high productivity, contributing to food security and poverty alleviation. Notwithstanding, the profitability of broiler farming hinges significantly on efficient feed management [1], [4] and is influenced by a variety of other factors, including the quality of the product, service quality, farmers' expectations, and company image.

In Southeast Sulawesi, broiler farming businesses are known to operate independently or within partnership schemes [5]. However, independent operations have frequently faced challenges and setbacks, due to the disproportionate costs and revenues from chicken sales. In contrast, partnership schemes have rapidly developed, thanks to mutually beneficial agreements between core companies and individual (plasma) farmers [6], [7].

The are eight partner companies are involved in the broiler business in the province. The province's growing population and improving living standards have led to higher food demand, changing household consumption patterns towards more animal protein (including livestock products). The development of broiler farming through core-plasma partnership systems in Southeast Sulawesi by several companies has increased the appeal of broiler businesses for individuals with limited capital. The short production time (quick yielding) is an attractive aspect of this business. The partnership schemes are deemed beneficial for farmers, who need only provide coops and labor, while the partner companies handle production facilities, such as Day-Old Chicks (DOC), feed, medication, vitamins, technical guidance, and marketing of the livestock products [8], [9].

Every partnership company has strengths and weaknesses in offering these partnership schemes, leading to competitive dynamics in acquiring and retaining farmer loyalty. Generally, farmer loyalty stems from satisfaction with the products, services, alignment with farmer expectations, and the image of the core company during the partnership. This level of satisfaction is crucial in determining interest and willingness to continue or switch to new partnerships offering more promising satisfaction [10].

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*Corresponding author: saediman@yahoo.com

Companies must strive to enhance product quality and services to maintain their network of farmers amidst fierce competition, ensuring farmer satisfaction and minimizing the potential shift to other companies [11]. However, these improvement efforts are not without challenges. Partnership companies operate based on visions and missions derived from the core company's perception of the partnership, reflected in the contracts. These consider the risks faced by the core companies, leaving farmers with little leverage in negotiating these agreements. Meanwhile, individual farmers' perceptions of the contracts can vary [7].

This paper deals with the determinants of broiler chicken farmers' satisfaction and loyalty within corporate partnerships. It employs a structural equation modeling approach to assess the complex relationships between these variables. The study aims to unravel how these determinants collectively influence farmers' loyalty, a crucial factor for sustained success in the competitive realm of broiler farming. By examining the role of farmers' satisfaction as a moderating variable, this research provides an understanding of the variables that underpin loyalty within corporate partnerships. As such, it is expected to contribute to the literature on agribusiness management and the optimization of farmer-company relations, with implications for policy and practice in the Indonesian poultry industry.

2. Materials and Methods

This study was conducted from January to April 2022. The study explored the determinants of satisfaction and loyalty among broiler chicken farmers in partnerships with the Company X in Southeast Sulawesi Province. This company, established in 2014 in Kendari, is among the broiler partnership companies in Southeast Sulawesi, with its headquarters in Makassar. The methodology integrated a mix of qualitative and quantitative data. Data were collected through observation of farming practices and partnership operations, questionnaires to gauge farmers' perceptions on a Likert scale, and document analysis of partnership agreements and performance records.

Structural Equation Modeling (SEM) was utilized to assess relationships among study variables. SEM focused primarily on latent variables which are directly measurable and represented by Likert scale questions. Responses ranged from "strongly disagree" to "strongly agree." The study included both exogenous and endogenous variables: Product Quality (X1), Service Quality (X2), Farmers' Expectations (X3), Company Image (X4), Farmers' Satisfaction (X5), and Farmers' Loyalty (Y). These were represented by 32 observed indicators and 6 latent variables.

Partial Least Squares (PLS), a SEM variant, was chosen for its applicability in complex scenarios with minimal theoretical support. PLS is flexible across data scales and requires fewer assumptions and sample sizes [12]. The analysis involved instrument testing for validity and reliability, model testing (examining both the measurement and structural models), and hypothesis testing using bootstrapping [13], [14].

The analytical process began with designing the structural model based on research hypotheses, followed by constructing the measurement model to determine if indicators were reflective or formative. A path diagram was constructed for a clearer representation of model relationships, and then converted into a system of equations to define the outer model's relationships. Parameter estimation employed the least square method executed through iterative processes until convergence.

3. Results and Discussion

The latent variables presented excellent reliability, with Cronbach's alpha values > 0.60 [15] as follows:
product quality (X1) (Cronbach's alpha = 0.999);
service quality (X2) (Cronbach's alpha = 0.999);
farmers' expectation (X3) (Cronbach's alpha = 0.999);
company's image (X4) (Cronbach's alpha = 0.999);
farmers' satisfaction (X5) (Cronbach's alpha = 0.999);
farmers' loyalty (X6) (Cronbach's alpha = 0.999).

The Partial Least Squares (PLS) path modeling analysis revealed that the proposed model indicates an excellent fit with the observed data, as evidenced by the model fit indices. The coefficient of determination (R^2) was remarkably high, indicating that the model can explains a significant portion of the variance in farmers' Satisfaction and loyalty. This is further corroborated by substantial f^2 effect sizes, suggesting that the independent variables—Product Quality, Service Quality, Farmers' Expectations, and Corporate Image—have a meaningful impact on the dependent variables. The reliability and validity of the constructs were confirmed through high values of Cronbach's Alpha, rho_A, Composite Reliability, and Average Variance Extracted (AVE), indicating that the measurement models are both reliable and valid. Discriminant validity was established with high HTMT ratios, ensuring that the constructs are distinct and measure unique dimensions. Moreover, model selection criteria such as the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) yielded negative values, indicating a preference for a parsimonious model. The low Standardized Root Mean Square Residual (SRMR) value suggests that the model residuals are minimal. Collectively, these fit indices validate the structural model's robustness, supporting the relationships posited between the constructs within the context of company X.

A. Relationship between Product Quality, Service Quality, Farmers' Expectation, and Company Image with Farmers' Satsifaction

Figure 1 shows the relationship between Product Quality, Service Quality, Farmers' Expectation, and Company Image with Farmers' Satisfaction. The figure demonstrates that the relationships between Product Quality, Service Quality, Farmers' Expectations, and Corporate Image with Farmers' Satisfaction are statistically significant. The t-statistics for each variable indicate a strong positive impact of Product Quality on Satisfaction with a score of 2.981, exceeding the standard threshold of 0.7. Conversely, Service Quality's influence on Satisfaction, with a t-statistic of 0.226 or 22.6%, falls below the standard, suggesting a negligible impact. Farmers' Expectations exceed the threshold with a t-statistic of 1.772, while Corporate Image shows the highest influence on

Satisfaction with a t-statistic of 4.816. On average, the variables meet the standard with a collective t-statistic of 0.746 or 74.6%.
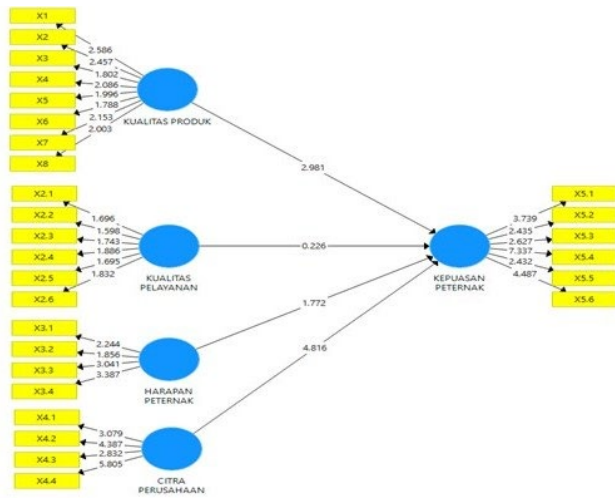

Fig. 1. The relationship between product quality, service quality, farmers' expectation, and company image with farmers' satisfaction

In the Partial Least Squares (PLS) Algorithm Analysis, the Path Coefficients indicate the direction and strength of relationships between variables, ranging from -1 to 1. The PLS results reveal that the Path Coefficient for Corporate Image is 0.671, indicating a strong positive effect, while Farmers' Expectations show a negative effect at -0.313. Service Quality has a minimal positive effect at 0.034, and Product Quality has a significant positive effect at 0.607.

The structural equation modeling (SEM) analysis presents a comprehensive picture of the relationships between Product Quality, Service Quality, Farmers' Expectations, Corporate Image, and Farmers' Satisfaction and their collective influence on farmers' loyalty at the Company. The SEM results indicated that Corporate Image (X4) exerts the strongest positive influence on Farmers' Satisfaction (Y), with a path coefficient of 4.816, signifying a robust relationship between the company's image and the satisfaction levels of the farmers. This is followed by Product Quality (X1) with a path coefficient of 2.981, suggesting a substantial positive impact on satisfaction. Farmers' Expectations (X3) and Service Quality (X2) also positively contribute to satisfaction with path coefficients of 1.772 and 0.226, respectively, although the effect of Service Quality is relatively minimal.

In conjunction with the SEM findings, the Partial Least Squares (PLS) algorithm further confirms the significance of these variables. The PLS analysis reinforces the strong relationship between Corporate Image and Farmers' Satisfaction, as reflected in the substantial loadings and weights in the model. The impact of Farmers' Expectations is also underscored, aligning with the SEM analysis that suggests farmers' anticipation regarding the collaboration plays a critical role in shaping their overall satisfaction.

These findings have significant implications for the strategies that the Company may adopt in its efforts to strengthen farmers' satisfaction. The management should consider investing in areas that enhance the corporate image

and product quality, as these factors are the most influential in driving satisfaction. Concurrently, understanding and managing farmers' expectations will be crucial in ensuring sustained satisfaction and, by extension, loyalty over time. Although the influence of Service Quality is not as pronounced as other factors, it remains an essential component of the overall value proposition.

In summary, the SEM analysis provides converging evidence that Corporate Image, Product Quality, and Farmers' Expectations are pivotal in shaping Farmers' Satisfaction. This result agrees to findings of study by Suratno et al. [16]. These findings underscore the need for a strategic focus on these areas to build a loyal customer base, which is critical for the long-term success and sustainability of the company's operations.

B. Relationship between Farmers' Satisfaction and Farmers' Loyalty

Farmers' Satisfaction is an emotional response that includes both positive and negative attitudes and can influence their feelings and thoughts about the collaboration. A high level of satisfaction contributes to an increase in farmers' loyalty towards the company. Dissatisfaction, conversely, serves as feedback that can affect future loyalty. The study finds that farmers' satisfaction is a critical component needed by every farmer to enhance their individual output. Although the nature of satisfaction is relative and varies between individuals, the research results indicate that satisfaction significantly impacts farmers' loyalty.
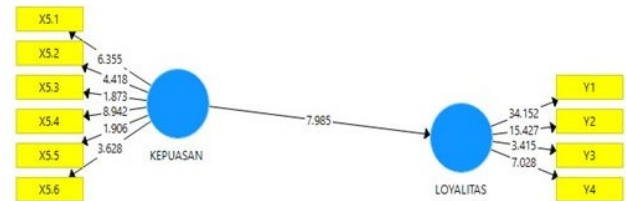

Fig. 2. The relationship between farmers' satisfaction and farmers' loyalty

The SEM analysis reinforces the pivotal role of farmers' satisfaction in cultivating loyalty towards Company X. Satisfaction, as a resultant feeling from successful collaborations between farmers and the company, is the bedrock upon which loyalty is built. Analysis result indicates that the highest satisfaction scores are associated with items X5.2 and X5.5, both scoring an average of 1.83, while the lowest scores are associated with items X5.1 and X5.3. These results demonstrate that the satisfaction levels among farmers at Company X are commendable, exceeding the standard benchmark of 0.7. Such satisfaction is imperative in an environment where competition is often fierce and not always fair, highlighting the need for the company to consistently educate farmers to foster positive and ethical business practices.

In the realm of loyalty, item Y6.3, which gauges the farmer's inclination to remain with the company, scores the highest average of 1.83, indicating robust loyalty. This aligns with the satisfaction indicators, suggesting that higher satisfaction correlates with stronger loyalty. The lowest loyalty score is found in item Y6.2, yet it still meets the standard threshold,

emphasizing overall solid farmers' loyalty to the Company X.

The Partial Least Squares (PLS) test was conducted to ascertain the positive influence of farmers' satisfaction on loyalty. The PLS results, as visualized in Figure 2, present a T-statistic of 7.985, surpassing the standard of 0.7, which substantiates the decision-making process regarding the relationship between farmers' satisfaction and loyalty. With construct validity and reliability confirmed at 0.999 and an average AVE ranging from 0.996 to 0.998, the relationship between satisfaction and loyalty is statistically significant and accepted.

In conclusion, the SEM and PLS analyses collectively affirm that farmers' satisfaction is a critical determinant of loyalty at the Company X. This result is in line with the previous studies that customer satisfaction positively and significantly affected customer loyalty [17]–[19]. Thus, the company's focus on maintaining high satisfaction levels among farmers is validated as a clear strategy to enhance loyalty, which is crucial for sustainable business success in the competitive agricultural sector.

C. Determinants of Farmers' Loyalty

The SEM model unequivocally indicates that Product Quality, Service Quality, Farmers' Expectations, and Corporate Image are pivotal determinants of Farmers' Satisfaction, which, in turn, is instrumental in fostering loyalty at the Company X. The structural path coefficients present in the model underscore the varying degrees of impact, with Corporate Image displaying the most substantial direct effect on Farmers' Satisfaction, followed by Product Quality, Farmers' Expectations, and Service Quality.
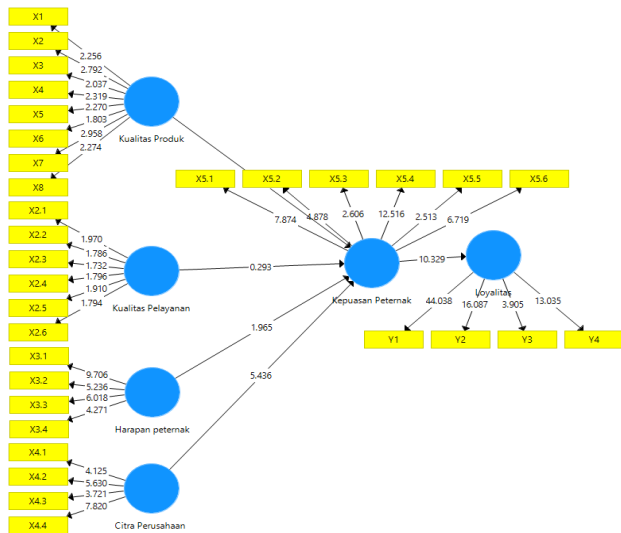

Fig. 3. The relationship between product quality, service quality, farmers' expectation, company image, and farmers' satisfaction with farmers' loyalty

Particularly, the path coefficient of Corporate Image to Farmers' Satisfaction stands out at 5.436, reflecting the paramount importance of the company's reputation and image in the eyes of the farmers. Product Quality also shows a strong positive relationship with a coefficient of 2.981, affirming that the perceived quality of the products is a critical contributor to

satisfaction. While Service Quality has a smaller coefficient of 0.293, it still plays a non-negligible role in shaping farmer satisfaction. Interestingly, Farmers' Expectations have a significant, albeit less pronounced, influence with a coefficient of 1.965.

The model's fit is further validated by the F-test results, which reveal an F-calculated value of 519.000, well above the F-table value of 361. This statistical evidence, with a p-value of less than 0.05, firmly establishes the simultaneous impact of the measured factors on loyalty.

The empirical findings from this model provide actionable insights for the Company X. The strong links between these factors and farmers' loyalty accentuate the need for strategic emphasis on enhancing corporate image and product quality. Notably, while the influence of Service Quality on satisfaction may be less intense compared to other factors, it should not be overlooked, as it contributes to the holistic perception of the company's value proposition.

In conclusion, this comprehensive SEM analysis elucidates the interconnectedness of the factors contributing to farmers' loyalty. For the Company X, the path forward involves an integrated approach that not only meets but exceeds farmer expectations, continually improves product quality, and maintains a sterling corporate image to solidify and extend farmers' loyalty.

In this present study, it is concluded that Product Quality, Service Quality, Farmers' Expectations, Corporate Image, and Satisfaction have both a direct and an indirect impact on increasing farmers' loyalty at the Company. This confirms the study by Suratno et al. [16] that brand image, product quality, and customer satisfaction jointly and significantly affect customer loyalty.

These findings provide crucial insights for the management of the Company X in Southeast Sulawesi in enhancing farmers' loyalty. It is important to consider the aspects that affect loyalty, particularly Product Quality, Service Quality, Farmers' Expectations, Corporate Image, and Farmers' Satisfaction. Management should focus more on task execution, improving satisfaction in work, providing education to farmers, and offering facilities that support the enhancement of satisfaction and loyalty.

4. Conclusion

The SEM analysis demonstrates that product quality, service quality, farmers' expectations, and company image are integral determinants of farmers' satisfaction within the corporate partnership framework. Each of these factors shows a significant direct influence on satisfaction levels, with company image emerging as the most influential, followed by product quality, farmers' expectations, and service quality, respectively. The findings align with theoretical postulations, asserting the criticality of these factors in shaping the overall satisfaction of broiler chicken farmers.

Furthermore, farmers' satisfaction has been shown to play a crucial moderating role in the development of farmer loyalty to the company. The analysis reveals a strong, positive relationship between farmers' satisfaction and loyalty,

indicating that enhanced satisfaction is likely to lead to increased loyalty among farmers.

The influence of the examined factors on farmers' loyalty is significant and multifaceted. Product quality and company image notably affect loyalty both directly and through their impact on farmers' satisfaction. In contrast, service quality, while relevant, shows a comparatively smaller direct effect on loyalty. Farmers' expectations, however, demonstrate a significant impact, underscoring the importance of aligning corporate practices with farmer aspirations to foster loyalty.

It is recommended that the company should continue to prioritize the enhancement of product quality and company image as they are crucial to improving farmer satisfaction and loyalty. Service quality improvements, though less impactful, should not be neglected as they contribute to the overall corporate reputation and can indirectly influence loyalty. Engagement initiatives that reinforce the company's commitment to quality and service will enhance the company image and foster stronger farmer loyalty. Policymaking should consider these determinants in formulating regulations that guide corporate-farmer partnerships towards sustainable and mutually beneficial outcomes.

Acknowledgment

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