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RESEARCH ARTICLE
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The Effects of Relationship Marketing On Customer Loyalty Through Customer Retention In Layer Feed Customers in South Sulawesi, Indonesia

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ABSTRACT

Feed companies need a strategy to retain their customers, gain loyalty, and maintain profits. One of the strategies that the company can implement is to pay attention to relationship marketing. The implementation of relationship marketing can help companies attract and retain customers, which then has the potential to generate customer loyalty. This study aims to analyze the effect of relationship marketing on customer loyalty through customer retention among layer-feed customers in South Sulawesi. The samples for this study were 150 respondents of layer feed customers, and the analytical tool used was partial least squares structural equation modeling (PLS-SEM). The developed model comprises 21 variables categorized into three constructs: relationship marketing, customer loyalty, and customer retention. The findings underscore the significance of relationship marketing, as it has an effect on customer retention and necessitates consistent attention from the company. The interplay between relationship marketing and customer retention fosters commitment, trust, communication, and reciprocal relationships between companies and customers. The establishment of trust emerges as a pivotal factor leading to customer retention, playing a crucial role in sustaining enduring relationships between companies and customers. Consequently, this engenders customer loyalty, as customers experience a sense of reassurance regarding the quality of services provided by the company. If feed companies implement relationship marketing strategies well, they can attract and retain customers, which in turn can increase customer loyalty and maintain company profits.

Keywords: Relationship marketing; Customer loyalty; Customer retention; Layer feed

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INTRODUCTION

The laying hen farming business in South Sulawesi plays a crucial role in the regional economy. The rapid growth of the layer feed industry presents both new opportunities and challenges for businesses striving to maintain and expand their customer base. Due to intense competition among layer feed companies in South Sulawesi, such as the existence of chicken feed products of the same quality at varying prices the implementation of significant strategies is imperative for customer retention and enhancing loyalty to gain a competitive edge (Christopher et al., 2002; Huseynov & Amazhanova, 2018; Bachir, 2021; Cardoso et al., 2022; Magatef et al., 2023).

Every company formulates a marketing strategy with the dual objective of retaining existing customers and attracting new ones (Nasir, 2017; Utami et al., 2020; Ekopriyono et al., 2021). While both objectives can be pursued simultaneously, particular attention must be devoted to customer retention strategies (Nasir, 2017; Ekopriyono et al., 2021; Artha et al., 2022). Companies must strive to ensure that their customers consistently experience satisfaction, leading to repeat purchases (Christopher et al., 2002; Soetjipto, 2014; Alshurideh, 2016; Nasir, 2017; Kankam Boadu, 2019; Ekopriyono et al., 2021; Fook & Dastane, 2021; Artha et al., 2022; Mevia et al., 2022; Gurung, 2023; Hochstein et al., 2023; Sugiato et al., 2023).

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Despite the tendency of some companies to overlook consumer demands and desires, resulting in customer loss and difficulty in attracting new customers (Wolter et al., 2017; Herhausen et al., 2019), efforts to achieve the dual objective of retaining existing customers and attracting new ones through positive customer relationships have gained recognition (Oliveira et al., 2021; Khan et al., 2022). However, it is acknowledged that managing these relationships alone is insufficient for maintaining consumer loyalty (Abtin & Pouramiri, 2016; Kim et al., 2021; Zeren & Kara, 2021).

The strategy of relationship marketing (RM) has emerged as an effective approach to establishing strong connections between companies and customers in the layer feed industry (Palmatier, 2008; Steinhoff et al., 2019; Thaichon et al., 2020; Mora Cortez et al., 2023). The industry has undergone significant changes, particularly in response to globalization and technological advancements (Pereira et al., 2021; Wang et al., 2023; del Val Núñez et al., 2024), necessitating companies to adapt.

The development of information technology provides opportunities for companies to communicate more efficiently with layer feed customers, understand their needs and preferences (Bahrami et al., 2012), offer more personalized (Bonaretti et al., 2020; Talebi & Khatibi, 2023), and respond promptly to market changes (Misirlis & Vlachopoulou, 2018; Dwivedi et al., 2021; Sedalo et al., 2022; Cui et al., 2023; Wang et al., 2023). This underscores the importance of companies adapting to contextual changes to remain relevant and competitive.

Implementing relationship marketing (RM) through the utilization of current technological developments can effectively reduce marketing costs and enhance company profitability (Christopher et al., 2002; Li, 2021; Feronika & Kurniawati, 2022; Zhang, 2022; Avecillas et al., 2023) as recommended (Salam et al., 2019). They suggest that implementing RM can assist companies in both retaining and attracting customers, thereby potentially fostering customer loyalty (Alshurideh, 2016; Hollensen & Opresnik, 2019; Kankam Boadu, 2019; Fook & Dastane, 2021; Artha et al., 2022).

The application of relationship marketing is not always felt directly by customers, but the purchased feed products impact the livestock, which is a factor for farmers to make repeated purchases due to the productivity of their laying hens. Of course, there are different approaches to implementing relationship marketing for animal feed companies. Unlike products that customers directly consume, layer feed products are consumed by their laying hens. Therefore, layer feed companies must maintain a strong relationship with their customers, even if they do not directly consume the product. In this case, the indicator of feed quality is not only seen from the impact on livestock productivity but also from the relationship maintained between the company and the customer. This differentiates the approach of animal feed companies from other companies, where, in addition to taking care of customers, they also directly consume their products.

Customer loyalty has evolved into the primary indicator of a company's success (Christopher et al., 2002; Othman et al., 2021; Gattermann-Itschert & Thonemann, 2022; Fan et al., 2023; Hochstein et al., 2023; Li et al., 2023) this includes layer feed companies because the products sold not only affect the animals' welfare but also directly impact the farmer's production output and profits. In this context, maintaining strong customer relationships is crucial as customers are likely to make repeat purchases if they are satisfied with the quality of the feed and see improvements in the productivity of their livestock. Therefore, animal feed companies should prioritize efforts to provide added value, listen to customer feedback, and ensure consistent product availability to ensure high customer satisfaction and retention in the long run.

Ongoing efforts to retain customers for layer feed products persist, recognizing that retaining existing customers proves to be more cost-effective than acquiring new ones (Odunlami, 2014; Alshurideh, 2016; Ekopriyono et al., 2021; Sugiato et al., 2023). Hence, customer retention emerges as a key factor for enhancing business sustainability and reducing marketing costs (Andayani, 2021; Artha et al., 2022; Gurung, 2023).

Customer loyalty has evolved into the primary indicator of a company's success (Bahri-Ammari & Bilgihan, 2019; Paparoidamis et al., 2019). However, achieving customer loyalty necessitates significant time and resource investments (Nyadzayo & Khajehzadeh, 2016; Izogo, 2017; Tseng et al., 2017). Companies must carefully strategize on customer retention, as many struggle to gain customer loyalty due to a lack of implementation strategies (Wolter et al., 2017; Cheng et al., 2019; Herhausen et al., 2019). Numerous studies have attempted to examine factors affecting customer loyalty, including customer engagement (So et al., 2016), trust (Ozdemir et al., 2020), satisfaction (Morgan & Govender, 2017), product quality (Xhema et al., 2018; Kleber & Juusola, 2021), and other variables.

Despite existing studies on relationship marketing and customer loyalty, this study contributes by focusing on the specific context of South Sulawesi and delving into the role of customer retention as a significant mediator in the relationship between relationship marketing and customer loyalty.

MATERIALS & METHODS

This study encompassed the entire population of laying hen farmers in South Sulawesi, spanning eight regencies, including Maros, Gowa, Sidrap, Pinrang, Enrekang, Takalar, Bone, and Pangkep (Fig. 1). The determined sample size for this study is 150 individuals, in accordance with the methodology developed (Ferdinand, 2006), which establishes that an appropriate sample size for SEM analysis techniques falls within the range of 100–200. In each region, the number of samples taken was determined proportionally according to the largest percentage of feed sales in the company.

Data collection involved the use of an online questionnaire (attachment 1) instrument and direct observation at the research location. The criteria for respondents included being regular customers at the feed company who had made purchases at least twice a year. The research questionnaire comprises two parts.

Fig. 1: Map of the research location in eight regencies in South Sulawesi, Indonesia.

The first part pertains to demographic and business profile questions, while the second part addresses the effect of relationship marketing on customer loyalty through customer retention for layer feed customers. Respondents provided responses on a five-point Likert scale ranging from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

This research is survey research that uses a questionnaire as a research instrument (Creswell, 2012). Additionally, the study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) due to the explanatory predictive nature of the research (Henseler, 2018) and the necessity for latent variable scores to conduct additional analyses (Cepeda-Carrion et al., 2019; Hair et al., 2019; Ghasemy et al., 2021). Model evaluation in Partial Least Squares includes assessing the measurement model, evaluating the structural model, and gauging the goodness and suitability of the model. These processes were executed using the SmartPLS 4.0 tool.

Using the Variance Inflation Factor (VIF), the study verified that multicollinearity was absent prior to implementing the measurement model. According to Hair et al. (2016), multicollinearity is not a serious concern as long as the VIF value is less than 5. Factor loadings, reliability, validity, and discriminant validity were evaluated on the data. The researchers used factor analysis to assess the measurement model and examine the statistical correlations between the variables in the study (Ahmed et al., 2018).

The assessment of reliability was conducted using Cronbach's alpha (α), Composite Reliability (CR), and Average Variance Extracted (AVE). The Fornell Larcker criterion and Heterotrait-Monotrait ratio were utilized to establish discriminant validity.

RESULTS

Demographic Profile of Layer Farmers

Table 1 shows the demographic profile of layer farmers in South Sulawesi, Indonesia, which is divided into eight districts: Maros, Gowa, Sidrap, Pinrang, Enrekang, Takalar, Bone, and Pangkep.

Evaluation of Measurement Model

This subsection examines the measuring model used in this study, which comprises a reflective measurement model. The variables of relationship marketing, customer retention, and customer loyalty are examined reflectively. The assessment of the reflective measurement model involves several criteria. These include a loading factor of at least 0.70, Cronbach's alpha, and an average variance extracted (AVE) of at least 0.50. Additionally, the model's discriminant validity is evaluated using the Fornell and Lacker criteria, the Heterotrait Monotrait Ratio (HTMT) should be no more than 0.90, and cross loadings are also considered. (Hair et al., 2021). HTMT is the ratio of heterotrait (the average correlation between items measuring different variables) to the root of the geometric product of monotrait (the correlation between items measuring the same variable) (Yamin, 2023).

Table 1: Demographic profile of laying hen farmers in South Sulawesi, Indonesia

Description	Criteria	Frequency	Percentage % (n =150)
Age (Years)	20-30	33	22
	31-40	38	25
	41-50	45	30
	51-60	34	23
Education	Didn't go to school/didn't finish elementary school	15	10
	Elementary school	20	13
	Junior High School	29	19
	Senior High School	43	29
	Diploma (D3)	5	3
	Bachelor's Degree (S1)	38	25
Gender	Male	132	88
	Female	18	12
Business Scale (heads)	≤10000	105	70
	10001-20000	24	16
	20001-30000	6	4
	30001-40000	0	0
	40001-50000	3	2
	50001-60000	3	2
	>60000	9	6
Length of Farming (Years)	1 s/d 10	102	68,0
	11 s/d 20	41	27,3
	21 s/d 30	6	4,0
	>30	1	0,7
Annual Income (US$)	≤1529.01	0	0
	>1529.01-3058.02	10	7
	>3058.02-4587.03	35	23
	>4587.03-6116.04	20	13
	>6116.04	85	57

Table 2: Measurement Model Results

Construct	Outer Loading	Cronbach Alpha	Composite Reliability	AVE
Relationship Marketing				
I receive a guarantee for the products I have purchased.	0.776	0.942	0.951	0.708
The company is consistent in providing services.	0.806			
The company fulfills the promises it has made.	0.849			
The company offers excellent service.	0.846			
The company provides information about the product.	0.836			
The company provides reliable and accurate information.	0.917			
The company responded quickly to the complaints I made.	0.841			
The company has the ability to handle complaints.	0.856			
Customer Retention				
I am satisfied with the product I purchased.	0.818	0.946	0.955	0.729
I have no concerns about the products I purchased.	0.789			
I recommend the product to others.	0.810			
I consistently purchase the same product and do not switch to other products.	0.893			
I express positive opinions about the product to others.	0.899			
I have never been disappointed with my purchases of this product.	0.932			
I consistently showcase the excellence of the product to others.	0.823			
If I switch to a different producer, I am concerned about potential financial losses associated with joining a new producer.	0.855			
Customer Loyalty				
I recommend the product to relatives or family.	0.955	0.953	0.964	0.843
I recommend the product to business colleagues.	0.927			
I recommend the product to friends or individuals in the same profession (in this case, the laying hen farming business).	0.933			
I continue to make purchases consistently even when there are negative aspects associated with the product.	0.866			
I am not affected by other similar products with different brands.	0.906			

Source : Survey data, generated by SmartPLS® 4.0.Note. AVE = average variance extracted.

Table 2 presents several indicators to assess the quality of the model under analysis, comprising a measurement model and a structural model. The analyzed measurement model consists of three constructs: Relationship Marketing (RM), Customer Retention (CR), and Customer Loyalty (CL), each consisting of 8, 8, and 5 observed variables, respectively

The relationship marketing variable was assessed using eight valid assessment items, with outer loading values ranging from 0.776 to 0.917. There is a significant association between the eight measurement items in explaining marketing ties within layer feed companies (Table 2). The relationship marketing variable has a high level of reliability, as indicated by a composite reliability value of 0.951 and a Cronbach's alpha of 0.942. Both values exceed the threshold of 0.70, which is considered acceptable. Furthermore, the presence of convergent validity is demonstrated by an average variance extracted (AVE) of 0.708, which above the suggested threshold of 0.50. Out of the eight relevant measuring items, two are particularly notable for showing the strength and durability of relationship marketing. RM 6 (LF=0.917) focuses on providing dependable and precise information regarding animal feed items for laying hens, while RM 8 (LF=0.856)

deals with effectively managing complaints from customers who purchase layer feed. These two areas demonstrate greater connections.

That the customer retention variable was assessed using eight valid measurement items, each having outer loading values ranging from 0.789 to 0.932. This demonstrates the reliability of the eight assessment criteria in accurately assessing customer retention in layer feed firms. The customer retention variable is considered trustworthy, as it has a composite reliability and a Cronbach's alpha that is more than the threshold of 0.70 (indicating dependability). Furthermore, the presence of convergent validity is demonstrated by an average variance extracted (AVE) of 0.729, which is above the recommended threshold of 0.50 and satisfies the requirements for strong convergent validity. Out of the eight valid measurement items, CR 7 and CR 6 had the highest outside loadings (0.932 and 0.899, respectively), demonstrating their strong connection to the aspects of never being disappointed with purchases and sharing positive comments about the product to others. These two things have been functioning efficiently in layer feed companies and require maintenance.

That the customer loyalty variable was assessed using five valid measurement items, with outer loading values ranging from 0.955 to 0.866. This demonstrates the soundness of the five measurement items, proficiently encompassing the assessment of client loyalty within the organization. The customer loyalty variable is considered to have a satisfactory level of reliability, as indicated by a composite reliability and a Cronbach's alpha that above the threshold of 0.70, which is the standard for dependability. Furthermore, the robustness of convergent validity is demonstrated by an average variance extracted (AVE) of 0.843, exceeding both the required threshold and value of 0.50, so satisfying the criterion for robust convergent validity. In total, the factors account for 84.3% of the variation in measurement items. Out of the five valid measurement items, CL 1 and CL 3 have the highest outer loadings (0.955 and 0.933, respectively), indicating their relevance to recommending products to relatives or family and recommending products to friends or individuals in the same profession (specifically, the laying hen farming business). These two products have been functioning efficiently in the organization and need upkeep.

Discriminant validity evaluation necessitates an examination of the Fornell and Lacker criteria. Discriminant validity is an assessment method used to verify if variables are distinct in theory and have been substantiated by empirical evidence or statistical analysis. Fornell and Lacker's criterion states that the average variance extracted (AVE) of a variable should be higher than the correlation between that variable and other variables. HTMT is recommended because to its higher sensitivity and accuracy in detecting discriminant validity (Hair et al., 2019).

Table 3 shows the Fornell and Lacker criteria and HTMT, both methods used in statistical analysis. Fornell and Lacker's criterion states that the root AVE of a variable must exceed the correlation between the variables. The AVE root (0.918) surpasses the correlation with customer retention (0.854) and the correlation with relationship marketing (0.842) for the customer loyalty variable. These results confirm that the customer loyalty variable has met the criteria for discriminant validity.

Table 3: Discriminant Validity of Constructs.

Variabel	CL	CR	RM
Discriminant Validity: Fornnel–Larcker Criterion			
CL	0.918		
CR	0.853	0.854	
RM	0.602	0.682	0.842
Heterotrait Monotrait Ratio (HTMT)			
CL			
CR	0.897		
RM	0.624	0.701	

Source: Survey data, generated by SmartPLS® 4.0. Note. Diagonal values represent AVE, while other values represent the squared correlation. CL = Customer Loyalty; CR = Customer Retention; RM = Relationship Marketing; AVE = Average Variance Extracted

Evaluation of Structural Model

The study presents the coefficients of determination (R2) and path coefficients for measuring the structural model. Table 4 shows the evaluation results of the structural model to confirm its acceptability, demonstrating the lack of multicollinearity between variables with a variance inflation factor (VIF) below 5 and reliable parameter estimations. The R square value, derived from the processing data, demonstrates that the impact of relationship marketing on customer retention is 46.6%, indicating a moderate effect. Moreover, the combined impact of relationship marketing and customer retention on customer loyalty is 72.9%, indicating a significant influence. The Q-square value is a quantitative measure employed in Partial Least Squares (PLS) analysis to evaluate the soundness and predictive utility of the model. A Q-square score above 0 validates the model's predictive capability (Hair et al., 2019). The SRMR model value is 0.095, which falls within an acceptable fit (Schermelleh-Engel et al., 2003). The robustness examination, which includes assessing linearity and heterogeneity, demonstrates satisfactory outcomes. The variable has a square p-value greater than 0.05, suggesting a linear association between variables. The BIC and CAIC values of the PLS model confirm heterogeneity in the structural model, showing that a 1 segment model is preferred over a 2 segment model.

The study presents the R2 values and path coefficients for measuring the structural model. In SmartPLS 4.0, the bootstrapping approach was utilized using an original sample of 10,000 replies (n=150) to calculate t-values and standard errors. The structural model displays graphs depicting the path coefficients and magnitudes, Fig. 2 is showing the path relationship among variables.

The results of hypothesis testing as follows.

1. The first hypothesis (H1), which has a path coefficient of 0.682 and a p-value of 0.000, or less than 0.05, is accepted and shows that relationship marketing has a significant impact on boosting client retention.
2. The second hypothesis (H2) is not supported by the data; the path coefficient is 0.038 and the p-value is 0.566, both of which are more than 0.05, suggesting that relationship marketing and the growth in customer loyalty are not significantly related.

Table 4: Hypothesis Testing/Structural Model Testing.

Hipotesis	Path Coefficient	P-Value	95% Path Coefficient Confidence Interval		Test Results/Sig	VIF	F Square	R Square	Q Square
			Lower limit	Upper limit					
H1. RM -> CR	0.682***	0.000	0.436	0.840	Support	1.000	0.871	0.466	0.566
H2. RM -> CL	0.038	0.566	-0.094	0.169	Does not support	1.871	0.003	0.729	0.361
H3. CR -> CL	0.827***	0.000	0.685	0.954	Support	1.871	1.347		

*sig 5%, ** sig 1%, *** sig<1%; Source: Survey data, generated by SmartPLS® 4.0.

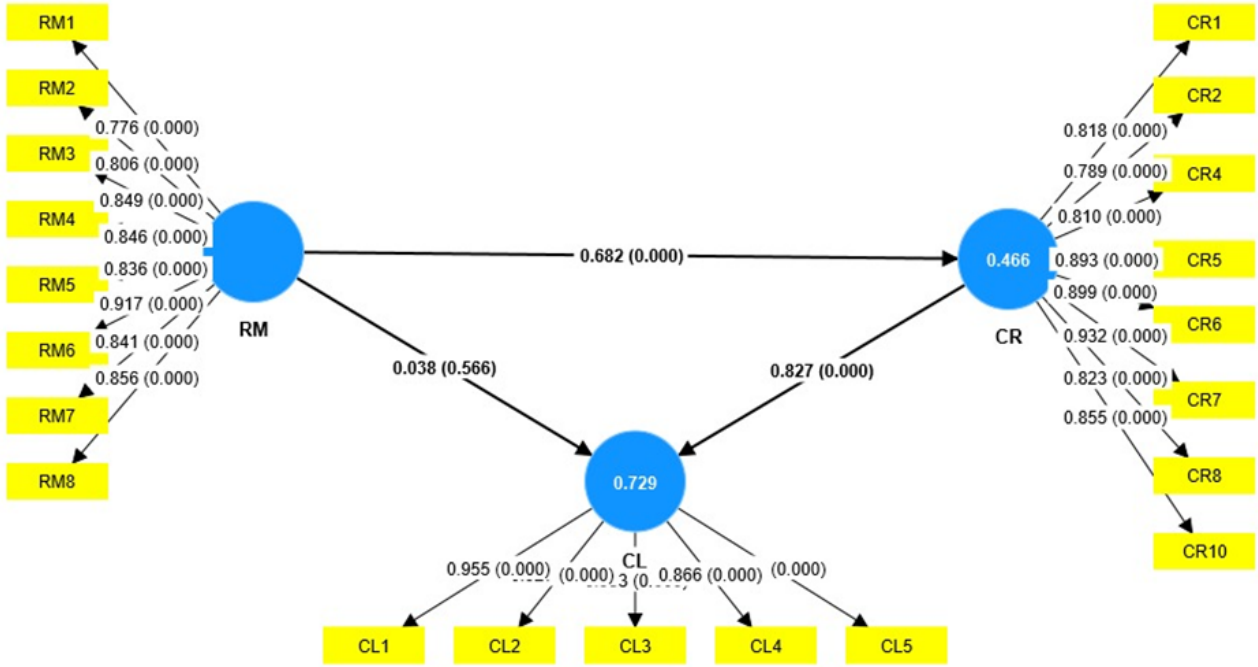

Fig. 2: Path Coefficient and P-Values diagram.

3. The third hypothesis (H3), which has a path coefficient of 0.827 and a p-value of 0.000, which is less than 0.05, is accepted and shows a strong impact of customer retention on boosting customer loyalty.

PLS predict serves as a means of assessing the reliability and accuracy of the PLS prediction test. In order to demonstrate the strong predictive capability of the PLS results, it is necessary to compare them with the fundamental linear regression model (LM). The PLS model is considered to possess predictive capability if the size of the Root Mean Squared Error (RMSE) or Mean Absolute Error (MAE) of the PLS model is smaller than that of the linear regression model (Table 5).

Based on the processing findings from the aforementioned observations, it can be concluded that the PLS model exhibits reduced RMSE and MAE values for the 13 measurement items compared to the LM model (linear regression). This suggests that the proposed Partial Least Squares (PLS) model possesses a significant level of predictive capability.

DISCUSSION

Demographic Profile of Layer Farmers

The profile of respondents in this study was categorized based on several attributes, including age, education level, gender, business scale, length of farming, and annual income. Laying hen farming in South Sulawesi is predominantly represented by respondents aged between 41 and 50 years and 31 and 40 years, constituting 30% and 25%, respectively. The youngest respondent was 20 years old, while the oldest was 60 years old, indicating that all respondents fall within the productive age range.

Table 5: PLS Predict

	Q^2predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
CL1	0.330	0.642	0.469	0.617	0.425
CL2	0.311	0.653	0.505	0.635	0.466
CL3	0.372	0.577	0.441	0.578	0.410
CL4	0.274	0.493	0.376	0.483	0.362
CL5	0.173	0.842	0.541	0.805	0.532
CR1	0.393	0.433	0.292	0.414	0.261
CR2	0.260	0.449	0.314	0.453	0.308
CR4	0.282	0.709	0.519	0.653	0.458
CR5	0.275	0.752	0.446	0.716	0.436
CR6	0.414	0.523	0.351	0.465	0.310
CR7	0.396	0.481	0.320	0.467	0.311
CR8	0.234	0.733	0.512	0.711	0.533
CR10	0.234	0.726	0.422	0.683	0.397

Source: Survey data, generated by SmartPLS® 4.0.

Regarding education level, the majority of respondents hold a high school education, accounting for 29%, followed by those with a bachelor's degree at 25%. 3% of respondents attained a D3 education, 19% completed junior high school, 13% completed elementary school, and 10% reported having no education or formal schooling. Education significantly affects an individual's comprehension of the decision making process when purchasing a product. Higher levels of education correlate with a greater likelihood of understanding the decision making aspects related to product purchases (Gundala & Singh, 2021).

The gender distribution among respondents skewed towards males, comprising 88%. This gender distribution is

conducive to providing information related to decision making processes in product purchases, as this responsibility is commonly shouldered by men. However, the impact of gender on business mobility cannot be isolated from the effect of two preceding factors, namely age and education level (FAO, 2013).

Farming experience is quantifiable based on the duration (length of time) during which the respondent has been engaged in laying hen farming activities. The highest percentage of farming experience falls within the range of 1 to 10 years, constituting 68%, followed by 11 to 20 years of farming experience at 27.3%, 21 to 30 years at 4%, and those who have been involved for more than 30 years at 0.7%. This indicates that respondents possess considerable experience in operating a laying hen farming business. The duration of their farming activities suggests a likelihood that farmers are receptive to information provided by instructors or personnel from the company, affecting their willingness to adapt their farming practices (Mariyono et al., 2022).

Annual income is measured from the total earnings in the laying hen farming business. The majority of respondents reported an annual income exceeding $100 million, accounting for 57%, followed by an annual income ranging between $50 and $75 million at 23%. Other income categories include >25–50 million at 7% and >75–100 million at 13%. This is because customers are loyal to one product. This loyalty to one particular product among customers contributes to their increased likelihood of accepting cross-selling offers (additional products or services) and up-selling (upgrades to more expensive products or services). Such practices can enhance transaction value and revenue per customer (Park & Yoon, 2022).

Evaluation of Measurement Model

The relationship marketing variable was assessed using eight valid assessment items, with outer loading values ranging from 0.776 to 0.917. There is a significant association between the eight measurement items in explaining marketing ties within layer feed companies. The relationship marketing variable is considered to be very reliable, as indicated by its composite reliability value of 0.951 and Cronbach's alpha of 0.942, both surpassing the minimum requirement of 0.70. In addition, the presence of convergent validity is demonstrated by an average variance extracted (AVE) of 0.708, which above the required threshold of 0.50. Out of the eight relevant measuring items, two are particularly notable for showing the strength and durability of relationship marketing. RM 6 (LF = 0.917) focuses on providing dependable and precise information regarding animal feed items for laying hens, while RM 8 (LF = 0.856) deals with effectively addressing complaints from customers who purchase layer feed. These two areas demonstrate greater connections. Trust has a crucial role in marketing theory, especially when it comes to establishing strong relationships, namely customer trust in layer feed. The provision of dependable and precise information is recognized as a crucial measure in developing and maintaining customer confidence in layer feed, in accordance with established literature. (Brown et al., 2019; Hakim et al., 2021; Cardoso et al., 2022). Trust and commitment are identified as fundamental elements in relationship marketing, and layer feed companies must prioritize these aspects in their interactions with customers (Palmatier, 2008; Brown et al., 2019; Paparoidamis et al., 2019; Ozdemir et al., 2020; Zeren & Kara, 2021; Cardoso et al., 2022). The application of relationship marketing underscores the significance of adeptly managing company relationships with layer feed customers, including the effective handling of complaints (Palmatier, 2008; Padilla & Ascarza, 2021). Handling layer feed customer complaints is part of an effort to improve overall service quality, as layer feed companies always place technical support to farmers directly in the field to provide solutions to complaints obtained. Improved service quality can strengthen the relationship between feed customers and the layer feed company. (Asnawi et al., 2023; Nilashi et al., 2023).

The customer retention variable was assessed using eight valid measurement items, with outer loading values ranging from 0.789 to 0.932. This demonstrates the reliability of the eight measurement items, accurately assessing client retention in layer feed firms. The customer retention variable is considered to have an adequate level of reliability, as indicated by a composite reliability and Cronbach's alpha that surpass the threshold of 0.70 (reliable). Furthermore, the presence of convergent validity is demonstrated by an average variance extracted (AVE) of 0.729, which above the recommended threshold of 0.50 and satisfies the requirements for strong convergent validity. Out of the eight valid measurement items, CR 7 and CR 6 had the highest outside loadings (0.932 and 0.899, respectively), demonstrating their strong connection to the aspects of never being disappointed with purchases and sharing positive comments about the product to others. These two things have been functioning efficiently in layer feed companies and require maintenance. In total, the factors account for 72.9% of the variation in measurement items. Customer retention relies not just on customer dissatisfaction, but also on the essential requirement of internalizing other impressions, such as assessing service quality, which ultimately leads to customer trust and loyalty in layer feed. (Odunlami, 2014; Zhao et al., 2020; Artha et al., 2022). For layer feed companies, customer satisfaction with layer feed is foundational for maintaining competitiveness, securing a competitive advantage, and fostering long term relationships with layer feed customers (Carranza et al., 2018; Oliveira et al., 2021). The quality of service provided by layer feed companies and the satisfaction of layer feed customers are paramount success factors, particularly when customers make repeat purchases (Odunlami, 2014; Alshurideh, 2016; Bahri-Ammari & Bilgihan, 2019; Andayani, 2021; Fook & Dastane, 2021; Artha et al., 2022; Fan et al., 2023; Hochstein et al., 2023; B. Li et al., 2023; Wu & Dong, 2023).

The customer loyalty variable was assessed using five valid measurement items, each having outer loading values ranging from 0.955 to 0.866. This demonstrates the

reliability of the five assessment items in accurately assessing client loyalty within the organization. The customer loyalty variable is considered to be dependable, as indicated by a composite reliability and a Cronbach's alpha that both above the threshold of 0.70. Furthermore, the convergent validity is demonstrated by an average variance extracted (AVE) of 0.843, which above the required threshold of 0.50, thus achieving the criterion for strong convergent validity. In total, the factors account for 84.3% of the variation in measurement items. Among the five valid measurement items, CL 1 and CL 3 stand out with the highest outer loadings (0.955 and 0.933, respectively), indicating their relevance to aspects such as recommending products to relatives or family and recommending products to friends or individuals in the same profession (in this case, the laying hen farming business). These two items have been operating effectively in the company and require maintenance. Customer loyalty is deemed successful when customers engage in word-of-mouth (WOM) by recommending products to relatives (Ngoma & Ntale, 2019). Saragih et al., (2022) Recommending products through word of mouth significantly affects consumer purchasing decisions. Active recommendations from loyal customers can enhance brand appeal and foster increased loyalty (Zeqiri et al., 2023).

Discriminant validity evaluation assesses the measurement model to confirm that the variables are conceptually separate and have been tested using empirical or statistical means. For this objective, two approaches were utilized: the Fornell and Lacker criteria and HTMT. According to Fornell and Lacker's criteria, the root average variance extracted (AVE) of a variable must exceed the correlation between the variables. The AVE root (0.918) surpasses the correlation with customer retention (0.854) and the correlation with relationship marketing (0.842) for the customer loyalty variable. These results confirm that the customer loyalty variable meets the criteria for discriminant validity. Similarly, customer retention and relationship marketing demonstrate discriminant validity, since the root AVE exceeds the correlation between the variables. HTMT is another recommended measure for assessing discriminant validity. Hair et al. (2019), which method is deemed more sensitive or precise in detecting discriminant validity. The suggested criterion is less than 0.90. The test findings show that the HTMT values for the variable pairings are less than 0.90, which confirms that discriminant validity has been achieved. Variables have a higher degree of shared variation with the items that measure them, compared to the variance of other variable items.

Evaluation of Structural Model

The evaluation of the structural model is associated with testing the hypotheses regarding the effect of research variables (Hair et al., 2019). The examination of the structural model involves checking for the absence of multicollinearity between variables using an Inner Variance Inflated Factor (VIF) measure below 5. Additionally, it includes hypothesis testing and determining 95% confidence intervals for estimated path coefficient parameters. The direct variable effect at the structural level is also evaluated, measured through the F square metric (where F square values of 0.02 indicate a low effect, 0.15 a moderate effect, and 0.35 a high effect).

The overall evaluation of the model includes R Square with the criteria from Chin (1998), namely 0.19 (indicating a low effect), 0.33 (indicating a moderate effect), and 0.66 (indicating a high effect). Additionally, Q Square should be above 0, and the Standardized Root Mean Square Residual (SRMR) should be below 0.08, or within the range of 0.08–0.10, for an acceptable fit, according to (Schermelleh-Engel et al., 2003; Hair et al., 2019). The PLS Predict indicated by the RMSE and MAE of the PLS model (Table 5), was lower than that of the LM (Hair et al., 2019), and the robustness check consists of the linearity and heterogeneity of structural models with FIMIX PLS (Sarstedt et al., 2019).

The structural model's evaluation findings confirm its acceptability, showing strong parameter estimates and no multicollinearity amongst variables with an inner variance inflated factor (VIF) of less than 5. Based on the processing findings, the R square value shows that relationship marketing has a moderate 46.6% impact on client retention. Additionally, there is a 72.9% (strong effect) cumulative effect of relationship marketing and client retention on customer loyalty. In PLS, the Q-square value expresses the predictive relevance of the model and is used as a measure of validity. When the Q-square value is greater than zero, the model's predictive (Hair et al., 2019). The SRMR model value is 0.095, which falls within an acceptable fit (Schermelleh-Engel et al., 2003). The robustness assessment, which includes evaluating linearity and heterogeneity, demonstrates satisfactory outcomes. The variable has a square p-value greater than 0.05, suggesting a linear association between variables. The BIC and CAIC values of the PLS model confirm heterogeneity in the structural model, showing that a 1 segment model is preferred over a 2-segment model.

Based on the results of hypothesis testing, the findings are as follows:

The first hypothesis (H1), which has a path coefficient of 0.682 and a p-value of 0.000, or less than 0.05, is accepted and shows that relationship marketing has a significant impact on boosting client retention. This implies that any modification to relationship marketing will raise customer retention in proportion. The impact of customer retention on improving relationship marketing lies in the 95% confidence interval, which spans from 0.436 to 0.840. Moreover, the effect of relationship marketing on increasing customer retention exhibits a high mediating effect at the structural level (F square=0.871). This underscores the importance of implementing a program to enhance relationship marketing, as it is considered very important. When there is a company policy aimed at boosting relationship marketing, the expected increase in customer retention is up to 0.840.

Palmatier (2008) In executing an effective relationship marketing strategy, companies should prioritize factors such as commitment, trust, communication, and reciprocal relationships. The persistence of layer feed customers

within the company is attributed to these factors. Commitment represents the company's desire to sustain positive relationships with customers; trust involves mutual trust between the company and customers; communication fosters shared interpretations of long term hopes and goals among personnel; and reciprocal relationships indicate satisfaction from both parties with the existing relationship (Oliveira et al., 2021). Hence, it is imperative for layer feed companies to maintain and continually enhance these aspects. This can be achieved by consistently reminding all employees to remain committed, foster trust, and actively build positive relationships with customers (Nasir, 2017).

The second hypothesis (H2) is not supported by the data; the path coefficient is 0.038 and the p-value is 0.566, both of which are more than 0.05, suggesting that relationship marketing and the growth in customer loyalty are not significantly related. This suggests that changes made to relationship marketing have little bearing on client loyalty. These findings align with the results obtained by (Zulkifli, 2012), suggesting that commitment and satisfaction, as factors of relationship marketing, have no effect on customer loyalty, while the trust factor does have an effect. Additionally, (Kim & Sullivan, 2019) mentioned in his book that loyalty is shaped by the level of brand sensitivity. Commitment, characterized as a statement of attitude and not yet a reality, does not affect loyalty. Reciprocal relationships also do not affect loyalty, indicating that this factor is more likely to affect the level of customer satisfaction in transactions. With customer satisfaction, the expectation is that customers will not switch to other products. Nevertheless, despite the lack of a direct effect on customer loyalty, relationship marketing does impact customer retention, in addition to the trust and customer retention variables that affect customer loyalty. Therefore, companies should prioritize attention to these three variables in their marketing strategy, as all three variables concurrently affect customer retention, subsequently affecting customer loyalty.

The third hypothesis (H3), which has a path coefficient of 0.827 and a p-value of 0.000, which is less than 0.05, is accepted and shows a strong impact of customer retention on boosting customer loyalty. This implies that any modification to customer retention will result in a rise in consumer loyalty. The impact of customer loyalty on improving customer retention falls between 0.685 and 0.954 in the 95% confidence interval. Moreover, the effect of customer retention on increasing customer loyalty exhibits a high mediating effect at the structural level (f square=1.347). Consequently, there is a need for a company program to enhance customer retention efforts, which is considered highly important. When there is a company policy aimed at increasing customer retention, the expected increase in customer loyalty is up to 0.954.

Hair et al. (2019) state that partial least squares is a structural equation modeling (SEM) analysis with predictive purposes. To demonstrate the suggested model's predictive ability, a measure of model validation must be developed. The PLS prediction test's strength is validated by the use of PLS prediction. It is necessary to compare the PLS results with the fundamental model, the LM, in order to determine whether the PLS results have a good degree of predictive power. If the PLS model's MAE or RMSE is less than the linear regression model's, the PLS model is said to have predictive power.

- The PLS model demonstrates strong predictive potential if all of its measurement items show lower RMSE and MAE values than the linear regression model.
- If most items show lower values, it indicates medium predictive power.

The RMSE and MAE values for the 13 measurement items show that there are fewer measurement items in the PLS model with RMSE and MAE values than in the LM model (linear regression), which is based on the processing results from the aforementioned observations. This suggests that there is significant predictive value in the suggested PLS model.

Conclusion

Based on the findings and discussion, it can be concluded that relationship marketing is a crucial component for companies, especially in the field of animal husbandry. This is evidenced by findings indicating that relationship marketing, encompassing trust, commitment, communication, and reciprocal relationships, significantly affects customer retention. While relationship marketing does not directly affect customer loyalty, it notably affects the trust factor. Moreover, customer retention has a significant effect on customer loyalty.

Conflict of Interest

The author(s) have stated that they have no potential conflicts of interest regarding the research, authorship, and/or publication of this paper.

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validation, visualization, as well as the writing of the review and editing.

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