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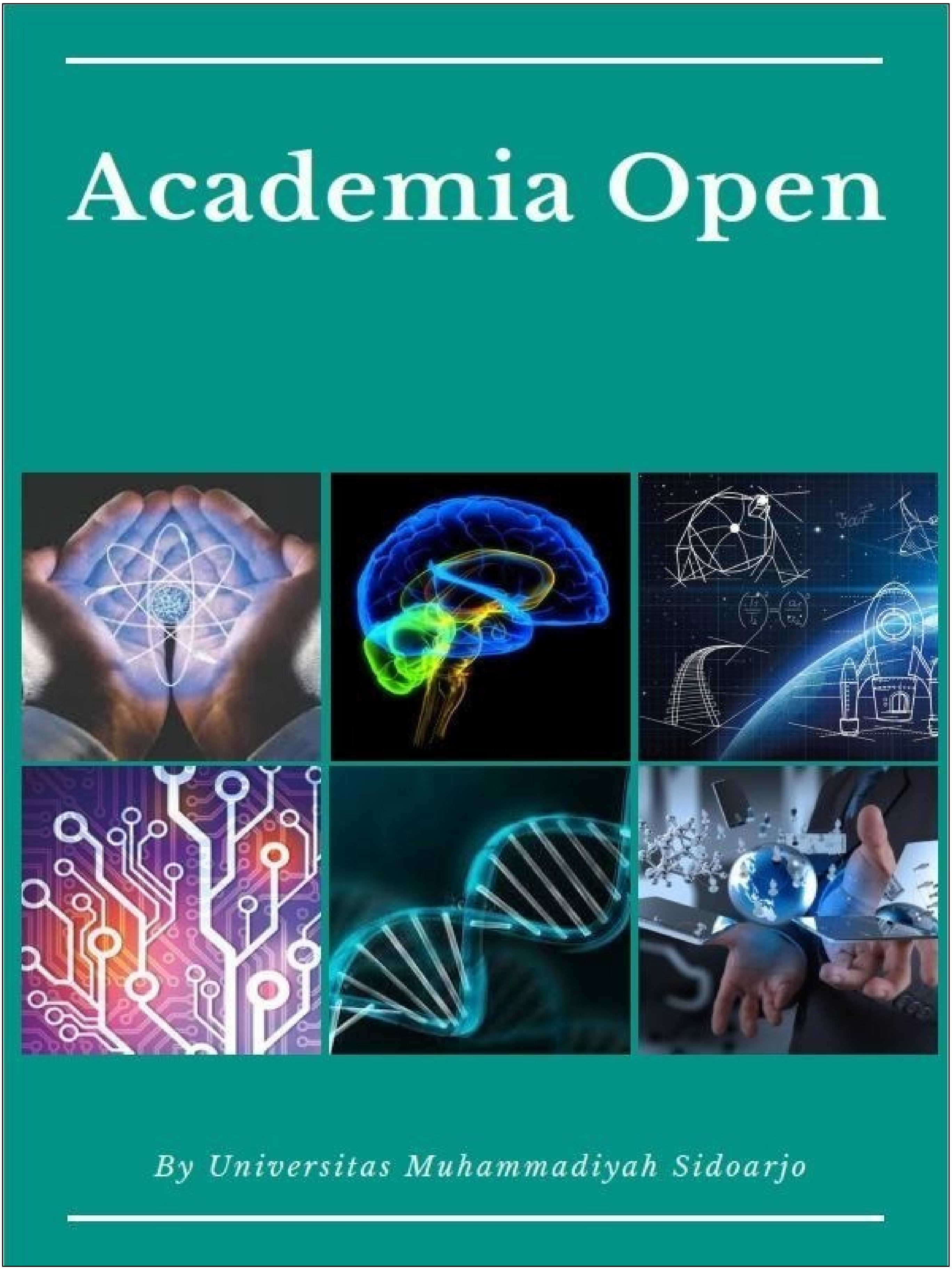
Vol. 10 No. 2 (2025): December
DOI: 10.21070/acopen.10.2025.12496



ISSN 2714-7444 (online), https://acopen.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

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DOI: 10.21070/acopen.10.2025.12496

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Vol. 10 No. 2 (2025): December
DOI: 10.21070/acopen.10.2025.12496

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Academia Open

Vol. 10 No. 2 (2025): December
DOI: 10.21070/acopen.10.2025.12496

Customer Relationship Management System Integration Boosts Customer Satisfaction and Loyalty in Banking

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Abstract

General Background: The rapid advancement of digital technology has transformed business operations, particularly in the banking sector, where customer relationships are a key determinant of competitive advantage. **Specific Background:** In the context of Indonesian banking, institutions such as Bank BRI face increasing competition and must therefore adopt innovative systems to enhance service quality and customer experience. **Knowledge Gap:** Despite the acknowledged importance of Customer Relationship Management (CRM), limited empirical evidence exists regarding the extent to which CRM system integration directly and indirectly affects customer satisfaction and loyalty in local banking units. **Aims:** This study aims to examine the impact of CRM system integration on customer satisfaction and loyalty at Bank BRI KCP Unit Sorowako, with customer satisfaction as a mediating variable. **Results:** Using quantitative analysis involving 100 respondents and statistical tests such as the t-test and path analysis, results indicate that CRM integration significantly enhances satisfaction and loyalty, both directly and through mediation. **Novelty:** The study provides empirical proof that satisfaction serves as a strong mediator, emphasizing the indirect pathway as more influential than the direct effect. **Implications:** These findings underscore the strategic importance of optimizing CRM systems to deliver faster, more personalized services that drive sustained customer loyalty and organizational growth.

Highlights:

- CRM integration enhances both direct and indirect effects on satisfaction and loyalty.
- Customer satisfaction acts as a key mediator between CRM and loyalty.
- Optimizing CRM systems supports personalized service and long-term customer retention.

Keywords: Customer Relationship Management, Customer Satisfaction, Customer Loyalty, Digital Banking, System Integration

Published date: 2025-11-06

Introduction

The rapid development of technology has created significant changes in consumer lifestyles and behavior. Advances in communication and information technology, particularly the internet, have made the

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internet an inseparable necessity in human life. Its presence has provided convenience for society in accessing various information [1].

The increasingly competitive business world, including in Indonesia, requires companies to maintain good relationships with customers in order to survive. To retain customers, companies must quickly and accurately identify and fulfill customer needs and expectations [2]. This can be achieved through the implementation of Customer Relationship Management (CRM), which has been proven to positively influence customer satisfaction and loyalty [3].

The digital banking industry in Indonesia has also experienced rapid development in recent decades. Economic growth, advances in information technology, and deregulation in the financial sector have all contributed to the dynamics of the national banking industry [4]. Digital transformation has changed the way customers interact with banking services, shifting their expectations toward greater accessibility and convenience [5].

As one of the most vital financial institutions, banks play an important role in national economic growth. Banks do not merely serve as deposit institutions but are also expected to provide the best services to ensure customer satisfaction and loyalty [6]. This is even more crucial considering that state-owned banks face increasingly fierce competition, not only with private national banks but also with foreign banks operating in Indonesia [7].

Customers also have different criteria when choosing banking services. Some prefer high interest rates and deposit security, while others prioritize speed and convenience. Therefore, bank management must continuously improve service quality to create customer satisfaction [8]. Higher satisfaction will subsequently lead to greater loyalty [9].

Implementing CRM has become one of the strategic efforts to capture market share while retaining loyal customers [10]. CRM is considered an integrated corporate strategy to optimally manage the customer lifecycle [11]. This aligns with the banking sector’s objective to preserve customer loyalty as a valuable asset [12].

The relationship between satisfaction, trust, and customer loyalty has also been confirmed in previous studies. High service quality, customer trust, and CRM implementation will enhance satisfaction, which in turn positively affects loyalty [13]. Moreover, customer satisfaction can serve as an effective tool for banks to maintain competitive advantage in the face of increasing market competition [14], [15].

Method

This study employs a quantitative approach with an associative research design, as it aims to explain the causal relationship between the variables under investigation. A quantitative approach was chosen because the research focuses on collecting numerical data, which is then statistically analyzed using the SPSS software.

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The population of this research consists of all active customers of Bank BRI KCP Unit Sorowako, totaling 25,501 customers. The sample size was determined using the Slovin formula with a margin of error of 10%, resulting in 100 respondents. The sampling technique applied was purposive sampling, with the criteria that respondents must be willing to participate, reside in East Luwu, and have been active customers of Bank BRI KCP Unit Sorowako for at least one year.

The variables used in this study are as follows: (1) Customer Relationship Management (CRM) Information System as the independent variable, with indicators including technology, process, knowledge, and people; (2) Customer Satisfaction as the intervening variable, with indicators including expectation conformity, revisit intention, and willingness to recommend; and (3) Customer Loyalty as the dependent variable, with indicators including recommendation, repurchase, and future transaction intention.

Primary data were obtained through the distribution of questionnaires using a 5-point Likert scale, while secondary data were gathered through a literature review of books, journals, and previous studies. The data analysis techniques included validity and reliability tests, classical assumption tests (normality, multicollinearity, and heteroscedasticity), coefficient of determination, t-test, and path analysis to examine both the direct and indirect effects among the variables.

Result and Discussion

A. Validity Test

The As can be seen in Table 1.

Table 1. Validity Test

Variable	Statement Item	Correlation Coefficient (r-count)	r-table	Remark
Sistem	X.1	0,496	0,165	Valid
Informasi	X.2	0,362	0,165	Valid
Customer	X.3	0,507	0,165	Valid
Relationship	X.4	0,500	0,165	Valid
Management	X.5	0,278	0,165	Valid
(X)	X.6	0,387	0,165	Valid
	X.7	0,255	0,165	Valid
	X.8	0,434	0,165	Valid
Customer	Z.1	0,435	0,165	Valid
Satisfaction (Z)	Z.2	0,171	0,165	Valid
	Z.3	0,357	0,165	Valid
	Z.4	0,401	0,165	Valid
	Z.5	0,417	0,165	Valid
	Z.6	0,439	0,165	Valid
Customer	Y.1	0,296	0,165	Valid
Loyalty (Y)	Y.2	0,167	0,165	Valid
	Y.3	0,430	0,165	Valid
	Y.4	0,242	0,165	Valid
	Y.5	0,309	0,165	Valid
	Y.6	1,000	0,165	Valid

ISSN 2714-7444 (online), https://acopen.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

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The validity test results indicate that all items in each variable are valid, as the calculated r-value is greater than the r-table value (0.165). Thus, all indicators used in this study are deemed appropriate and can be utilized for further analysis.

B. Reliability Test

As can be seen in Table 2.

Table 2. Reliability Test

Variable	Cronbach's Alpha (Calculated)	Cronbach's Alpha (Minimum)	Remark
Customer Relationship Management (X)	0,813	0,6	Reliabel
Customer Satisfaction (Z)	0,755	0,6	Reliabel
Customer Loyalty (Y)	0,735	0,6	Reliabel

The Cronbach's Alpha value for the Customer Relationship Management variable is 0.813, for the Customer Satisfaction variable is 0.755, and for the Customer Loyalty variable is 0.735. All of these values exceed the minimum reliability threshold of 0.6, indicating that all variables in this study are reliable and consistent in measuring the intended constructs.

C. Normality Test

As can be seen in Figure 1.

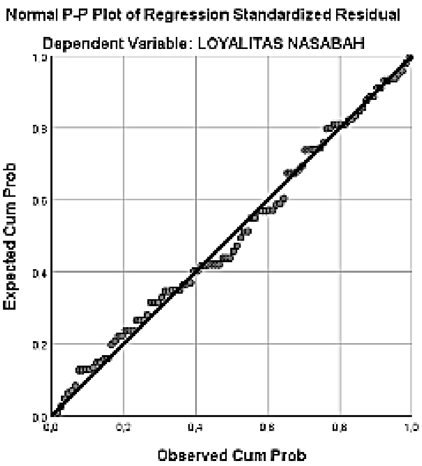

Figure 1. Normality Test

Based on the normality test using the P-P Plot, the data points are distributed around the diagonal line and follow its direction. This indicates that the research data are normally distributed, and thus the regression model satisfies the normality assumption.

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D. Multicollinearity Test

As can be seen in Table 3.

Table 3. Multicollinearity Test

No	Variable	Colinearity Statistic		Remark
		Tolerance	VIF	
1	*Customer Relationship Management*	0,283	3,532	No Multicollinearity
2	Customer Satisfaction	0,283	3,532	No Multicollinearity

The multicollinearity test results show that the tolerance values for the variables of price, location, and service quality are greater than 0.10, and the VIF values are less than 10.00. According to the criteria proposed by Sugiyono, these results indicate that there is no multicollinearity problem in the regression model used.

E. Heteroscedasticity Test

As can be seen in Figure 2.

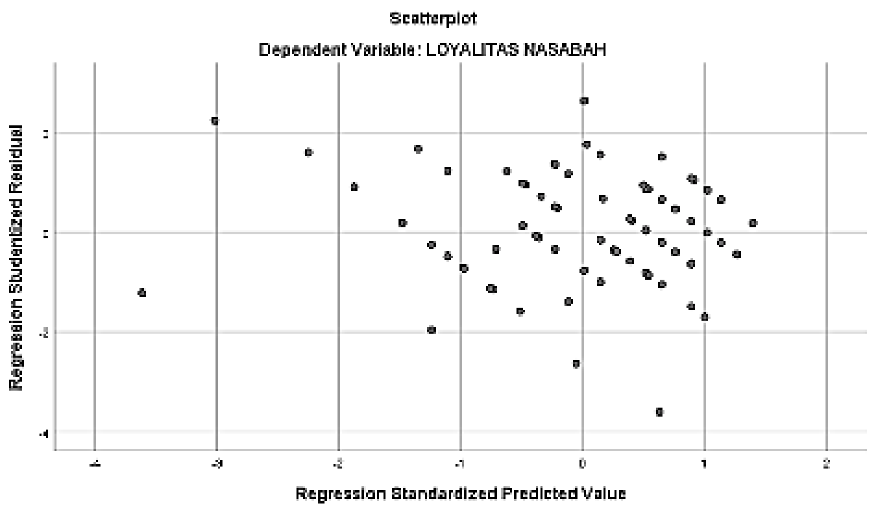

Figure 2. Heteroscedasticity Test

The scatterplot shows that the data points are randomly distributed, both above and below the value of 0 on the Y-axis, and do not form a specific pattern. This indicates that the regression model in this study is free from heteroscedasticity, and therefore suitable for hypothesis testing.

F. Coefficient of Determination (R^2)

As can be seen in Table 4 and 5.

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Table 4. Coefficient of determination (R^2) Sub 1

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,847[a]	,717	,714	1,29583

a. Predictors: (Constant), SISTEM INFORMASI CRM

b. Dependent Variable: KEPUASAN NASABAH

Based on the table above, the R Square value is 0.717. This indicates that 71.7% of the variation in the Customer Satisfaction variable can be explained by the Customer Relationship Management Information System variable, while the remaining 28.3% is influenced by other factors outside the research model.

Table 5. Coefficient of determination (R^2) Sub 2

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,873[a]	,761	,756	1,18076

a. Predictors: (Constant), KEPUASAN NASABAH, SISTEM INFORMASI CRM

b. Dependent Variable: LOYALITAS NASABAH

Based on the table above, the R Square value is 0.761. This means that 76.1% of the variation in the Customer Loyalty variable (Y) can be explained by the Customer Relationship Management Information System (X) and Customer Satisfaction (Z). Meanwhile, the remaining 23.9% is influenced by other factors not included in this research model.

G. t-Test Results

As can be seen in Table 6 and 7.

Table 6. t-Test Sub 1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,676	1,343		4,225	,000
	SISTEM INFORMASI CRM	,595	,038	,847	15,753	,000

a. Dependent Variable: KEPUASAN NASABAH

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The t-test results show that the Customer Relationship Management Information System variable (X) has a significance value of 0.000 (< 0.05) with a t-count of 15.753, which is greater than the t-table value of 1.983. Thus, H0 is rejected and H1 is accepted, indicating that the Customer Relationship Management Information System has a significant effect on Customer Satisfaction (Z).

Table 7. t-Test Sub 2

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3,652	1,331		2,744	,007
	SISTEM INFORMASI CRM	,275	,065	,396	4,248	,000
	KEPUASAN NASABAH	,505	,092	,511	5,485	,000

a. Dependent Variable: LOYALITAS NASABAH

Based on the t-test results, the Customer Relationship Management Information System variable (X) obtained a significance value of 0.000 (< 0.05) with a t-count of 4.248, which is greater than the t-table value of 1.983. Thus, H0 is rejected and H1 is accepted, indicating that the Customer Relationship Management Information System has a positive and significant effect on Customer Loyalty (Y).

Furthermore, the t-test results show that the Customer Satisfaction variable (Z) obtained a significance value of 0.000 (< 0.05) with a t-count of 5.485, which is greater than the t-table value of 1.983. Therefore, H0 is rejected and H1 is accepted, meaning that Customer Satisfaction has a positive and significant effect on Customer Loyalty (Y).

H. Path Analysis

As can be seen in Figure 3.

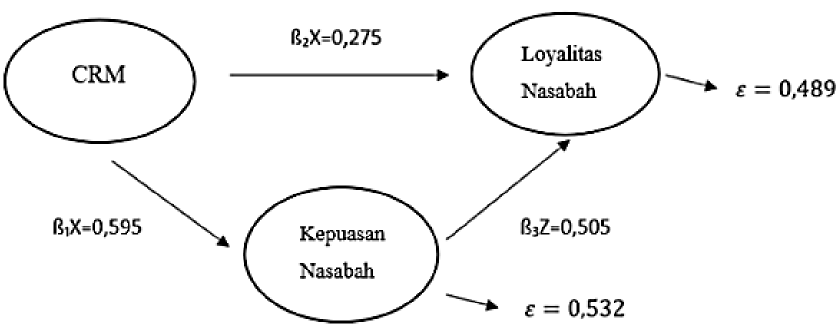

Figure 3. Path Analysis

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The path diagram in Figure 3 illustrates the magnitude of both direct and indirect effects of the independent variable on the dependent variable. The path analysis results show that the direct effect of the Customer Relationship Management Information System (X) on Customer Loyalty (Y) is 0.275. Meanwhile, the indirect effect of CRM (X) on Customer Loyalty (Y) through Customer Satisfaction (Z) is $0.595 \times 0.505 = 0.300$.

Thus, it can be concluded that the value of the direct effect (0.275) is smaller than the indirect effect (0.300). This indicates that Customer Satisfaction (Z) serves as a mediating variable, thereby strengthening the relationship between the Customer Relationship Management Information System and Customer Loyalty through the enhancement of customer satisfaction.

Conclusion

Based on the research findings, it can be concluded that the integration of the Customer Relationship Management (CRM) Information System has a significant effect on customer satisfaction and loyalty at Bank BRI KCP Unit Sorowako. The integrated system facilitates service processes, enhances communication effectiveness, and provides a better service experience, thereby increasing customer satisfaction. High levels of satisfaction are proven to positively influence loyalty, as customers tend to engage in repeat transactions and recommend the services to others. In addition, CRM also has an indirect effect on loyalty through customer satisfaction, indicating that satisfaction serves as an important mediating factor in strengthening the relationship between CRM and customer loyalty.

Acknowledgement

The journal would like to express its sincere gratitude to the scientific supervisors for their dedicated guidance and important comments throughout the research process. In addition, the author would like to express his gratitude to the BRI Sorowako customers who enthusiastically participated and provided data for this study. Special thanks are conveyed to colleagues and peers who offered encouragement and insights during the completion of this research. Finally, the author acknowledges the support of BRI Sorowako and all parties who contributed, directly or indirectly, to the successful completion of this study.

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ISSN 2714-7444 (online), https://acopen.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo