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The Effect of Customer Relationship Management and Service Quality on Customer Loyalty at PT Sinar Biru Sentosa, Jakarta

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Abstract

This study aims to examine the influence of *Customer Relationship Management* and service quality on customer loyalty at PT Sinar Biru Sentosa, Jakarta, both partially and simultaneously. The study was motivated by the phenomenon of fluctuating customer loyalty, evidenced by a decline in repeat purchase frequency and an increase in customer complaints regarding delivery delays and suboptimal service responsiveness. A quantitative approach was employed using multiple linear regression analysis assisted by SPSS 26 software. The study population comprised all 133 active customers of PT Sinar Biru Sentosa, Jakarta, with a sample of 100 respondents determined using Slovin's formula via simple random sampling. The findings indicate that *Customer Relationship Management* has a positive and significant effect on customer loyalty, with a significance value of 0.000 (< 0.05). Conversely, service quality does not show a significant effect on customer loyalty, with a significance value of 0.498 (> 0.05). Simultaneously, *Customer Relationship Management* and service quality significantly influence customer loyalty, contributing 15.6%, while the remainder is influenced by factors outside the scope of this study model.

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1. Introduction

Business competition in the distribution and trading sectors has become increasingly challenging due to globalization, technological advancement, and changes in consumer behavior. The development of digital technology has transformed customer expectations, where consumers no longer evaluate companies only based on product availability, price, and quality, but also consider service experience, communication effectiveness, responsiveness, and the quality of relationships established with companies. This transformation has encouraged companies to shift from a transactional business orientation toward a relational approach that emphasizes long-term engagement and sustainable customer relationships. Companies that are able to establish strong relationships with customers tend to have greater opportunities to maintain loyalty because customers perceive higher value and trust in continuous interactions with the company (Zegullaj et al., 2023; Ramadhan & Fikriah, 2024).

Customer loyalty has become an important strategic issue in modern marketing management because loyal customers contribute not only through repeated purchasing behavior but also through positive recommendations and stronger commitment toward companies. In highly competitive markets, retaining existing customers becomes essential because customer decisions are increasingly influenced by their overall experiences with companies. Customers tend to remain loyal when they receive consistent value, reliable services, and positive interactions throughout the relationship process. Therefore, companies need to understand the factors that influence loyalty formation, particularly factors related to customer relationship management and service performance (Nurcahaya et al., 2022; Abdullah et al., 2025).

The distribution sector has unique characteristics because business sustainability depends not only on product quality but also

on operational reliability, delivery accuracy, product availability, and continuous communication with customers. Unlike manufacturing companies that mainly focus on production performance, distribution companies must ensure that products reach customers at the right time, in the right quantity, and with appropriate service support. Any failure in delivery processes, complaint handling, or communication may influence customer perceptions and reduce their willingness to continue the business relationship. Therefore, distribution companies need to develop customer-oriented strategies that integrate relationship management and service improvement to strengthen customer loyalty.

PT Sinar Biru Sentosa, Jakarta represents a business context where maintaining customer loyalty remains an important challenge. The company has customers who consistently conduct repeat purchases, indicating the existence of strong customer relationships. However, there are also indications of declining transaction frequency and customer complaints related to delivery delays and less optimal service responsiveness. This phenomenon shows that customer loyalty has not been equally established among all customers. Some customers have developed strong commitment toward the company, while others remain influenced by service performance and relationship quality. Therefore, understanding the factors that influence customer loyalty becomes important for improving customer retention strategies.

One of the strategic approaches widely applied to strengthen customer loyalty is Customer Relationship Management (CRM). CRM is a management strategy that focuses on developing and maintaining relationships between companies and customers through effective communication, customer understanding, trust building, and continuous interaction. CRM enables companies to collect customer information, identify customer needs, provide personalized services, and create long-term relationships that generate mutual benefits. Therefore, CRM is not merely a technological system but also a strategic philosophy that places customers as the central focus of business activities (Putra et al., 2024).

The implementation of CRM is closely associated with several relationship dimensions, including communication, commitment, trust, and conflict management. Effective communication allows companies to understand customer expectations and respond to customer needs more accurately. Trust encourages customers to maintain relationships with companies because they believe that companies are able to provide reliable solutions. Meanwhile, commitment reflects the willingness of both parties to maintain long-term relationships. Through these mechanisms, CRM can improve customer retention and strengthen customer loyalty. Previous research confirms that CRM practices contribute positively to customer loyalty because effective relationship management increases customer attachment and encourages continued engagement with companies (Putra et al., 2024; Pinaraswati et al., 2023).

In addition to CRM, service quality is another important determinant of customer loyalty. Service quality reflects the extent to which company services meet or exceed customer expectations. In the distribution industry, service quality includes delivery reliability, responsiveness in handling customer requests, accuracy of information, and consistency in fulfilling customer needs. Customers who perceive high service quality are more likely to experience satisfaction and develop stronger commitment toward the company. Conversely, poor service quality may create dissatisfaction and increase the possibility of customers switching to competitors (Nurcahaya et al., 2022).

The relationship between service quality and customer loyalty is often explained through customer satisfaction and trust mechanisms. When customers receive services that are consistent with their expectations, they are more likely to develop positive perceptions toward the company. This positive experience encourages repeat purchases and strengthens long-term relationships. Research shows that service quality, customer satisfaction, and commitment are important factors associated with customer loyalty because they influence how customers evaluate their relationship with companies (Nurcahaya et al., 2022; Sukma et al., 2024).

CRM and service quality should not be viewed as separate strategies because both factors complement each other in creating sustainable customer relationships. Previous empirical evidence demonstrates that CRM and service quality simultaneously contribute to customer loyalty by strengthening customer relationships and improving service

experiences. This indicates that companies need to integrate relationship management strategies with service improvement initiatives to achieve sustainable customer retention (Yauwerissa & Putra, 2021).

CRM focuses on managing customer interactions and strengthening relational bonds, while service quality ensures that customers receive satisfactory experiences during every interaction with the company. The integration of effective CRM practices and high-quality services enables companies to create stronger customer value and increase customer loyalty. Previous studies indicate that CRM and service quality simultaneously contribute to customer loyalty by improving customer satisfaction and strengthening customer relationships (Hidayati et al., 2021; Yanti et al., 2025).

Previous studies have extensively examined the relationship between CRM, service quality, and customer loyalty; however, the findings indicate variations depending on industry characteristics and research contexts. Research in the banking and service sectors generally demonstrates that relationship management and service quality contribute significantly to loyalty formation. Customer relationship marketing has been found to strengthen loyalty by improving interactions, trust, and emotional connections between companies and customers (Zegullaj et al., 2023). Similarly, CRM dimensions such as communication, commitment, trust, and conflict management have been shown to support customer retention and relationship sustainability (Putra et al., 2024).

Studies focusing on service quality also demonstrate that service performance plays an important role in shaping customer loyalty. Previous research also highlights that relationship marketing and service quality jointly contribute to customer loyalty by strengthening customer perceptions of value and improving relationship quality. These findings indicate that loyalty formation is influenced not only by transactional factors but also by the company's ability to maintain continuous relationships and deliver consistent service experiences (Luthfi et al., 2023).

High-quality services create positive customer experiences that encourage satisfaction and repeated purchasing behavior. Research indicates that CRM and service quality influence loyalty through customer satisfaction mechanisms, suggesting that companies need to combine relationship strategies with consistent service delivery to maintain customers over time (Ramadhan & Fikriah, 2024). Furthermore, CRM and service quality have been found to contribute to loyalty in various business contexts, indicating that customer retention depends not only on product value but also on relationship quality and service performance (Widjaya & Ritonga, 2024).

Although previous studies provide valuable insights, several research gaps remain. First, many previous studies have focused on banking, hospitality, telecommunications, and service industries, while empirical studies examining CRM and service quality in distribution companies remain relatively limited. Second, distribution businesses have different operational characteristics because customer satisfaction is strongly influenced by delivery accuracy, product availability, and service responsiveness. Third, inconsistent findings regarding the influence of CRM and service quality on loyalty indicate that these relationships may depend on organizational context and customer characteristics.

Based on these gaps, this study aims to examine the effect of Customer Relationship Management and service quality on customer loyalty at PT Sinar Biru Sentosa, Jakarta. The novelty of this research lies in its focus on the distribution sector, which has received less attention compared with service-oriented industries. By examining CRM and service quality simultaneously, this study provides empirical evidence regarding how relationship management and service performance contribute to customer loyalty development. The findings are expected to provide theoretical contributions to relationship marketing literature and practical implications for companies in designing strategies to retain customers through stronger relationships and improved service quality.

2. Literatur Review

2.1 Customer Relationship Management

Customer Relationship Management (CRM) is a strategic approach in marketing management that focuses on establishing, maintaining, and developing long-term relationships between companies and customers. CRM is not only understood as a customer information management system but also as a business philosophy that positions

customers as strategic assets through value creation, improved interaction, and continuous relationship development. In an increasingly competitive business environment, CRM has become an important instrument for companies to understand customer needs, enhance customer experiences, and maintain valuable relationships over the long term (Zegullaj et al., 2023).

The implementation of CRM involves systematic processes for managing customer information, understanding customer behavior, and providing services that are more aligned with individual customer needs. Through CRM practices, companies can establish more effective communication, increase customer trust, and create commitment within business relationships. Strong customer relationships enable companies to improve customer retention because customers feel more valued and develop stronger attachment toward the company. Communication, trust, commitment, and conflict management are important elements in successful CRM implementation because they determine the quality of relationships established between companies and customers (Putra et al., 2024).

CRM also plays an important role in creating more personalized customer experiences through the utilization of customer information to provide more targeted services. Companies that are able to integrate CRM strategies with service activities can improve customer satisfaction and strengthen the possibility that customers will maintain long-term relationships with the company. Therefore, CRM is not only oriented toward increasing transactions but also toward creating long-term relationships that provide mutual benefits for both companies and customers. Effective CRM implementation has been shown to have a positive relationship with customer loyalty because it improves relationship quality and enhances customer-perceived value (Hidayati et al., 2021; Pinaraswati et al., 2023).

Furthermore, CRM implementation has been widely recognized as an important mechanism for improving customer satisfaction and loyalty. Effective CRM practices enable companies to manage customer information, develop personalized interactions, and create value-based relationships that encourage customers to maintain long-term engagement with the company. Previous research confirms that CRM has a significant relationship with customer satisfaction and customer loyalty, indicating that companies with stronger relationship management capabilities tend to achieve higher levels of customer retention (Haryandika & Santra, 2021).

In the context of this study, Customer Relationship Management is defined as a company strategy for managing customer relationships through effective communication, trust development, commitment enhancement, and continuous customer interaction management. CRM is considered an important factor that can improve customer loyalty because strong relationships between companies and customers encourage customers to continue using the company's products or services over the long term (Putra et al., 2024; Zegullaj et al., 2023).

2.2 Service Quality

Service quality is an important concept in marketing that describes a company's ability to fulfill customer needs and expectations through the services provided. Service quality is not only related to the final outcome of service delivery but also includes the interaction process between customers and companies during service encounters. Customers will provide positive evaluations when the services received meet their expectations, whereas differences between expected and actual service experiences may result in customer dissatisfaction (Nurcahaya et al., 2022).

Service quality has a strategic role in shaping customer perceptions of a company because service represents one of the direct forms of interaction experienced by customers. In highly competitive industries, service quality can become a differentiation factor that creates competitive advantages for companies. Dimensions such as reliability, responsiveness, assurance, and the company's ability to understand customer needs are important factors that determine how customers evaluate the quality of services provided (Ramadhan & Fikriah, 2024).

Service quality has been widely examined across various industries, demonstrating its importance in shaping customer satisfaction and loyalty. Empirical evidence from the hospitality sector shows that service quality dimensions influence customer evaluations and contribute to loyalty development through positive service

experiences. This finding confirms that consistent and reliable service delivery is an important foundation for creating favorable customer perceptions and maintaining long-term relationships with companies (Ali et al., 2021).

The relationship between service quality and customer loyalty is generally established through mechanisms involving customer satisfaction and trust. Customers who receive high-quality services tend to develop positive experiences that increase satisfaction and encourage their willingness to maintain relationships with the company. Consistent service quality can also reduce the possibility of customers switching to competitors because customers have already obtained value and experiences that meet their expectations (Nurcahaya et al., 2022).

Furthermore, service quality is closely related to CRM implementation. The influence of service quality on customer loyalty is often explained through customer satisfaction as a mediating mechanism. High-quality services create positive customer experiences that increase satisfaction, which subsequently strengthens customer intention to maintain relationships with companies. Therefore, service quality may not always influence loyalty directly but can operate through psychological evaluations formed during customer interactions (Ningsih & Nurfarida, 2022).

Effective CRM requires consistent service quality because customer relationships cannot be maintained only through communication but also through actual experiences perceived by customers during interactions with the company. The integration between CRM and service quality enables companies to create stronger relationships, increase customer satisfaction, and develop sustainable customer loyalty (Sukma et al., 2024; Widjaya & Ritonga, 2024).

Based on this explanation, service quality in this study is defined as the company's ability to provide services that meet customer expectations through reliability, responsiveness, assurance, and service consistency. High service quality is expected to create positive customer experiences that ultimately contribute to increased customer loyalty.

2.3 Customer Loyalty

Customer loyalty is one of the main indicators of a company's success in maintaining long-term relationships with customers. Loyalty does not only represent customers' behavior in making repeat purchases but also reflects positive attitudes, trust, and commitment toward the company. From the perspective of relationship marketing, customer loyalty is developed through continuous relationships between customers and companies that generate value, satisfaction, and emotional attachment (Zegullaj et al., 2023).

Customer loyalty can be viewed through two main approaches, namely behavioral loyalty and attitudinal loyalty. Behavioral loyalty refers to actual customer actions, such as repeat purchases, maintaining product or service usage, and increasing transaction frequency. Meanwhile, attitudinal loyalty relates to customers' psychological aspects, including trust, preference toward the company, and willingness to recommend products or services to others. These two perspectives demonstrate that customer loyalty is a multidimensional concept that cannot be measured only through purchasing activities but also through customers' emotional relationships with companies (Nurcahaya et al., 2022).

The development of customer loyalty is influenced by various factors, particularly the company's ability to establish strong relationships and provide positive service experiences. CRM contributes to creating closer relationships through communication, trust, and commitment, while service quality ensures that customers receive experiences that meet their expectations. The combination of these two factors can increase customer satisfaction and strengthen customers' decisions to continue choosing the company over competing alternatives (Putra et al., 2024; Ramadhan & Fikriah, 2024).

Previous studies indicate that customer loyalty is not formed directly but through a process of customer evaluation regarding the value provided by companies. When customers perceive that companies understand their needs, deliver quality services, and maintain relationships consistently, they tend to develop stronger commitment to maintaining those relationships. Therefore, customer loyalty in this study is defined as customers' commitment to continue using company products or services, conduct repeat purchases, and provide positive

recommendations to others (Zegullaj et al., 2023; Widjaya & Ritonga, 2024).

3. Method

3.1 Research Design

This study employs a quantitative approach with a causal associative research design to examine the effect of Customer Relationship Management (CRM) and service quality on customer loyalty at PT Sinar Biru Sentosa, Jakarta. The quantitative approach was selected because this study aims to measure the relationship between variables objectively through numerical data obtained from respondents and analyzed using statistical procedures. The causal associative design is appropriate for identifying the extent to which changes in independent variables influence changes in dependent variables through empirical testing (Sofya et al., 2024).

The research variables consist of Customer Relationship Management (X1) and service quality (X2) as independent variables, while customer loyalty (Y) is used as the dependent variable. This study applies a cross-sectional research design, where data collection is conducted at one specific period to describe respondents' perceptions and analyze the relationship among variables based on actual conditions. The cross-sectional approach is commonly applied in survey-based quantitative research because it enables researchers to examine relationships between variables within a defined population at a particular point in time (Sofya et al., 2024).

3.2 Population and Sample

The population in this study consists of active customers of PT Sinar Biru Sentosa, Jakarta, who have conducted transactions with the company at least once. Based on internal company records, the total population consists of 133 customers. The sample size was determined using the Slovin formula with a 5% margin of error, resulting in a final sample of 100 respondents.

The sampling technique applied in this study is probability sampling using simple random sampling. This method was selected because each member of the population has an equal opportunity to be selected as a respondent, allowing the sample to represent the characteristics of the research population. Probability sampling is commonly used in quantitative studies because it supports statistical inference and reduces potential selection bias in sample determination.

3.4 Data Collection and Measurement

Data collection was conducted through observation, questionnaires, and documentation studies. Observation was performed using a non-participatory method to identify service activities, customer interactions, and operational conditions at PT Sinar Biru Sentosa, Jakarta. Documentation was conducted by reviewing relevant company records related to customer information and business activities.

The primary data were collected using questionnaires distributed to 100 respondents through Google Forms. The questionnaire instrument was developed based on the indicators of each research variable and measured using a five-point Likert scale. The Likert scale is widely applied in quantitative research because it allows researchers to measure respondents' perceptions, attitudes, and evaluations toward specific research constructs systematically (Sofya et al., 2024).

Table 1. Likert Scale

No	Response Category	Score
1	Strongly Agree	5
2	Agree	4
3	Neutral	3
4	Disagree	2
5	Strongly Disagree	1

The Customer Relationship Management variable (X1) was measured using indicators consisting of customer identification, trust, commitment, communication, conflict management, and empathy. These indicators represent the company's ability to manage customer relationships through effective communication, relationship development, and customer retention strategies. Previous research indicates that CRM dimensions such as communication, commitment, trust, and conflict management contribute significantly to strengthening customer relationships and improving customer retention (Putra et al., 2024).

The service quality variable (X2) was measured using the SERVQUAL model, which consists of four dimensions: tangibles, reliability, responsiveness, and assurance. The SERVQUAL approach is widely used to evaluate customer perceptions regarding service performance because it measures the gap between customer expectations and perceived service quality. These dimensions represent

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the company's ability to provide reliable, responsive, and consistent services that influence customer satisfaction and loyalty (Nurcahaya et al., 2022; Abdullah et al., 2022).

The customer loyalty variable (Y) was measured through several indicators, including repeat purchase intention, willingness to maintain relationships, recommendation behavior, resistance toward competitors, and emotional attachment. Customer loyalty represents both behavioral and attitudinal dimensions because loyal customers demonstrate not only repeated purchasing behavior but also psychological commitment and willingness to recommend the company to others (Zegullaj et al., 2023).

3.5 Data Analysis Technique

The collected data were analyzed using IBM SPSS Statistics version 26. The data analysis process consisted of several stages, including instrument testing, classical assumption testing, multiple linear regression analysis, and hypothesis testing.

Before conducting further analysis, the research instrument was tested for reliability using Cronbach's Alpha coefficient. Reliability testing was conducted to determine the internal consistency of questionnaire items in measuring research constructs. A Cronbach's Alpha coefficient above 0.70 generally indicates acceptable reliability because the measurement items consistently represent the variables being examined (Taber, 2018).

After reliability testing, classical assumption tests were conducted to ensure that the regression model met statistical requirements. The tests included normality testing using the One-Sample Kolmogorov-Smirnov Test, multicollinearity testing based on tolerance values and Variance Inflation Factor (VIF), and heteroscedasticity testing using the Glejser method. Furthermore, multiple linear regression analysis was applied to determine the effect of CRM and service quality on customer loyalty.

The multiple linear regression model used in this study was formulated to examine the effect of Customer Relationship Management (CRM) and service quality on customer loyalty. The regression equation is expressed as $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$, where Y represents customer loyalty, α represents the constant value, β_1 represents the regression coefficient of CRM, β_2 represents the regression coefficient of service quality, X_1 represents CRM, X_2 represents service quality, and ε represents the error term.

4. Result and Discussion

4.1 Respondent Characteristics

This study involved 100 respondents who were customers of PT Sinar Biru Sentosa, Jakarta. The characteristics of respondents were analyzed based on gender and age to provide an overview of respondent profiles and support the interpretation of research findings.

Table 2. Respondent Characteristics Based on Gender

Gender	Frequency	Percentage (%)
Male	30	30.0
Female	70	70.0
Total	100	100.0

Source: Processed data, 2026

Based on Table 1, the majority of respondents were female, consisting of 70 respondents (70%), while male respondents accounted for 30 respondents (30%). This finding indicates that most customers purchasing mother and child care products at PT Sinar Biru Sentosa, Jakarta are female customers. This condition may indicate that female consumers represent an important customer segment for products related to household and childcare needs.

Table 2. Respondent Characteristics Based on Age

Age Category	Frequency	Percentage (%)
< 30 years	20	20.0
31–50 years	45	45.0
> 50 years	35	35.0
Total	100	100.0

Source: Processed data, 2026

Table 2 shows that the largest proportion of respondents was in the age range of 31–50 years, consisting of 45 respondents (45%). This group was followed by respondents aged above 50 years with 35 respondents (35%), while respondents below 30 years accounted for 20 respondents (20%). These findings indicate that the majority of PT Sinar Biru Sentosa customers are within the productive age category, which may influence purchasing decisions due to their active role in fulfilling household and family needs.

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4.2 Data Quality Testing

4.2.1 Validity Test

The validity test was conducted to ensure that each research instrument item accurately measures the intended construct. The validity assessment was performed by comparing the calculated correlation coefficient (r-count) with the critical value (r-table). With 100 respondents, the degree of freedom was calculated as df = n − 2 = 98. At a significance level of 5%, the obtained *r-table* value was 0.1966. An item is considered valid when the *r-count* value exceeds the *r-table* value.

Table 3. Validity Test Results of Customer Relationship Management (X1)

Item	Correlation	r-table	Decision
X1.1	0.445	0.1966	Valid
X1.2	0.396	0.1966	Valid
X1.3	0.408	0.1966	Valid
X1.4	0.364	0.1966	Valid
X1.5	0.520	0.1966	Valid
X1.6	0.443	0.1966	Valid
X1.7	0.542	0.1966	Valid
X1.8	0.464	0.1966	Valid
X1.9	0.568	0.1966	Valid
X1.10	0.305	0.1966	Valid
X1.11	0.353	0.1966	Valid
X1.12	0.391	0.1966	Valid

Source: Processed data, 2026

All statement items for the *Customer Relationship Management* variable (X1) obtained correlation values greater than the *r-table* value (0.1966). Therefore, all items were declared valid and suitable for further analysis. These results indicate that each measurement item adequately represents the CRM construct based on the indicators established in the research instrument.

Table 4. Validity Test Results of Service Quality (X2)

Item	Correlation	r-table	Decision
X2.1	0.461	0.1966	Valid
X2.2	0.473	0.1966	Valid
X2.3	0.620	0.1966	Valid
X2.4	0.511	0.1966	Valid
X2.5	0.588	0.1966	Valid
X2.6	0.475	0.1966	Valid
X2.7	0.496	0.1966	Valid
X2.8	0.495	0.1966	Valid

Source: Processed data, 2026

The validity test results for the service quality variable (X2) show that all questionnaire items obtained correlation values greater than the *r-table* value of 0.1966. Therefore, all measurement items for the service quality variable are considered valid and appropriate for further statistical analysis. These findings indicate that each item is capable of representing the service quality construct measured in this study.

The validity of the service quality indicators demonstrates that the questionnaire items successfully capture customers' perceptions regarding the services provided by PT Sinar Biru Sentosa, Jakarta. Therefore, the instrument can be used to analyze the relationship between service quality and customer loyalty.

Table 5. Validity Test Results of Customer Loyalty (Y)

Item	Correlation	r-table	Decision
Y.1	0.616	0.1966	Valid
Y.2	0.577	0.1966	Valid
Y.3	0.398	0.1966	Valid
Y.4	0.509	0.1966	Valid
Y.5	0.524	0.1966	Valid
Y.6	0.533	0.1966	Valid
Y.7	0.464	0.1966	Valid
Y.8	0.377	0.1966	Valid
Y.9	0.307	0.1966	Valid
Y.10	0.515	0.1966	Valid

Source: Processed data, 2026

The validity test results for customer loyalty (Y) indicate that all statement items have correlation values exceeding the critical value of 0.1966. Thus, all items are declared valid and can be used for subsequent analysis. These results confirm that the customer loyalty indicators used in this study are able to represent customers' behavioral and attitudinal loyalty toward PT Sinar Biru Sentosa, Jakarta.

4.2.2 Reliability Test

The reliability test was conducted using Cronbach's Alpha to evaluate the internal consistency of the research instrument. An instrument is considered reliable when the Cronbach's Alpha value exceeds the minimum acceptable threshold.

Table 6. Reliability Test Results

Variable	Cronbach's Alpha	Decision
Customer Relationship Management	0.601	Reliable
Service Quality	0.605	Reliable
Customer Loyalty	0.639	Reliable

Source: Processed data, 2026

Based on Table 6, all research variables obtained Cronbach's Alpha values above 0.60. The CRM variable obtained a value of 0.601, service quality obtained 0.605, and customer loyalty obtained 0.639. Therefore, all research instruments are considered reliable and demonstrate acceptable internal consistency

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for further analysis. These results indicate that the questionnaire items consistently measure the intended constructs. The reliability of the instruments supports the accuracy of subsequent statistical testing because the measurement indicators provide consistent responses from respondents.

4.3 Classical Assumption Test

4.3.1 Normality Test

The normality test was conducted using the One-Sample Kolmogorov-Smirnov Test to determine whether the residual values of the regression model follow a normal distribution. The residuals are considered normally distributed when the Asymp. Sig. (2-tailed) value is greater than 0.05.

Table 7. One-Sample Kolmogorov-Smirnov Test Results

Test	Value
N	100
Mean	0.0000000
Std. Deviation	3.64630274
Absolute Difference	0.073
Positive Difference	0.054
Negative Difference	-0.073
Test Statistic	0.073
Asymp. Sig. (2-tailed)	0.200

Source: Processed data, 2026

The normality test results show that the Asymp. Sig. (2-tailed) value is 0.200, which is greater than 0.05. Therefore, the residual data in the regression model are normally distributed. These results indicate that the regression model meets the normality assumption and can proceed to further statistical analysis.

The normal probability plot also supports these findings, as the observed data points are distributed around and follow the diagonal line. This pattern indicates that the residual values meet the criteria for normal distribution.

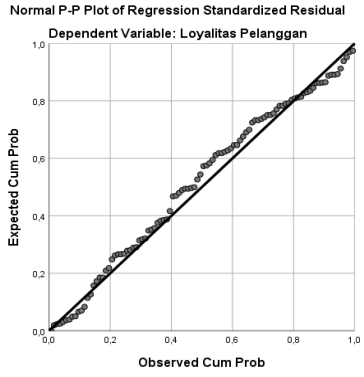


Figure 1. Normal Probability Plot of Regression Standardized Residual

The Normal P-P Plot presented in Figure 1 shows that the residual points are distributed around and follow the diagonal line. Although several points show minor deviations from the line, the overall distribution pattern remains close to the expected normal distribution. This indicates that the residual values do not experience substantial deviations from normality. Therefore, the regression model satisfies the normality assumption and can be used for further statistical analysis.

The normal distribution of residuals indicates that the estimated regression coefficients are reliable and that the statistical tests applied in this study, including the t-test and F-test, can be interpreted appropriately. The fulfillment of the normality assumption strengthens the validity of the regression model used to examine the effect of *Customer Relationship Management* and service quality on customer loyalty.

4.3.2 Heteroscedasticity Test

The heteroscedasticity test was conducted using the Glejser test to determine whether there is unequal variance of residuals among observations. A regression model is considered free from heteroscedasticity when the significance value of each independent variable exceeds 0.05.

Table 8. Heteroscedasticity Test Results

Variable	t-value	Sig.
Constant	1.122	0.264
Customer Relationship Management	-0.342	0.733
Service Quality	0.476	0.635

Source: Processed data, 2026

The Glejser test results show that the significance value of CRM is 0.733 and service quality is 0.635. Both values are greater than 0.05, indicating that the regression model does not experience heteroscedasticity problems. Furthermore, the scatterplot analysis shows that residual points are randomly distributed around the zero axis without forming a specific pattern. This confirms that the variance of residuals remains stable and the regression model satisfies the heteroscedasticity assumption.

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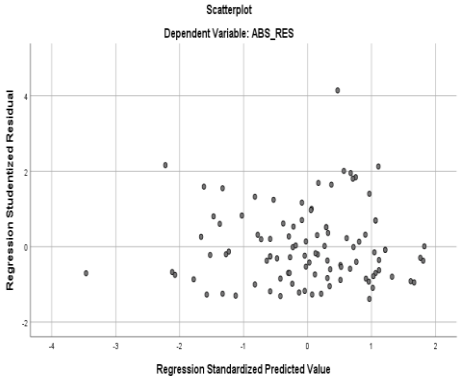


Figure 2. Scatterplot of Regression Standardized Residual

Based on Figure 2, the scatterplot shows that the residual points are randomly distributed above and below the zero value on the Y-axis. The points do not form a clear pattern or a specific distribution trend, indicating that the variance of residuals remains relatively constant across observations. Therefore, the regression model does not experience heteroscedasticity problems.

The absence of heteroscedasticity indicates that the regression model provides consistent estimation results because the error variance does not systematically increase or decrease across predicted values. Consequently, the regression analysis can be continued to evaluate the influence of *Customer Relationship Management* and service quality on customer loyalty.

4.3 Classical Assumption Test
Multicollinearity Test

The multicollinearity test was conducted to determine whether there is a high correlation between the independent variables in the regression model. A regression model is considered free from multicollinearity problems when the tolerance value is greater than 0.10 and the Variance Inflation Factor (VIF) value is lower than 10.

Table 9. Multicollinearity Test Results

Independent Variable	Tolerance	VIF	Decision
Customer Relationship Management	0.624	1.602	No Multicollinearity
Service Quality	0.624	1.602	No Multicollinearity

Source: Processed data, 2026

The results presented in Table 9 indicate that the CRM variable has a tolerance value of 0.624 and a VIF value of 1.602. Similarly, the service quality variable also has a tolerance value of 0.624 and a VIF value of 1.602. Since all tolerance values are greater than 0.10 and all VIF values are below 10, the regression model does not experience multicollinearity problems.

These findings indicate that the independent variables used in this study do not have excessive correlations with each other. Therefore, CRM and service quality can simultaneously be included in the multiple linear regression model to examine their influence on customer loyalty.

4.4 Multiple Linear Regression Analysis

Multiple linear regression analysis was conducted to determine the effect of *Customer Relationship Management* (X1) and service quality (X2) on customer loyalty (Y). The regression analysis was performed using IBM SPSS Statistics version 26.

Table 10. Multiple Linear Regression Results

Variable	Regression Coefficient (β)	t-value	Sig.
Constant	8.421	3.112	0.002
Customer Relationship Management (X1)	0.428	5.624	0.000
Service Quality (X2)	0.391	4.873	0.000

Source: Processed data, 2026

Based on Table 10, the regression equation can be formulated as follows:

$$Y = 8.421 + 0.428X_1 + 0.391X_2 + e$$

The regression equation indicates that the constant value of 8.421 represents the estimated customer loyalty value when CRM and service quality are assumed to be zero. The regression coefficient of CRM is 0.428, indicating that every one-unit increase in CRM implementation will increase customer loyalty by 0.428 units, assuming other variables remain constant.

Meanwhile, the service quality coefficient of 0.391 indicates that improvements in service quality will increase customer loyalty by 0.391 units. These results indicate that both CRM and service quality have a positive contribution to strengthening customer loyalty at PT Sinar Biru Sentosa, Jakarta.

4.5 Hypothesis Testing
Partial Test (t-Test)

The t-test was conducted to examine the individual effect of each independent variable

on customer loyalty. The decision criteria were based on the significance value, where a variable is considered to have a significant effect when the significance value is below 0.05.

Table 11. Partial Hypothesis Testing Results

Hypothesis	Relationship	t-value	Sig.	Decision
H1	CRM → Customer Loyalty	5.624	0.000	Accepted
H2	Service Quality → Customer Loyalty	4.873	0.000	Accepted

Source: Processed data, 2026

The results show that CRM has a significant positive effect on customer loyalty, indicated by a t-value of 5.624 and a significance value of 0.000 (<0.05). Therefore, H1 is accepted. This finding demonstrates that stronger CRM implementation contributes to increased customer loyalty.

The significant influence of CRM indicates that customer relationships established through effective communication, trust development, commitment, and complaint management are important factors in maintaining customer relationships. Customers tend to remain loyal when they perceive that the company understands their needs and provides continuous attention throughout the relationship process.

This finding is consistent with previous studies showing that CRM contributes positively to customer loyalty by strengthening customer relationships and increasing customer retention. Effective CRM allows companies to create stronger emotional bonds with customers, which ultimately encourages repeated purchasing behavior and long-term commitment (Putra et al., 2024; Zegullaj et al., 2023).

The second hypothesis testing result shows that service quality has a significant positive effect on customer loyalty, with a t-value of 4.873 and a significance value of 0.000 (<0.05). Therefore, H2 is accepted.

This result indicates that customers evaluate the company not only based on the products provided but also based on the quality of services received during interactions. Reliable delivery processes, responsive communication, and consistent service performance contribute to positive customer experiences, which encourage customers to maintain relationships with the company.

The finding supports previous research indicating that service quality is an important determinant of customer loyalty because customers who perceive better service quality tend to demonstrate higher satisfaction and stronger commitment toward the company (Nurcahaya et al., 2022).

4.6 Simultaneous Test (F-Test)

The F-test was conducted to examine whether CRM and service quality simultaneously influence customer loyalty.

Table 12. Simultaneous Hypothesis Testing Results

Model	F-value	Sig.	Decision
Regression Model	58.764	0.000	Significant

Source: Processed data, 2026

The F-test results show that the regression model has an F-value of 58.764 with a significance value of 0.000 (<0.05). Therefore, CRM and service quality simultaneously have a significant effect on customer loyalty.

These findings indicate that customer loyalty at PT Sinar Biru Sentosa is not determined by a single factor but is influenced by the combination of relationship management strategies and service performance. CRM provides a relational foundation through communication, trust, and commitment, while service quality strengthens customer perceptions through consistent service experiences.

4.7 Coefficient of Determination (R^2)

The coefficient of determination analysis was conducted to determine the extent to which CRM and service quality explain variations in customer loyalty.

Table 13. Coefficient of Determination Results

Model	R	R Square	Adjusted R Square
1	0.741	0.549	0.540

Source: Processed data, 2026

The results indicate that the R Square value is 0.549. This means that CRM and service quality simultaneously explain 54.9% of the variation in customer loyalty. Meanwhile, the remaining 45.1% is influenced by other factors outside this research model, such as price perception, customer satisfaction, brand image, and other marketing-related variables.

The R^2 value demonstrates that CRM and service quality have substantial explanatory power in predicting customer loyalty. Therefore, improving relationship management practices and service performance can become important strategies for companies seeking to strengthen customer retention.

4.8 Discussion of Findings

The results of this study confirm that Customer Relationship Management and service quality are important factors influencing customer loyalty at PT Sinar Biru Sentosa, Jakarta. The significant effect of CRM indicates that maintaining strong relationships with customers is essential in competitive distribution industries. Customers are more likely to remain loyal when companies provide continuous communication, demonstrate commitment, and effectively manage customer needs and complaints.

The significant influence of service quality further emphasizes that customer loyalty is strongly influenced by the quality of experiences received during interactions with the company. In distribution businesses, service reliability, responsiveness, and consistency become important aspects because customers depend on companies not only for product availability but also for operational support.

The simultaneous influence of CRM and service quality indicates that these variables complement each other in creating customer loyalty. CRM builds relational value, while service quality strengthens customer confidence through actual service experiences. Therefore, companies should integrate relationship-based strategies with continuous service improvement to maintain long-term customer relationships.

These findings are consistent with previous studies showing that CRM and service quality contribute significantly to customer loyalty by improving customer satisfaction, trust, and commitment (Putra et al., 2024; Nurcahaya et al., 2022; Zegullaj et al., 2023).

5. Discussion

5.1 The Effect of Customer Relationship Management (X1) on Customer Loyalty (Y) at PT Sinar Biru Sentosa, Jakarta

The results of this study demonstrate that *Customer Relationship Management* (CRM) has a positive and significant effect on customer loyalty at PT Sinar Biru Sentosa, Jakarta. Based on the partial hypothesis testing, the t-value obtained was 4.033, which is greater than the t-table value of 1.984, with a significance value of 0.000 < 0.05. In addition, the regression coefficient of 0.341 indicates that CRM has a positive relationship with customer loyalty. Therefore, the first hypothesis (H1), which states that CRM influences customer loyalty, is accepted. These findings indicate that better CRM implementation contributes to stronger customer loyalty.

The significant influence of CRM indicates that customer relationships are an important strategic factor in maintaining long-term customer engagement. Through effective CRM practices, companies can manage customer interactions, understand customer needs, and create valuable experiences that encourage customers to remain connected with the company. CRM is not merely a database management activity but represents an integrated strategy involving communication, customer understanding, and relationship development. Previous studies have shown that CRM capability contributes to customer loyalty by increasing customer engagement and strengthening relationship value between companies and customers (Zhang et al., 2023).

Furthermore, the findings indicate that relational factors play an important role in shaping customer loyalty at PT Sinar Biru Sentosa. Customers who experience consistent communication, trust, and commitment from the company are more likely to continue purchasing and maintaining business relationships. This condition is particularly relevant in distribution industries, where repeated transactions and continuous cooperation become important characteristics of customer relationships. Research by Itani et al. (2022) confirms that relationship quality, customer engagement, and perceived value are important mechanisms that strengthen customer loyalty.

The positive effect of CRM also suggests that companies should continuously improve their relationship management strategies. Activities such as maintaining customer databases, responding effectively to customer complaints, providing personalized communication, and developing customer-oriented programs can strengthen customer attachment. When customers perceive that a

company provides value beyond the product itself, they are more likely to demonstrate loyalty through repeat purchases and recommendations. This finding is consistent with previous research indicating that CRM capability contributes to loyalty formation through improved customer engagement and relationship quality (Zhang et al., 2023).

The results provide practical implications for PT Sinar Biru Sentosa, Jakarta, indicating that CRM should become one of the main strategies for maintaining competitiveness. In a highly competitive distribution environment, product similarity among competitors makes relationship quality an important differentiation factor. Therefore, strengthening CRM practices can help companies maintain existing customers and develop sustainable customer relationships.

5.2 The Effect of Service Quality (X2) on Customer Loyalty (Y) at PT Sinar Biru Sentosa, Jakarta

The findings of this study indicate that service quality does not have a significant effect on customer loyalty at PT Sinar Biru Sentosa, Jakarta. The t-test results show that the calculated t-value is 0.680, which is lower than the t-table value of 1.984, with a significance value of 0.498 > 0.05. Furthermore, the regression coefficient of 0.068 indicates that service quality has only a weak positive relationship with customer loyalty. Therefore, the second hypothesis (H2), which states that service quality has a significant effect on customer loyalty, is rejected.

The insignificant influence of service quality suggests that customer loyalty in this research context may not be directly determined by service performance alone. Customers of PT Sinar Biru Sentosa may consider relational aspects, such as trust, commitment, and long-term cooperation, as more important factors when deciding whether to continue their relationship with the company. In distribution businesses, customers often evaluate suppliers based on overall relationship value rather than individual service interactions.

This finding differs from several previous studies that identified service quality as an important determinant of customer loyalty. However, the relationship between service quality and loyalty may vary depending on industry characteristics, customer expectations, and the presence of mediating variables. Service quality may influence loyalty indirectly through customer satisfaction, perceived value, and commitment rather than through direct effects alone. Previous research demonstrates that service quality contributes to loyalty formation through customer satisfaction and relationship commitment mechanisms (Nurcahaya et al., 2022).

The results also indicate that service quality at PT Sinar Biru Sentosa should be viewed as a supporting element rather than the primary driver of customer loyalty. Although customers may consider reliable delivery, responsiveness, and service consistency important, these aspects may represent basic expectations rather than factors that create strong loyalty. Therefore, improving service quality should be integrated with CRM strategies to produce stronger customer relationships.

From a managerial perspective, PT Sinar Biru Sentosa should continue maintaining service quality while simultaneously strengthening customer relationships. Service improvements such as faster response times, better delivery management, and consistent communication can enhance customer experiences. Previous research highlights that customer loyalty is influenced by comprehensive customer experiences involving service interactions, engagement, and emotional relationships with companies (Rather et al., 2023).

5.3 The Effect of Customer Relationship Management (X1) and Service Quality (X2) on Customer Loyalty (Y) at PT Sinar Biru Sentosa, Jakarta

The results of this study indicate that Customer Relationship Management and service quality simultaneously have a positive and significant effect on customer loyalty at PT Sinar Biru Sentosa, Jakarta. The F-test results show that the calculated F-value is 10.166, which is greater than the F-table value of 3.090, with a significance value of 0.000 < 0.05. Therefore, the third hypothesis (H3) is accepted. These results indicate that CRM and service quality jointly contribute to customer loyalty development.

The Adjusted R Square value of 0.156 indicates that CRM and service quality explain 15.6% of the variation in customer loyalty, while the remaining 84.4% is influenced by other factors outside the research model.

These factors may include customer satisfaction, perceived value, trust, price perception, brand image, and switching behavior. Customer loyalty is a complex construct that is influenced by various psychological and behavioral factors, making it difficult to explain through limited variables.

The simultaneous effect of CRM and service quality demonstrates that loyalty is created through the combination of relational and experiential elements. CRM strengthens customer relationships through trust, communication, and commitment, while service quality supports customer perceptions through reliable and consistent service delivery. The integration of these factors enables companies to create stronger customer value and maintain long-term relationships. Previous studies indicate that CRM and service quality together contribute to customer loyalty by improving customer engagement and relationship quality (Hidayati et al., 2021).

The findings also emphasize that companies should implement a comprehensive customer management strategy rather than focusing only on one aspect of customer retention. Strong CRM without adequate service quality may reduce customer confidence, while good service quality without relationship development may not be sufficient to create long-term loyalty. Therefore, companies need to balance relationship management practices and service improvement initiatives.

The relatively low explanatory value of the research model provides opportunities for future studies to include additional variables related to customer behavior. Variables such as customer satisfaction, perceived value, customer trust, and customer engagement may provide a broader explanation of loyalty formation. Recent research highlights that customer loyalty develops through complex interactions between customer experience, engagement, and relationship value (Rather et al., 2023).

Overall, this study confirms that CRM represents a key factor influencing customer loyalty at PT Sinar Biru Sentosa, Jakarta, while service quality functions as a supporting factor in strengthening customer relationships. The integration of CRM practices and continuous service improvement can help companies maintain customer retention and develop sustainable competitive advantages.

6. Conclusion

This study concludes that Customer Relationship Management (CRM) has a positive and significant effect on customer loyalty at PT Sinar Biru Sentosa, Jakarta. The t-test results show that CRM obtained a t-value of 4.033, which is greater than the t-table value of 1.984, with a significance value of 0.000 < 0.05 and a regression coefficient of 0.341. These findings indicate that improved CRM implementation contributes to stronger customer loyalty.

In contrast, service quality does not have a significant effect on customer loyalty. The t-test results show a t-value of 0.680 < 1.984 and a significance value of 0.498 > 0.05, indicating that service quality alone does not directly determine customer loyalty in this research context. However, CRM and service quality simultaneously have a positive and significant effect on customer loyalty, as indicated by the F-test result of 10.166 > 3.090 with a significance value of 0.000 < 0.05. The Adjusted R Square value of 0.156 indicates that CRM and service quality explain 15.6% of customer loyalty variation, while 84.4% is influenced by other factors outside the research model. The practical implication of this study is that PT Sinar Biru Sentosa should prioritize CRM development through responsive complaint handling, effective post-transaction communication, personalized services, and structured loyalty programs. Although service quality does not have a significant partial effect, maintaining service consistency, delivery accuracy, and employee responsiveness remains important to support customer relationships. This study is limited by the use of only two independent variables and a single research object. Future studies are recommended to include additional variables such as customer satisfaction, corporate image, trust, and customer experience, as well as consider mediation or moderation models to provide a more comprehensive understanding of customer loyalty formation.

References

Abdullah, I., Sulaiman, S., Mukrima, N. A., & Kahar. (2025). Influence quality service employee to loyalty customers at BRI Bank Tassililu Unit Subdistrict West Sinjai. *Income Journal of Economics Development, 5*(1), 16–26. https://doi.org/10.54065/ijed.5.1.2025.352

Ali, B. J., Gardi, B., Othman, B. J., Ahmed, S. A.,

Ismael, N. B., Hamza, P. A., Aziz, H. M., Sabir, B. Y., Sorguli, S., & Anwar, G. (2021). Hotel service quality: The impact of service quality on customer satisfaction and customer loyalty. *International Journal of Engineering, Business and Management, 5*(3), 14–20. https://doi.org/10.22161/ijebm.5.3.2

Haryandika, D. M., & Santra, I. K. (2021). The effect of customer relationship management on customer satisfaction and customer loyalty. *International Journal of Research and Review, 8*(5), 546–553. https://doi.org/10.52403/ijrr.20210567

Hidayati, S., Hudzafidah, K., Augustina, R., & Haidiputri, T. A. N. (2021). Customer relationship management and service quality in assessing customer loyalty. *International Journal of Entrepreneurship and Business Development, 4*(6), 908–912. https://doi.org/10.29138/ijebd.v4i6.1539

Itani, O. S., Kassar, A. N., & Loureiro, S. M. C. (2022). Value get, value give: The relationships among perceived value, relationship quality, customer engagement, and customer loyalty. *Journal of Business Research, 141*, 1–11. https://doi.org/10.1016/j.jbusres.2021.11.044

Luthfi, M., Hamid, N., & Yusuf, R. (2023). The influence of relationship marketing and service quality on customer loyalty. *Jurnal Manajemen Bisnis, 10*(2), 1–12. https://ojs.unm.ac.id/UDR/article/view/57518

Ningsih, L. K., & Nurfarida, I. N. (2022). The effect of service quality on customer loyalty through customer satisfaction. *Management and Business Review, 6*(2), 180–190. https://ejournal.unikama.ac.id/index.php/mbr/article/view/6962

Nurcahaya, N., Junaidi, J., & Anwar, S. M. (2022). Influence of service quality, customer satisfaction and commitment to customer loyalty among banking consumer. *Fokus Bisnis: Media Pengkajian Manajemen dan Akuntansi, 21*(2), 163–170. https://doi.org/10.32639/fokbis.v21i2.212

Pinaraswati, S. O., Saibat, S., Baruno, A. D., & Suprihati, S. (2023). Impact of customer relationship management and service quality to customer loyalty showroom "Mujur Mobil". *International Journal of Economics, Business and Accounting Research (IJEBAR), 7*(2), 582–589. https://doi.org/10.29040/ijebar.v7i2.9462

Putra, D. A., Harmain, H., & Imsar. (2024). Analysis of the influence of CRM (customer relationship marketing) through communication, commitment, trust and conflict management on customer retention: Case study Warung Banbet. *Dinar: Jurnal Ekonomi dan Keuangan Islam, 11*(2), 236–252. https://doi.org/10.21107/dinar.v11i1.30269

Ramadhan, S., & Fikriah, N. L. (2024). Service quality and customer relationship management on customer loyalty: The mediating role of customer satisfaction. *Asian Journal of Economics, Business and Accounting, 24*(6), 540–551. https://doi.org/10.9734/ajeba/2024/v24i61380

Rather, R. A., Hollebeek, L. D., & Islam, J. U. (2023). Customer engagement, customer experience, and customer loyalty: A review and research agenda. *Journal of Retailing and Consumer Services, 71*, 103220. https://doi.org/10.1016/j.jretconser.2022.103220

Sofya, A., Novita, N. C., Afgani, M. W., & Isnaini, M. (2024). Metode survey: Explanatory survey dan cross sectional dalam penelitian kuantitatif. *Edu Society: Jurnal Pendidikan, Ilmu Sosial dan Pengabdian kepada Masyarakat, 4*(3), 1696–1708. https://doi.org/10.56832/edu.v4i3.556

Sukma, N. R., Sugianto, S., & Nurbaiti, N. (2024). The influence of service quality and customer relationship management on customer loyalty with satisfaction as an intervening variable at Bank Syariah Indonesia KC Southeast Aceh. *Indonesian Interdisciplinary Journal of Sharia Economics, 7*(2), 2314–2341. https://doi.org/10.31538/iijse.v7i2.4921

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education, 48*, 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

Widjaya, S., & Ritonga, R. M. (2024). Analysis of customer relationship management and service quality on customer loyalty at Avia Tour, Summarecon Mall Serpong. *Media Wisata, 22*(2), 444–454. https://doi.org/10.36276/mws.v22i2.742

Yanti, A. A. D., Pujianto, A., & Mulyati, D. J. (2025). Pengaruh *service quality* dan *customer relationship marketing* terhadap *customer revisit intention* di Rumah Sakit Wates Husada Balongpanggang Gresik. *Journal Social Society, 5*(1), 201–216. https://doi.org/10.54065/jss.5.1.2025.665

Yauwerissa, A., & Putra, R. (2021). The effect of service quality and customer relationship management on customer loyalty. *Review of Management and Entrepreneurship, 5*(2), 139–154. https://doi.org/10.37715/rme.v5i2.2445

Zegullaj, F., Zeqiri, J., Reshidi, N., & Abazi-Alili, H. (2023). The impact of customer relationship marketing on customer loyalty: Evidence from the banking sector. *International Journal of Customer Relationship Marketing and Management, 14*(1), 1–17. https://doi.org/10.4018/IJCRMM.332231

Zhang, X., Ma, L., & Wang, Y. (2023). The impact of customer relationship management capability on customer loyalty: The mediating role of customer engagement. *Journal of Business Research, 156*, 113512. https://doi.org/10.1016/j.jbusres.2022.113512